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COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

DOES EXCHANGE RATE MATTERS FOR FOREIGN DIRECT  
INVESTMENT INFLOW TO ETHIOPIA?

BY: GOSHU DESALEGN

A THESIS SUBMITTED TO DEPARTMENT OF ACCOUNTING AND FINANCE  
AS A PARTIAL FULFILMENT OF THE REQUIREMENTS FOR MASTER OF  
SCIENCE DEGREE IN ACCOUNTING AND FINANCE

June 2019

Addis Ababa-Ethiopia

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Prepared by: Goshu Desalegn

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### **Statement of Declaration**

I, Goshu Desalegn, declared that this thesis entitled Does exchange rate matters for foreign direct investment inflow to Ethiopia? Is my original work, prepared under the guidance of Sewale Abate (Ph.D). All resources used in the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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Certification

This is to certify that the thesis prepared by Goshu Desalegn, entitled: Does exchange rate matters for foreign direct investment inflow to Ethiopia? And submitted in partial fulfillment of the requirements for the degree of Master of Science in Accounting and Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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## ***Abstract***

*Does Exchange rate matters for foreign direct investment inflow to Ethiopia?*

*Goshu Desalegn.*

*Addis Ababa University, 2019*

*This study examines the effect of exchange rate on foreign direct investment inflows in Ethiopia. The aim of the study is to investigate how foreign investors through FDI respond to change in exchange rate level in Ethiopia. In line with the explanatory variable exchange rate; economic growth, inflation, trade openness, and external debt are added as a control variable in the study. The study uses explanatory research design and quantitative research approach with secondary time series data utilized over the study period 1992-2017(26 years). More specifically, the study adopts an autoregressive distributed lag (ARDL) model. Furthermore, the long run relationships of variables are quizzes through bound tests and confirm the existence of a long-run relationship among variables. So, in order to investigate the short run relationship among variables, the error correction model is employed in the study. The finding of the study reveals that; exchange rate level and foreign direct investment have a positive relationship in the short run as well as in the long run and statically significant at 1 percent significance level. So, devaluation of Ethiopian Birr against US dollar affects foreign direct investment positively in both cases. But, the last year effect (one period lag) of devaluation on current year foreign direct investment was found negative. On the other hand, variables like economic growth and inflation have a negative relationship with foreign direct investment in the long run as well as in the short run. But, except economic growth, inflation found insignificant in the long run. External debt found positive and insignificant in the long run. However, the relationship between trade openness and foreign direct investment were found positive and statically significant. This study suggests that the government shall ensure the stability of the exchange rate once devaluation is made.*

**Keywords:** exchange rate, foreign direct investment, Autoregressive distributed lag model

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## **List of Acronyms**

ADF	Augmented Dickey-Fuller
ARDL	Auto Regressive Distributed Lag Model
EPRDF	Ethiopian People Revolutionary Democratic Front
ED	External Debt
ER	Exchange Rate
EPA	Ethiopian Private Investment Agency
FDI	Foreign Direct investment
FI	Foreign Investors
FDRE	Federal Democratic Republic of Ethiopia
GDPGR	Growth Domestic product growth rate
INF	Inflation Rate
IFE	International Fisher Effect
MOFED	Ministry of Finance and Economic Development
MNC	Multi-National Companies
NBE	National bank of Ethiopia
PPP	Purchasing Power Parity
PP	Philps perron
SAP	Stabilization and adjustment programs
TNC	Transnational Companies
TOP	Trade openness
WB	World Bank

## **CHAPTER ONE**

### **INTRODUCTION**

This chapter provides general information about the research topic in order to give some clues to the readers about the study area. The chapter begins with the background of the study then followed by a statement of the problem, research hypothesis, overall and specific objectives of the study, significance of the study and finally scope, limitation, and organization of the study.

#### **1.1. Background of the study**

Foreign direct investment is defined as companies from one country making a physical investment into another country and it is a measure of foreign ownership of productive assets, such as factories, mines, and land (Ali et al, 2017). As highlighted in Cushman (1985), Foreign Direct Investment (FDI) is an international flow of capital that provides a parent company or multinational organization with control over foreign affiliates.

According to Cambazoglu (2016), FDI occurs when the benefits of manufacturing in the host country outweigh the loss of large scale production associated with one plant in the home country. The choice of investment location is an important criterion for a multinational firm while deciding on FDI. So, for the host country, increasing foreign direct investment can be used as one measure of growing economic globalization. Because, the foreign direct investment can provide a firm with new markets and marketing channels, cheaper production facilities, access to new technology, products, skills, and financing.

Besides, evidence shows that, with suitable host-country investment climate and policies, foreign direct investments (FDI) have the potential to play a significant role in economic development; especially in developing countries. Because, FDI provides a major source of capital which brings with it up-to-date technology and offers so many prospects for greater diversification of the industrial base and exports, which contribute to the integration of economies to the rest of the world. Over time, FDI associates with many positive externalities in the form of employment generation, skills transfer, technological progress, and enhanced productivity and efficiency. Ultimately, these factors have a positive impact on economic growth and consequential poverty reduction.

According to Goldberg (2009), by 2005, the inflows of FDI around the world were rose to \$916 billion and more than half of these flows were received by businesses within developing countries.

Particularly, the role of FDI is quite critical in Africa, given the fact that poverty levels are generally high while domestic savings and income remain extremely low as income is mainly channeled to consumption expenditure. In this respect, an increase in FDI is deemed necessary to close the development financing gap characteristic of Sub-Saharan Africa (Asiedu, 2002). Given the benefits of FDI inflows, attracting FDI has become an important policy objective of many countries in Africa. Because; the level of poverty in Africa is very high when it is compared to those developed countries. Relating to Africa, Recent empirical evidence suggests that, a sustained rate of economic growth of between 8 and 10 percent is necessary to reverse the spread of poverty (Asiedu, 2002). So, in order to achieve this, attracting foreign direct investment becomes an important tool. But, identifying factors that attract foreign direct investment is an endless homework in whole over the world (Asiedu, 2002). Supporting to this, there are many theories trying to explain the determinants of foreign direct investment and there are few important variables that play a role in decisions relating to foreign direct investment (Froot and Stein, 1991). Additionally, a number of studies are conducted across the world to identify the major determinants of foreign direct investment. But, they do not end up with the same results. The justifications behind differences in results are, the effect of each variable across the countries is different and have different implication. For example, from traditional economic factors; the host countries macroeconomic policies, the legal system, political stability, market size and availability of raw materials are some of the very important variables in deciding foreign direct investments. Apart from this, on a contemporary basis, foreign exchange rate level has also emerged as critical in attracting foreign direct investment. However, the empirical evidence of the relationship between exchange rate level and FDI flows has not been clear cut (Kosteletou and Liargovas, 2000). While, a number of empirical studies argued that, one of the many influences on foreign direct investment activity is the behavior of exchange rates (Asmah and Andoh, 2013).

An exchange rate is defined as the domestic currency price of a foreign currency matter both in terms of their levels and their volatility (Asmah and Andoh, 2013). So, among determinants of FDI, one of the most important determinants is the behavior of exchange rate level (which shows the level of domestic currency against foreign currencies). In the context of Ethiopia, Ethiopia is one of a sub-Saharan country working for sustainable economic development to overcome poverty. The Ethiopian government is making so many policy arrangements to improve economic growth from time to time and one of this is attracting foreign direct investment through exchange rate (devaluation of home currency against the US dollar).

In this case, the devaluation of the local currency against foreign currency has its own implication for foreign direct investment. According to Froot and Stein (1991), Depreciation of a host countries currency reduces its production cost and lowers the relative cost of capital and thereby, supports foreign direct investments. So, after depreciation, foreign investors can acquire more capital with their existing wealth (Froot and Stein, 1991). Additionally, a number of theories and empirical evidence support the idea of, devaluation of a home currency against foreign currency attracts foreign direct investments. So, this is an implication for that; the level of the exchange rate is a very important variable in determining the level of foreign direct investments.

Hence, by considering the above facts and absence of any study conducted in Ethiopia to examine the effect of exchange rate on foreign direct investment, this study focuses on the effect of exchange rate level on foreign direct investment inflows in context of Ethiopia. In order to examine the effect of exchange rate on foreign direct investment inflows; economic growth, inflation; Trade openness and External debt are added as a control variable for this study.

#### **1.1.1. Overview of Ethiopia's FDI and Exchange rates performance.**

The Ethiopian FDI performance over the period can be reviewed on the basis of the two regimes that have been in place in the country. The first period is classified as pre-1991 (1974-1991), the period which is known by the command system of economic management and the second period is classified as post-1991, the period which is known by signifying some move away from the command system and commenced with the stabilization and adjustment programs (SAP) of the World Bank (WB) and the International Monetary Fund (Haile and Assefa, 2006).

The economic policy of pre-1991 was controlled by the government and was no foreign direct investment activities in general. For this matter, this study gives consideration for post-1991. In addition to this, the exchange rate during that regime (pre-1991) was fixed (pegged) to US dollar

#### **The post-1991 period**

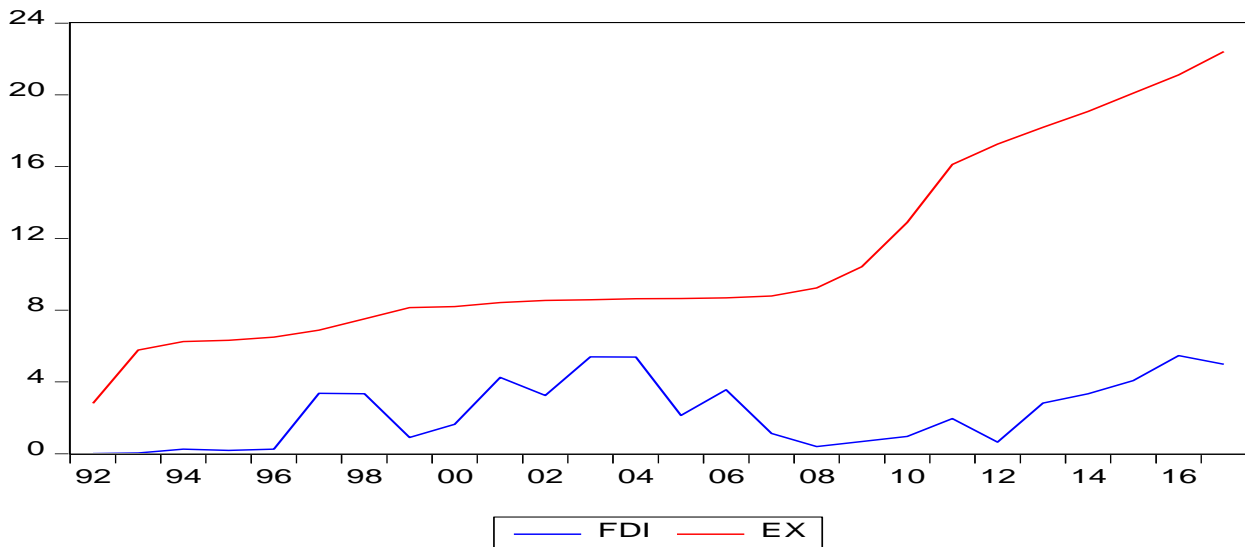
The post-1991 period began with the coming to power of Ethiopian People Revolutionary Democratic Front (EPRDF) in 1991 and the adoption of the WB/IMF sponsored Structural Adjustment Program soon after. Among the stated objectives of the new government were/are:

reducing macroeconomic imbalances, eliminating structural distortion, improving the country's human capital and infrastructure as well as poverty reduction. The government implemented a series of reform measures in order to change the command economic system that had been in place to a free market economy, to speed up the integration of the economy into the world economy and to encourage the wider participation of the private sector in the development process of the national economy (FDRE-MOFED, 2002).

According to Geda and Degefe (2002), as cited in Haile and Assefa (2006), the following specific measures were taken to promote the export sector and participation of the private sector in the country. Deregulation of domestic prices, Devaluation of the national currency from 2.07 birr per dollar to 5 birr per dollar, Liberalization of the foreign exchange market, (that means changing from fixed (pegged) exchange rate to floating exchange rate.), Elimination of Export taxes except for coffee, Lowering of Maximum import duties from 230 percent to 60 percent, Simplification of Export licensing regulation and procedure, Provision of adequate incentives, strengthening and enhancing institutional support for the export sector. Then after, increasing the role of the private sector in the economy was one of the main objectives of the government. The privatization program was started in 1994. The Ethiopian Privatization Agency (EPA) which has the power and duties of transferring state-owned enterprises to private ownership was established. Then after, a domestic investment starts to constitute the main component of capital formation in Ethiopia by accounting for about 64 percent of total investment. In addition to this, FDI has started to play some role in the country following the 1992 liberalization program. The reforms, as well as the government introduction of investment guarantee schemes and incentives, helped to raise the share of inward FDI.

Hence, this study gives consideration for a period of post-1991 to examine the effect of exchange rate on foreign direct investment inflows in the context of Ethiopia. Hereunder, the overall performance of exchange rate and foreign direct investment inflows in Ethiopia are shown with the help of figure.

**Figure 1.1: Trend of foreign direct investment and exchange rate in Ethiopia.**



As it can be seen in the above figure 1, the line which shows constantly in movement represents the trend in exchange rate level and the up and downs show a trend in foreign direct investment inflows as a percentage of GDP for a given study period. The level of the exchange rate during the study period seems likely increasing from time to time but foreign direct investment trend shows ups and downs in movement. These ups and downs of movement may happen because of the unbalanced level of growth between foreign direct investment and economic growth. In this study, foreign direct investment is measured as a percentage of GDP; so, if the economy is growing at the fastest rate than the foreign direct investment is growing, it may show such like up and downs movement in the trend

**Table 1.1: Exchange rate level in Ethiopia post-1991**

1992	Devaluation of birr from 2.07 to 5 per USA dollar. Introduction of the auction-based exchange rate system to Ethiopian financial market.
1993	The value of birr was 5 birr per Us dollar
1995	Unification of official exchange rate and auction-based exchange rate systems. The Ethiopian Birr was valued at 6.25 per Us dollar.
1998	Establishment of interbank foreign exchange and money markets. The exchange rate was 6.88 per US dollar.
2001	Introduction of daily Interbank Market. In this year the average exchange rate was 8.53 per US dollar
2010	Devaluation of birr from 13.63 to 16.35 per US dollar
2017	Devaluation of birr from 23.4177 to 26.91 per US dollar

Source: compiled by researcher form the work of (Rao and Tolcha, 2016)

## **1.2.Statement of the problem**

Countries borders are opened and people with different ideas are welcomed into it, they are given a chance to learn new ways of doing things. In doing that, they benefited from many things which are helpful for their development. Because, Wealth is transferred not only through the exchange of goods and services but also through the exchange of ideas, exchange of technology and the exchange of manpower. Foreign Direct Investment, which involves the investment of assets in a host country, provides a host country with its many advantages (Njuguna, 2016).

During the last three decades (since 1990), many studies conducted to investigate the determinants of foreign direct investment in general and the effect of exchange rate on foreign direct investment in particular. At a theoretical level, many theories show a straightforward logic of exchange rate changes influencing the benefit raised from foreign direct investment (Goldberg, 2009). The study conducted by Bloningen (2005) on determinants of foreign direct investment shows that, exchange rate as one of two (the other being taxes) fundamental external factors that drive FDI behavior.

In addition, the study conducted by Buch and Kleinert (2006) suggests the effect of exchange rate on foreign direct investment which can be discussed in the following manners. Firstly, if the appreciation of home currency against foreign currencies made by the host country, it increases the profit of multinational companies through cheaper inputs and this causes FDI cheaper. But, on the other hand, appreciation of host country currencies reduces the profit of multinational companies through the lowest receipt from exports. However, the study of Chakrabarti and Scholnick (2002) argue that; a large devaluation of the host country's currency has the expectation of large FDI inflows because of an anticipation of future opportunities. Thus, Exchange rate levels are assumed to play an important role not only in the location but also in the composition of capital inflows. On the other hand, there is a stream in the relevant literature which rejects any link between exchange rates and FDI flows based on the argument that; the price of one country's assets should not matter because of only their rate of return matters (Barrell, et al, 2003). In general, the ambiguous effects of exchange rate changes on FDI are stressed. In line with the experience of developing countries, there are a number of studies conducted to examine the effect of exchange rate on foreign direct investment. For instance, Kiyota and Urata (2004) show the effect of exchange rate on foreign direct investment which can be viewed in three separate parts.

Initially, as for an exchange rate level, FDI goes to countries where the currency is weaker as a given amount of foreign currency can buy more investment. Secondly, high exchange rate volatility discourages FDI and finally, Exchange rate expectations of a depreciation of the currency of the host country attract FDI.

Particularly, to discuss this issue in the context of Ethiopia (the effect of exchange rate on foreign direct investment); Prior to 1992, the official rate of the Ethiopian currency was pegged (fixed) to the US dollar and the economic activity of the country was controlled by the government (command economy). So, it is difficult to examine the effect of exchange rate on foreign direct investment since there was no remittance related to foreign direct investment inflows before 1992. But then after, post-1992, floating exchange rate was adopted and furthermore, the remittance of foreign direct investment inflows are growing slowly from time to time (IMF report, 2017).

According to the IMF report (2017), Ethiopia has benefited from the significant inflow of foreign direct investment estimated up to US\$4 billion in 2017. But, on the other hand, the external debt account of the country in 2017 was around US\$ 26 billion (33% of GDP). Even, after a huge amount of external debt and foreign direct investment inflows, the shortage of foreign currencies are highly demonstrated in the economy.

To overcome this, attracting foreign direct investment (increasing the level of FDI inflows) and initiating export are found important. In doing so, the Ethiopian government used exchange rate policy as one available tool and managed with a recent correction through a devaluation of 15% in 2017(IMF report, 2018). But, Evidence from literature drawing on a range of countries over time tends to suggest that, it is important to keep the exchange rate competitive though not necessarily undervalued. Additionally, lessons from country-specific cases supported by economic theory do suggest that, for low-income countries like Ethiopia, transitioning to increased manufacturing and exports, the exchange rate is not the primary determinant especially where significant aid and soft loan inflows exist (Ferrand, 2017).

In line with this, so many studies are conducted in Ethiopia on determinants of foreign direct investment inflows. For Example, Tolosa (2009), Demissie (2016), Haile and Assefa (2006), Fantaye (2016) and Berhane (2015); All studies were carried out to establish the possible factors that determine the inflow of Foreign Direct Investment to Ethiopia.

In their study, all researchers used different independent variables that determine foreign direct investment in Ethiopia but not include the exchange rate as a part of independent variables. In addition to this, other studies are conducted by Temeselew (2016), Aga (2016), Sommie (2016) and shebu (2017) on determinants of foreign direct investment. In doing so, the researchers used annual data observation ranges from 1974-2015(Sommie, Aga and shebu) and 1980-2014(Temesew) respectively and included the level of the exchange rate as part of independent variables. So, in their study, the researchers tried to examine the relationship between the exchange rate and foreign direct investment. But, since the study was conducted with data which begins from 1974 and 1980 respectively, it does not represent the reliability of the result; because the performance of foreign direct investment inflows in Ethiopia should be reviewed post-1992. Furthermore, the exchange rate level of pre-1992 was fixed to the US dollar, which implies that; it does not represent the true market value of the Ethiopian Birr.

Apart from the general determinants of foreign direct investment, different studies are carried out in Ethiopia in different perspectives with regard to foreign direct investment. For example, Kassahun (2015) conducted a study on the impact of tax incentives in attracting foreign direct investment. Negash (2014) conducted on Assessment of foreign direct investment effectiveness in development and its challenges and prospects in the case of the special zone of Oromia. Wudu (2011) conducted on the impact of foreign capital inflows on economic growth, saving and investment. Gurmu (2017) conducted on the role of foreign direct investment for export growth of the leather industry in Ethiopia and Kedir (2012) conducted on the impact of foreign direct investment on poverty reduction in Ethiopia.

Additionally, a number of studies are conducted in Ethiopia regarding exchange rate; but in different perspectives. For example, Bekele (2011) conducted a study on the effect of exchange rate on export. Rao and Tolcha (2016) conducted a study on general determinants of the exchange rate in Ethiopia. Desalegn (2013) conducted on the effect of exchange rate movement on the trade balance in Ethiopia. Nigussie (2016) conducted on the effect of exchange rate on economic growth in Ethiopia. And, Tesema (2016) conducted on the impact of the real effective exchange rate on the trade balance in Ethiopia. So, accordingly, based on the above fact, the effect of exchange rate on foreign direct investment inflows is an untouched area of study.

The motivation behind a researcher for conducting this study is that; initially, Ethiopian government considered exchange rate as a mechanism for attracting foreign direct investment and managed with a recent correction through a devaluation of 15% in 2017. Secondly, there is no known study that has been undertaken to examine the effect of exchange rates on foreign direct investment in Ethiopia. And, finally, the result of different studies conducted across the world was contradicting one another. So, it is helpful for the country to conduct research on; to what extent exchange rate and foreign direct investments are related in Ethiopia.

Hence, by giving consideration for the above research gap, this study focuses on what is essentially the effect of the exchange rate level on foreign direct investment inflows in Ethiopia. Therefore; the question that this study seeks to answer is, to what extents do exchange rate influence foreign direct investment in Ethiopia.

### **1.3. Research Objective**

#### **1.3.1. General objective**

The broad objective of this study is to examine the effect of exchange rate on foreign direct investment inflows in the context of Ethiopia.

#### **1.3.2. Specific Objectives**

In line with the above general objective of the study, the following specific objectives are set for the study.

- To examine the effect of exchange rate on foreign direct investment inflows in Ethiopia with respect to short run as well as long-run effect.

### **1.4. Research Hypothesis**

As mentioned in the above research objective, the broad objective of this study is to examine the effect of exchange rate on foreign direct investment inflows in general. Furthermore, a hypothesis of the study stood on the theories related to foreign direct investment and other researchers past empirical studies related to the effect of exchange rate on foreign direct investments. The results from the literature reviews are used to establish expectations for the relationship between the variables. Hence, the present study seeks to test the following hypotheses.

*H1: Exchange rate has a positive and significant effect on Foreign Direct Investment.*

### **1.5. Significance of the study**

This study will be useful in the determination of the exchange rates to achieve a balance of domestic and foreign levels of investment in a bid to attract foreign direct investment.

It will provide knowledge that can help Policymakers in Ethiopia, to appreciate the significance of the exchange rate while coming up with monetary policies that may deliberately influence the flow of foreign direct investments.

The findings of this study are expected to explain the relationship between foreign price levels and domestic price levels and why an increase in foreign direct investment may happen or may not happen with an immediate change in the exchange rate.

Contribution to existing literature: In addition, scholars and researchers will find this study useful if they wish to use the findings as a basis for current and further research on the subject. Moreover, academic researchers dedicated to studying foreign direct investment in Ethiopia will benefit from this empirical study focused on the effect of the exchange rate level on foreign direct investment inflows. So far no such study has been carried out in Ethiopia except on general determinants of foreign direct investment.

### **1.6. Scope and limitation of the Study**

This study is conducted to examine the effect of exchange rate on foreign direct investment inflows in Ethiopia. In doing so, all sectors, which their data are directly related to foreign direct investment and exchange rate, are included in the scope of the study. The study was conducted with annual data observation of 26 years. In conducting the study, the following points were found as a limitation for the study that was carried out.

The first limitation of the study was the sample size of the study, which is too small with only 26 years covering Annual data from the year 1992 – 2017, was obtained to run the model. This is because of; both the floating exchange rate and foreign direct investment inflows were introduced under the new government of Ethiopia (EPRDF) at that period. In addition to this, the study is more meaningful, if the data collected was analyzed through a quarterly or semi-annual basis in order to capture the relationship between the dependent and independent variables. But, because of the absence of such data information, the researcher is forced to examine the relationship between variables on a yearly basis.

## **1.7.Organization of The Study**

This study is organized into five chapters. The first chapter includes background of the study followed by Problem statement and objective of the study, research hypothesis, and significance of study, scope, and limitation was discussed in the first chapter.

The remaining part of the study is organized as follows. The next section (chapter two) presents an overview of the theoretical and empirical literature conducted on the effect of exchange rate on foreign direct investment inflows to a host country. Chapter three provides the research design and method of data collection of the study; Chapter four discusses data analysis and interpretation of the study. Finally, the last chapter (five) consists of summaries of major findings, conclusions, and recommendation for possible solutions.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **INTRODUCTION**

This chapter focuses on explaining the concept of foreign direct investment and exchange rates, in line with their definition, different theories of foreign direct investment and exchange rates are summarized. In addition to this, a detailed review of empirical studies on the effect of exchange rate on foreign direct investment with overall general determinants of foreign direct investment is discussed.

#### **2. Theoretical and Conceptual literature Review**

##### **2.1.Foreign Direct Investment**

According to Muema (2013), FDI is an investment that is meant to be long lasting and those that are outside the economic or physical boundaries of the investor. The beneficiary country of FDI is equipped with the capital flow as well as technology flow that will aid in its development. In this case, when a country seeks to invest in another, the benefit it seeks to achieve must be higher than the risks it must deal with it. Additionally, Muema suggests FDI as a way for creating new job opportunities as upon setting of the business, recruitment, and training of the locals in the host country. Furthermore, foreign direct investment is helpful for transferring skills and technological know-how as well as providing jobs in host countries.

According to Kinuthia (2010), Foreign Direct Investment usually represents long term commitment to the host country, which is a preferred form of investment because it has no obligations to the host country. FDI is important in adopting new technologies, skills and managerial capabilities in the different sectors of the economy which are traditionally difficult to get through the use of domestic savings. And if not, there would be difficulty in the importation of the technology from abroad. This would be compounded by the fact that transferring technology to firms with little experience is risky and they will find difficulty in the use of it and it comes at a great cost (Olson, 2008). FDI is responsible for many externalities that come in the form of benefits to the home country that are not responsible for generating incomes to the host country. FDI is important for developing countries as it avails the resources necessary to optimize the level of economic development (Ismaila & Imoughele, 2010).

## **2.2.Theories of Foreign Direct Investment**

As discussed in the preceding chapter, Nowadays, the issue of foreign direct investment has got more attention at global and national levels. Different theoretical kinds of literature have been done to explain the issue of FDI and the motivation underlying FDI. But, in this study, the case is different; since it is conducted to examine the effect of exchange rate on foreign direct investment. So, hereunder the researcher incorporates some theories of FDI.

### **2.2.1. The Product Life Cycle Theory**

According to Vernon (2005) cited in Terzi et al (2010), this theory provides that; the goods of a particular firm are destined for different markets according to the stage the product is in the life cycle. In the first stage, the goods are produced to meet the needs of the local customers although some could be for exports. In the second stage of the goods, the product has become more mature and is well known. This leads to standardization of the goods being produced. In the last stage of the goods, the product is completely standardized and there is competition from local firms. This leads the firm to diversify into other markets and areas that will enable it to produce the goods less costly and thus be able to enjoy profits.

### **2.2.2. The Eclectic Theory of FDI**

A popular conceptualization of, and theoretical framework for, FDI determinants is the “eclectic paradigm” attributed to Dunning (1999). It provides a framework that group’s micro- and macro-level determinants in order to analyze why and where multinational companies (MNCs) invest abroad. The Ownership, Localization and Internalization model of Dunning (1980) is the first theory to provide a more comprehensive analysis of the determinants of foreign direct investment and because of this; it is the most referenced one by authors writing on FDI. The principal hypothesis of the paradigm of international production by Dunning (1988) is that “firms become MNE or engage in production in a foreign country if and when three interrelated conditions are satisfied; ownership, localization and internalization advantages. Here under they are discussed accordingly.

**The ownership-specific advantages:** allow a firm to compete with others in the markets it serves regardless of the disadvantages of being foreign because it is able to have access to an exploit and export natural resources and resource-based products that are available to it. These advantages may arise from the firm's ability to coordinate complementary activities such as manufacturing and distribution, and the ability to exploit differences between countries (Dunning, 1993).

**Location advantage:** the next important point next to ownership is a location advantage, unlike ownership advantages, location advantages are country-specific advantages. Transnational Companies (TNCs) in order to fully reap the benefit of firm-specific advantages, they should consider the location advantage of the host country. This includes accessibility and low cost of natural resource, adequate infrastructure, political and macroeconomic stability. As a consequence, the location advantage of the host country is one essential factor that determines the investment decision of TNCs (Dunning, 1993).

**Internalization advantages:** the other point is related to internalization, if a firm has the ownership advantages mentioned above, it will be more beneficial to use them itself than a lease or sell them to foreign firms; and this does through an extension of its existing value-added chains or adding new ones in foreign markets. In other words, internalization of transactions works through protecting against undesirable market failure (by avoiding trade costs such as costs of enforcing property rights, quotas, tariffs, and price controls) and exploit government incentives that encourage MNEs. Different MNEs might have different kinds of investment incentives. The motives for firms to engage in foreign production activities can be classified into four groups: market seeking, resource seeking, efficiency seeking and strategic asset seeking (Dunning, 1993).

**Market Seekers:** These MNEs are those in which their primary objective is to exploit the existing huge market and the future prospects of the existing market including the neighboring countries. Fewer production and transaction cost, the opportunity to adopt local tests and preferences and being familiarized with the local languages, legal requirements, and market procedures are some of the advantages of Market Seeking FDI(Aga,2016).

**Natural Resource Seekers:** As highlighted in Aga (2016), these are enterprises; their main aim is to obtain high-quality resources at a lower cost, so as to increase their profit and to be more competent in the market. Accordingly, three kinds of resource-seeking FDI do exist. The first are those primary producers and manufacturing enterprises looking for raw materials and physical resources such as fuels, minerals, and agricultural products. The second resource seeking FDI are those enterprises, who are looking for cheap unskilled or semi-skilled labor, known as “labor seeking investment.” These MNEs usually look for cheap labor force particularly by the time the labor cost in their home country becomes too expensive. The third types of resource-seeking FDI are those MNEs that need to gain access to management and organizational skills, technology, information, and marketing expertise (Aga, 2016).

**Efficiency Seeker:** According to Dunning (1993), as cited on Chiara Franco et.al, (2008) and re-cited by Aga (2016, P-15), explained that this kind of FDI is thought to occur in two occasions. Firstly, firms “take advantage of differences in the availability and costs of traditional factor endowments in different countries”, while secondly, they “take advantage of the economies of scale and scope and of differences in consumer tastes and supply capabilities” According to Dunning, efficiency-seeking investments are normally undertaken in countries with broadly similar economic structures and income levels. The main attractions of these kinds of investments according to (Wilska, 2002) as cited on (Hannula, 2005) are low labor costs and incentives to local production. Skilled or less expensive labor force or cheaper assets and infrastructure that may offer foreign firms possibilities to increase their efficiency.

**The Strategic Asset Seeker:** The main aim of strategic asset seeker MNEs is sustaining and strengthening their competitiveness to dominate the global market,(Dunning and Lundan 2008) as cited in the works of (Gichamo, 2014). These multinational enterprises are usually engaged in FDI through obtaining the properties of foreign corporations so as to promote their long-term strategic objectives. “The motives of strategic asset seeking investment are less to exploit specific cost or marketing advantages over their competitors and more to augment the acquiring firm’s global portfolio of physical assets and human competencies which they perceive will either sustain or strengthen their ownership-specific advantages (Gichamo, 2014).

Furthermore, classification of FDI has been viewed in different other authors from various directions and these classifications are also discussed in the following manner.

**Risk Reduction-Seeking FDI:** Risk reduction-seeking FDI projects are designed to reduce the corporate risk associated with unfavorable changes in macroeconomic variables, changes in supply and demand among national markets and the moves of competitors and of national and regional governments. Minimizing the firm's exchange rate exposure is an important goal for risk reduction seeking FDI. For instance, firms may handle exchange rate risk by moving production from unfavorable to favorable locations. Furthermore, because of the supply and demand fluctuations among national markets, firms may undertake FDI projects designed to diversify the market risk by having production at multiple locations. Another way for firms to reduce risk is to undertake FDI projects that are designed to broaden the product line. Firms may also undertake FDI projects because of the risks associated with the actual or potential moves of competitors. The purpose of the project could be to prevent competitors from exploiting new profit opportunities as well as to create better opportunities for responding to competitors in the future (Ekström, 1998).

**Export-Oriented Investment :** Export-oriented investment is described by Reuber (1973) as cited in the works of Asafo-Adjei (2007), as the type of investment that reflects a wide range of considerations such as the desire to develop secondary and more diversified sources of supply by way of obtaining lower-cost products to be used either as inputs or for sale elsewhere. The World Investment Report of the year (2014) advocates that; this type of investment is made with the intention of the investor to improve its competitive position at home or internationally. This is undertaken by taking advantage of the lower cost of production that host countries offer, where lower cost is indicated by some of the following, amongst others: incentives from the host country, an abundance of skilled and semi-skilled labor with concurrent relatively lower wages, and political and monetary stability. With this type of investment, investors attach little significance to host countries' markets. The major factors with regard to the determination of the location of the investments are cost, as explained above, and the reliability of production.

**Market-Development Investment:** As highlighted on Aga (2016), Unlike the export-oriented type of FDI, the objective of making a market-initiated type of FDI is to sell the final output in the host country's market. However, a common feature of both types is that they thrive on the feasibility of a reduction in production cost. Another key consideration by the investor is the potential growth in the size of the host country's market in the long term. Although in the short to medium term the investment may not yield the expected return, if the long-term view is that the host country's market will grow in size and hence become profitable and the investment may then be undertaken. The growth in the host country's market is, however, dependant on the general economic outlook of the host country and hence the macroeconomic variables. Besides, the effectiveness of the economic reform policies, other policy directives like tariffs, trade controls, taxes, subsidies and so forth, as well as various regulations imposed on foreign investors by the host country, become fundamental to the decision to invest (Reuber, 1973; Bosworth, 1999; Collins, 1999; Aschauer, 1999).

**Government-Initiated Investment:** In comparison with the export-oriented and market-development types of FDI, government-initiated type of FDI occurs through the provision of substantial incentive structures to investors by a host country's government. These are suitable to investors, however; market, as well as cost conditions, may have precluded them from investing in the host country under normal or "no-incentive" circumstances. To protect the host country and make the option of providing incentives to foreign investors efficient, such incentives usually directed at specific projects or industries. Additionally, host country governments provide incentives in order to attract foreign investors to operate in either less-developed regions or regions, which require improvement in certain sectors. Host-country governments have historically played an important role in attracting or excluding FDI through subsidies, which is one of the most effective ways of stimulating the flow of FDI. Subsidies take a number of different forms. They serve to reduce the risk premium of locating abroad and so they may directly influence a firm's cost structure.

### **2.2.3. The Kojima Hypothesis**

As highlighted in kinuthenia (2012), Kojima (1985) saw FDI as a means of transferring capital, technology, and managerial skills from the source country to the host country. Kojima categorized FDI into two kinds.

The first is trade-oriented whereby there is an excess demand for import and excess supply of export at the original terms of trade. This kind of FDI leads to improvement of welfare in both countries. Also, it would normally imply investment in industries which the source country has a comparative disadvantage. This would enhance trade in both countries.

The second kind of FDI is the anti-trade oriented FDI, which has exactly the opposite effect to those of the first kind. This kind of investment is less trade oriented, and it has an adverse effect on trade and it also promotes the unfavorable restructuring of industries in both countries.

### **2.3.Determinants of Foreign Direct Investment**

Foreign Direct Investment involves real assets and this ensures that an investor will be active in managing the assets he/she is acquiring. There are various factors that make one country more attractive than the others and these factors can also vary from one period to another. These determinants have contributed to studies on why some given countries are more successful than other nations in attracting FDI. Quite, many types of research have been conducted on the determinants of FDI but so far, there is yet to be a definite consensus. The different approaches to the determinants of FDI do not cancel each other out but explain different aspects of the same phenomena (Kinuthia, 2010).

**Exchange Rates:** Exchange rate is an essential component affecting FDI. The eventual importance of exchange rates to the location of FDI was initially suggested by Asiedu (2002). Asiedu stated that; different currency areas were responsible for the generation of FDI because Exchange rate affects FDI in several ways. Froot and Stein (1991) have discussed the relative wealth effect of exchange rates. A rise in the exchange rate in terms of host country currency over the home country currency implies a depreciation of the host country currency. A real depreciation of the host country currency favors home country purchases of host country assets and therefore leads to an increase in inward FDI in the host country.

Gushman (1985) and Culem (1988), emphasize the effect of exchange rate changes on relative labor cost, A real depreciation of the host country currency allows home country investors to hire more labor for a given amount of the home country currency, and therefore real depreciation is associated with an increase in inward FDI in the host country.

**Economic Growth:** Economic growth can be expressed in different ways but the most appropriate explanation of economic growth is market size and growth of domestic product rate from year to year (Wheeler and Mody, 1992).

**Market Size:** The market size hypotheses argue that; inward FDI is a function of the size of the host country market. High demand, prospects for economies of scale, good economic health and absorptive capacity are the factors that give green signal to foreign investors. The combined effect of such factors can be captured by market size (Wheeler and Mody, 1992) and (Zhang and Markusen, 1999).

**Growth of GDP:** Market size exhibits existing demand in an economy, while growth represents the future potential. A rating level of economic growth is a strong indication of market opportunities. The growth of the host market is deemed to be significant for expansionary direct investment (Clegg and Scott-Green, 1998). Growth is also important because higher rates of economic growth are usually associated with an increase in the profitability of corporations (Gold, 1989).

**Inflation:** Inflation is very important in managing the macroeconomic environment and fiscal governance. It is usually measured by changes in the consumer price index which is essentially a weighted average price of goods and services consumed in a period. A high level of inflation is an indicator of tensions in the economic environment of a country and is a reflection of the government's reluctance to have a stable monetary policy. It can be argued that risk-averse foreign investors coupled with high levels of inflation will lead to decreases in FDI in the host country since investors are not willing to risk the profits that they expect from their investments (Kadongo, 2011). Given high uncertainty levels, investors are bound to demand high price levels in order to offset their exposure to inflationary risks which are bound to lower the volume of investment. Therefore, as a move to encourage investments, inflation rate stability is important (Gastanaga et al., 1998). Nwankwo (2006) has stressed macroeconomic policy failures as deflecting FDI flows from Africa; he points that, poor monetary and fiscal policies cause unsustainable deficits in budgets and increase inflationary pressures thereby raising the production costs in the local country and thus creating instability in exchange rates and thereby making the region too risky as a destination for FDI.

**Restrictions:** While a government strives to ensure that trade within its boundaries is a reflection of market forces of supply and demand, it imposes some restrictions to protect its citizens from being exploited by other developed nations. Restrictions such as quotas and tariffs have an impact on the trade that can be carried out in a country. Multinational Corporations seek countries that have lowered restrictions on FDI (Madura and Fox, 2011).

These could include reduction of tariffs on imported inputs. This can also be referred to as the level of openness a country has in relation to its trade (Muema, 2013).

**External Debt Burden:** While determining the exchange rate, demand, and supply of home and foreign currency play a vital role. Other things being constant, if the demand for foreign currency increases, the home currency is subject to depreciation and vice versa (Madura, 2010).

To make continuous inflows of foreign exchange, governments' make a different type of policy changes and promote various modes like exports, FDI, external debts, overseas remittances. Hence, the uncertainty of foreign exchange inflows becomes the reason of depreciation. But, at the same time, a lot of harms are associated with external borrowings like debt servicing, implementation of foreign policies and much more hard terms and conditions of loan normally unfavorable to borrowing country. By realizing this fact, countries try to invite and encourage FDI as they have many merits, but at the same time, the investor scan the scenario and if he feels that the prospective host country is already over-debt economy with weak negotiation power for international financial issues, he/she may become unwilling to make investment in that country, or he/she negotiate with governments for making FDI at his own terms and conditions. If the government agrees on major terms and conditions, the foreign investor makes the investment happily. So, the level of external debt is another variable which determines foreign direct investment (Muhammed and Hassen, 2017).

**Tax Rates:** After-tax cash flows are considered in the determination of profits; therefore, countries that impose relatively low tax rates on corporate earnings are more likely to attract FDI (Madura and Fox, 2011).

**Government Consumption:** Government consumption leads to a higher level of fiscal deficit, which in turn generates macroeconomic instability and poor credit position of a country. Increase in government consumption also leads to higher rates of interest, which crowd out investment including foreign investment.

**Urbanization:** The extent of urbanization is a social variable, which is expected to have a positive impact on FDI as proposed by Root and Ahmad (1979). Urban demand for manufactured goods is higher than the rural demand. Moreover, if a country covers a vast area under urbanization, the production environment for MNCs would be better.

**Costs:** When the costs of labor and transport are found to be cheaper, it may encourage investment in a country. Some countries are even attractive to foreign investors because of their central geographic location or efficient transport systems (Clark, 2002). This also goes hand in hand with good infrastructure and communications network as it enables work to be done efficiently. Profit will be higher when investors find a country that will enable them to operate their business at a low cost and produce at full scale at a competitive price

**Official Development Assistance:** Official development assistance is taken as an indicator of development activities. Expenditures financed by official development assistance favorably determine infrastructure and also indicate the good terms with international institutes that buildup the confidence of foreign investors. So, foreign investors like to come to these countries (Luger and Shetty, 1985).

## **2.4. DETERMINANTS OF EXCHANGE RATE**

The exchange rate can be determined by so many variables, but the level of significance is different from one variable to another variable, so hereunder based on some empirical reviews and theoretical assumptions the selected variables which are determinant of exchange rate are discussed in following subsections of the study.

### **2.4.1. Bank Rate.**

Interest rate is determined by market forces and the monetary policy of a country. In economy, price changes are part of a process that determines interest rates. High saving interest rate attracts investors to save money in the bank while conversely, a low interest rate will encourage investors involved in borrowings and bond markets (Okoth, 2014). According to Ngumo (2012), the lending interest rate is a price which borrower pays in order to consume resources. In other words, it is an amount charged by a lender to a borrower for uses of assets (Shafi et al., 2015; Vikram & Vikram, 2015). According to Keynes (1923), lending interest rates represent the cost of borrowing capital for a given period of time. Thus, in many studies, the lending interest rate is being examined as one of the macroeconomic determinants of the foreign exchange rate. Interest rates are usually expressed in percentage and adjusted from time to time by the central bank. If a country facing inflationary pressure, the central bank will increase the base lending interest rate in order to curtail the money supply. If the country does not apply interest rate adjustment, it might lead to an equilibrium in demand and supply for money market and cause movements in the foreign exchange rate and arbitrage profits exists via borrowing and investing between countries (Ramasamy & Abar, 2015).

#### **2.4.2. Foreign Exchange Reserves (FER)**

Foreign exchange reserves also known as FOREX reserves. It refers to foreign currency deposits and bonds held by the central bank and monetary authorities of a nation. The term includes gold, and IMF reserve positions (Arunachalam, 2010). According to Olayungbo and Akinbobbola (2011), foreign exchange reserves significantly affect the foreign exchange rates in the short run. The study showed that an increase in reserve holdings would serve as a complementary tool to stabilize the exchange rates. Abdullateef and Waheed (2010) argue that holding of reserves has significantly positive impacts on foreign exchange rates, where an increase in foreign exchange reserves will cause appreciation in the foreign exchange rate. Highlighted from Bouraoui and Phisuthtiwatcharavong (2015), there is also a positive relationship between foreign exchange reserves and appreciation of the currency. The researchers stated that foreign exchange reserves reflect the international investment position and the economic performance of a country. Therefore, higher foreign exchange reserves can raise the value of a domestic currency against foreign currencies.

#### **2.4.3. Export**

In the world of economy, export is expected as the lead of demand for currency while net investment leads to the supply of the currency (Heim, 2010; Parveen et al., 2012). According to Ito et al. (1999), successful exports will cause surplus in the current account and thus a nominal appreciation pressure on the currency, if and only if the government does not intervene in the foreign exchange market. Moreover, according to Wong and Tang (2007), a nation which relies heavily on the export of the technology market, the foreign exchange rate will increase due to rapid demand for electrical and electronic products.

Besides, Meng (2015) stated that increase in export rebate rate will restore a country's export competitiveness and thus foreign exchange rate devaluation. Continued fiscal expansions will also cause rising in home price level and foreign exchange rate. For example, as the Chinese exports become cheaper, other nations will in disadvantage position if they are competitors of China in export markets which can explain the competition in exportation market with the price effect.

#### **2.4.4. Import**

Today, products produced from every part of the world are seen everywhere. These overseas products or import products give consumers more purchasing choices and help them in managing household budgets.

However, too much import might also distort a nation's balance of trade and devalue its currency. Bashir and Luqman (2014) stated that too much trade restrictions and import barriers imposed by country may decrease import values, and will lead to an appreciation of exchange rate. Parveen et al. (2012) also suggest that increases in import would lead to a depreciation of the foreign exchange rate. Further, Gelbard and Nagayasu (2004) said that import value is assumed to be negatively related to the exchange rate. These results are consistent with research results from Nucu (2011) who found increased imports would cause current balance account to become poor, and thus currency depreciates. Moreover, Waheed (2012) argued that higher income level will cause residents to purchase more imported goods or services, and thus result in high demand for foreign currencies which causes depreciation of the domestic currency

#### **2.5.Theories on Exchange Rates**

It is known that, for currencies to be traded in a common market, one currency has to be expressed in terms of the other currency. An exchange rate can be defined as the price of one currency in terms of another (Mishkin & Eakins, 2009). An exchange rate can either be explained as a direct or an indirect quotation. A direct quotation refers to how much of the home currency can buy a unit of the foreign currency while an indirect quotation is how much of the foreign currency is obtainable from a unit of the home currency (Howells & Bain, 2007). The exchange rate can be also explained as nominal and real exchange rate, the Exchange rate is said to be the nominal exchange rate when it includes inflationary effects and is referred to as the real exchange rate when inflationary effects are excluded (Lothian & Taylor, 1997). Prior to 1972, nearly all countries in the world operated on a fixed exchange rate system whereby their individual country's currencies had a fixed rate relative to the US dollar. But in today's world; the floating exchange rate is more preferable than fixed. That is why it is practicable in whole over the world including Ethiopia. The importance of the exchange rate lies in the fact that it allows a self-adjustment of the rate depending on the supply and demand conditions of the foreign exchange in the economy. This self-adjustment is responsible for bringing equilibrium in the market without altering the level of reserves.

It is also important in allowing countries to formulate their own monetary policies without worrying about the effects on the balance of payments, External shocks and imbalance effects (Ndungu, 2000). So, in line with the above assumptions; it is possible to come up with the conclusion of that, the exchange rates are driven largely by market supply and demand. Using the flexed exchange rate systems, the price of currencies are a result of the demand and supply forces of the currency in the forex market.

### **2.5.1. Theory of Purchasing Power Parity**

Purchasing power parity (PPP) is the theory saying that the nominal exchange rate between two currencies should be equal to the ratio of aggregate price levels between the two countries; that is equivalently saying that a unit of currency of one country will have the same purchasing power in a foreign country. That means; it is all about the law of one price. The theory was first stated by Gustav Cassel, the Swedish economist in 1918, where he used the theory to recommend sets of official exchange rates at the end of First World War; to allow for normal trade relations to resume (Shapiro, 1992). This theory was founded on the law of one price which is held to be true in the absolute version.

According to the PPP theory, price levels adjusted for exchange rate differences should be identical worldwide i.e. one unit of the local currency should have the same purchasing power whole over the world. The theory banks its prediction of exchange rate movements on the changing patterns of trade due to different rates of inflation between countries. These theories are differentiated by the short and long run concept. In the long run, if two countries produce an identical good, holding all factors that include transportation and legal costs constant, the given price of that good, in essence, should be constant throughout the world regardless of which country produces it. This is what is referred to as the law of one price. This law is only relevant in the long run (Mishkin & Eakins, 2009).

The absolute form of PPP is based on the notion that, in the absence of international trade barriers, consumers shift their demand to areas with low prices implying that similar baskets of goods in two different countries should be of the same cost (Madura & Fox, 2011). If one currency is undervalued, goods produced in that country tend to be cheaper than similar goods produced somewhere else; therefore, growing exports and diminishing imports unless trade barriers, transportation costs or the perishability of products makes it feasible for people to buy the same products in various places (Mishkin & Eakins, 2009).

The relative form of this hypothesis is that; PPP exists the home currency rate of depreciation in comparison to the foreign currency is equal to the difference in the differences in the aggregate inflation prices in the two countries (Sarno & Taylor, 2002). This means, in effect the issues such as transportation costs, tariffs and quotas are taken into account. This relative form of PPP is highly used. PPP is not a complete theory of exchange rate determination because deviations from PPP have been seen to prevail throughout the history of the world (Shapiro, 1992). According to the PPP theory, exchange rates will not be constant but adjust to match purchasing power parity. The proportional change in the foreign currency should seek to maintain parity between the new adjusted price indexes of the two given countries. This theory does not fully explain exchange rates because the assumptions that all goods are identical as well as the fact that trade barriers and transportation costs are low are not realistic in two different countries. PPP is important as it helps us to observe the ideal situation. In perfect conditions, FDI would not be influenced by exchange rates as the profit gained by operating in a country whose currency is weaker would not materialize (Mishkin & Eakins, 2009)

### **2.5.2. International Fisher Effect**

The International Fisher Effect model was designed by Irving Fisher in the 1930s. It does not use inflation to determine exchange rates but rather nominal interest rates. In its purest form, risk-free aspects of capital must be allowed to flow between nations that comprise a particular currency pair. According to Fisher, the nominal rate almost equates the sum of the real rates together with inflation rates. The theory derives the use of interest rates rather than inflation to explain the reason why interest rates change over a period of time. High inflation leads to high interest rates. The assumption is that when investors from different countries require the same real return for the same risk level, the only reason why there should be a disparity in interest rates for a given level of risk is differences expected in inflation. It suggests that depreciation will occur to foreign currencies with relatively high-interest rates similar to currencies with high inflation rates (Madura & Fox, 2011). IFE is a theory of market expectations. Fisher provides that an unexpected increase in interest rates would attract foreign investors who may wish to invest in the home market to take advantage of high interest rates but where there is no flood of inward investment, The relationship between interest rates and inflation rates cannot always hold because exchange rates may be affected by factors other than interest rates (Madura & Fox, 2011).

IFE essentially states that arbitrage between financial markets should ensure that the interest differential between any two countries is an unbiased predictor of the future change in the spot exchange rate. The interest differential is not an accurate predictor; rather, the prediction errors tend to cancel out over time (Shapiro, 1992).

### **2.5.3. Interest Rate Parity**

Interest Rate Parity as a theory was first developed by J.M. Keynes in 1930. It is based on the law of one price such that identical securities quoted in a common market should have similar prices in all markets. It is defined as the state of equilibrium that exists when forces in the market make interest rates and exchange rates to adjust (Madura & Fox, 2011). This occurs when the forward rate is different from the spot rate at equilibrium level by an amount that is equal to the difference in interest between the two countries. The domestic interest rate is calculated by deducting expected domestic currency appreciation from the foreign interest rate. A higher domestic interest rate, when compared to the foreign interest rate, causes a positive expected appreciation of the foreign currency which will compensate for the lower foreign interest rate (Mishkin & Eakins, 2009).

This theory is important as it describes the situation whereby an investor decides on which country to invest in. IRP does not imply that all currencies must have the same interest rate, a currency experiencing high inflation rates and high interest rates can dilute the effects of other foreign currencies by devaluing (Madura & Fox, 2009).

### **2.5.4. Comparison of the Theories**

Madura and Fox, 2011 contend that although the three theories relate to the determination of exchange rates, they have different implications. While PPP refers to the spot rate of one currency with respect to another changing in reaction to the differential in inflation rates between two countries, IFE refers to the spot rate of one currency changing in accordance with the differential in interest rates between the two countries. IRP, on the other hand, refers to the forward rate of one currency in respect to another containing a discount that is determined by the differential interest rates between two countries.

## **2.6. Foreign Exchange Rates and Foreign Direct Investment**

A company that seeks to invest in another will always seek out a host country that has a local currency that will be expected to strengthen against their own. Madura and Fox (2011) argue that a firm will invest funds in a country whose local currency is currently weak in order to

earn from new operations which may regularly be converted back to the foreign firm's currency at a better exchange rate. Exchange rate movements affect FDI values because they tend to generally affect the expected amount of cash inflows received from their investments and the number of cash outflows required to pay to continue operating these investments. Currencies are appreciated and depreciated according to prevailing market conditions. Firms that have operations in other countries other than their mother countries must understand the forces that cause exchange rates to change over time, in order to gauge how currencies may be affected by these forces and in so doing be in a position to mitigate these losses. Theoretically, exchange rates affect FDI because the rate at which one currency is expressed in terms of another will determine how viable an investment will be. In determining exchange rates, the factors that influence how much of a currency will be exchanged for another will ultimately determine how much of FDI will be invested in a country. The two cannot be held in isolation as FDI is determined by how much of a currency is available for use. An investor will identify a country that will enable one to gain in expressing one's currency in the denomination of the host currency.

The theories that explain the determination of exchange rates will help to determine how these exchange rates affect FDI in a country. The cost of goods in one country as determined by the amount of money that a particular currency will enable an investor to seek a country that will provide the best exchange rate (Madura & Fox, 2011).

Madura and Fox (2011) assert that demand and supply of currencies are, price driven and at any given point in time, a currency should depict the price at which its demand is equal to the given currency in order to represent the equilibrium exchange rate. Exchange rates, therefore, affect FDI in that when a currency, expressed in terms of another loses its value relative to the currency of the foreign country, investors will be attracted to that host country because it will be cheaper to operate in that host country. The relationship that exists between exchange rates and FDI is that if the currency loses its value, FDI is expected to increase while if a currency gains value, FDI is expected to reduce (Madura & Fox, 2011).

Although, empirical studies suggest some linkage between the ERs and FDI inflows, the literature capturing this relationship has largely been scanty. However, Devereux and Engel (1999) studied the welfare impact of fixed and floating ERs in the presence of a stylized form of FDI. Their study was one of the pioneering attempts at exploring this relationship. Some experts capture the linkage between the exchange rate and FDI by arguing that stronger FDI

implications from exchange rate movements are due to relative wage variations that are unanticipated in the expected costs of project finance for FDI. Others also capture this linkage by arguing that imperfect capital market considerations lead to a rate of return on investment projects that depend on the capital market structure in varying regimes and/or countries. Hence, available literature on ERs and FDI relationship indicate they either fall into the production flexibility school or the risk-aversion arguments or the “exchange rate sheltering hypothesis. The production flexibility argument primarily assumes that FIs are risk-neutral and that generally diversify globally to increase the flexibility of production in response to shocks under conditions of free entry as dictates by the operative ER of an economy (Aizenman 1992; 1994).

The risk-aversion stance posits that in an imperfect world due to information asymmetry, sociological and macroeconomic factors and natural occurrences; producers in the effort to better adapt to trade cycles diversify globally across varying exchange rate regimes to secure returns on their investments and ensure sustainable supplies. Froot and Stein (1991) and Blonigen (1997) affirmed that incomplete information stimulates FDI flows due to relative wealth effects from exchange rate movements. However, Cushman (1985) offered a middle ground for the production flexibility and risk-aversion arguments by asserting that where firms have the option of serving foreign markets via exports or FDI, increased exchange rate volatility likely favors FDI as opposed to an export.

## **2.7. Empirical Literature Review**

Different studies have been conducted to establish the potential factors that would determine the inflow of FDI into a host country both in Africa and elsewhere in the developing worlds of Asia and South America. The factors which were identified as determinants of FDI are greatly varied from study to study and from country to country (UNCTAD, 2003).

Batra et al (2003) argue that; the determinants of foreign direct investment to Africa are different from the determinants to the other parts of the world. Asiedu (2004) agrees with this argument and states that; the lessons from East Asia and Latin America countries do not apply to African countries. Apart from this, several empirical studies have analyzed the relationship between FDI and exchange rate changes in terms of both the level and volatility. Furthermore, some have also included the effects of exchange rate expectations (Baek and Okawa, 2001). Based on this fact, the following section discusses Empirical literature conducted in the study area.

### **2.7.1. Empirical studies outside Ethiopia**

There are many studies that have been conducted so far on the effect of exchange rate on foreign direct investments across the world. The result of each study differs from each other and shows a different implication. So, this section discusses previous studies conducted on the effect of exchange rate on foreign direct investment. while the next section (2.6.2) discusses the study conducted in Ethiopia with regard to the study area.

One of the earliest studies conducted on the relationship between exchange rate and foreign direct investment was the work of Goldberg and Klein (1998), who conducted study to determine the relationships among trade, foreign direct investment and the real exchange rate between a set of South East Asia and Latin American countries including both USA and Japan. The objective of the study was to examine the effect of trade and the real effective exchange rate on foreign direct investment. The study, in general, concluded that; the host country currency depreciation was the main reason for increased return to the host countries through foreign direct investments. Specifically, the study suggests that; depreciation of the currencies of the South East Asian countries when compared to the Japanese yen are were responsible for increased foreign direct investment to South East Asian countries from Japan.

Following the study by Goldberg and Klein (1998), the numbers of studies were conducted to examine the relationship between foreign direct investment and exchange rate. For instance, Sadewa (2002) conducted a study on the effect of exchange rate on foreign direct investment in Japan. The objective of the study was to examine whether the depreciation of the host country currency attracts foreign direct investment or not. In doing so, the study was conducted based on an option pricing approach. The study was conducted using foreign direct investment remittance data which flows from Japan to the United States of America during the study period. The finding of the study indicates that; the FDI flows may decrease as the currency of the host country depreciates. Further, the study explains the negative relationships between the two variables were based on external factors such as technological effect. This means, if the foreign firms have a technological advantage in making an investment, the currency depreciation reduces Foreign Direct Investment flows from the foreign country. However, when foreign firms have a technological disadvantage over the host country, the level of foreign direct investment in the host country may increase.

The other study conducted by Udomkerdmongkol et al (2006) supports the finding of the Goldberg and Klein (1998), which states that; depreciation of host country currency may affect foreign direct investment positively. Udomkerdmongkol et al (2006) conducted a study on the effect of exchange rate on foreign direct investment to a sample of 16 emerging market countries using panel data for the period 1990-2002. In doing so, the study used three variables to capture separate exchange rate effects. Those are, the nominal bilateral exchange rate to the \$US was used to capture the value of the local currency. Secondly, Changes in the real effective exchange rate index (REER) was used as a proxy for expected changes in the exchange rate. And finally, the temporary component of bilateral exchange rates was used as a proxy for the volatility of the local currency. The finding of the study indicates that; ceteris paribus, there is a negative relationship between the expectation of local currency depreciation and foreign direct investment inflows. However, devaluation of host country currency against foreign currency attracts foreign direct investment inflows. On the other hand, the study found a negative relationship between foreign direct investment and volatility of exchange rate and this discourages foreign direct investment inflows to host country.

Among the number of studies conducted across the world, the study of Yaprakli (2006) is the classical study which shows how the exchange rate affects foreign direct investment. Yaprakli (2006) conducted a study on the economic determinants of foreign direct investment in Turkey. The objective of the study was to examine how foreign direct investment reacts to change in macro-economic variables in Host Country. The finding of the study indicates that; the exchange rate has an effect on FDI from income and cost perspectives. In this case, the following justification was given by the study to show how the exchange rate affects foreign direct investment. Initially, Depreciation of host country currency allows foreign investor whose production is export-oriented to increase the national input in terms of production along with exports and profits. And this is called the income effect. In such cases, depreciation of a host country currency in the foreign exchange markets positively affects FDI. However, the use of imported inputs in the production by an export-oriented investor and a high degree of dependence on imported inputs can cause the investor's exports and profits to decrease. This is known as the cost-effect, and in such cases, a depreciation of the domestic currency in the foreign exchange markets negatively affects FDI. The net effect of foreign exchange rates on FDI changes with respect to the magnitude of income and cost effects. If the income effect is greater than the cost effect, an increase in the exchange rate positively affects foreign direct investment.

However, the case is different if the cost effect is greater than the income effect. Which implies, the greater the cost-effect compared to income effect, increase in exchange rate negatively affects foreign direct investment. Finally, the finding of the study indicates that; the effect of exchange rate on foreign direct investment can be decided based on cost and income effect.

Osinubi and Amaghionyeodiwe (2009) conducted a study on the effect of exchange rate volatility on foreign direct investment inflows in Nigeria. The objective of the study was to examine if the volatility of the exchange rate affects foreign direct investment inflows in the short run as well as in the long run. The study was conducted using secondary time series data range from 1970 to 2004. For this purpose, the study was estimated through the econometric analysis of time series model by including the exchange rate and interest rate as control variables. The finding of the study suggests that; there is a positive relationship between inward Foreign Direct Investment and exchange rate level in Nigeria. Further, the findings of the study implied that; the depreciation of the naira against foreign currencies was the reason for increased the level of real inward foreign direct investment to Nigeria.

Ellahi (2011) conducted an empirical study to show the impact of exchange rate volatility on foreign direct investment for the Pakistan economy. The study was conducted through secondary time series data over the period of 1980 to 2010. The estimation technique used in the study was the autoregressive distributed lag (ARDL) to find the short run as well as the long run relationship among variables. The study was included the real gross domestic product (GDP), capital account balance, trade openness, real exchange rate and volatility of exchange rate as independent variables along with the introduction of a dummy variable for the structural adjustment program. While foreign direct investment was used as the dependent variable. The finding of the study suggests that; exchange rate level and foreign direct investment were positively related during the study period in Pakistan. Furthermore, since the study was conducted to examine the short run as well as the long-run relationship of the variables. The result of the study shows that; the effect of exchange rate on foreign direct investment was positive in the long run but it negatively affected foreign direct investment in the short run.

Otieno (2012) conducted a study to determine the impact of exchange rate fluctuations on foreign direct investment inflows in Kenya. The study was conducted by using a thirty year period data (1981 to 2010). The objective of the study was to examine the impact of exchange

rate fluctuation on the level of foreign direct investment inflows to Kenya along with control variable inflation rate and economic growth rate. The finding of the study suggests that; there is no significant relationship between the exchange rate and foreign direct investment. Which means; the impact of exchange rate fluctuation on foreign direct investment is insignificant. However, the relationship between the two variables was found positive, whereby, an increase in the exchange rate fluctuations of the local currencies leads to an increase in FDI inflows.

Parajuli (2012) conducted a study to examine the relationship between the exchange rate, foreign direct investment and trade in the developing economy of Mexico from the Organization for Economic Corporation and Development countries; and how exchange rates and the volatility of exchange rates impact the flow of FDI. The objective of the study was to examine the reaction of foreign direct investors from members of OECD countries to Mexico with the level of the exchange rate. The study was conducted using data from 1994 to 2008. The finding of the study indicates that; there was a positive correlation between the expectations of exchange rates and foreign direct investment. Furthermore, the study suggests that; the coefficient on the variable exchange rate indicated appreciation in the home currencies encourages outward FDI flows from members of OECD countries to Mexico.

Renani and Mirfatah (2012) conducted a study to examine the relationship between the exchange rate and foreign direct investment. The main goal of the study was evaluating the determinants of inward foreign direct investment and particularly volatility of exchange rate in Iran by using the Johansen and Juselius's co-integration system approach. The study was conducted by using secondary time series data range from the period of 1980Q2-2006Q3. In order to achieve the objective of the study, the study was conducted by including economic growth, world crude oil prices and Trade openness as a control variable for the study. The finding of the study reveals that; gross domestic product, trade openness and exchange rate have a positive relationship with foreign direct investment. But, world crude oil prices and the volatility of the exchange rate were found to have a negative relationship with foreign direct investment.

Muema (2013) conducted a study on the determinants of foreign direct investment in Kenya. The aim of the study was to identify the most drivers of foreign direct investment in Kenya. In doing so, the study was conducted by including so many independent variables that determine foreign direct investment. And, one of the variables was the level of host country currency against foreign currencies (exchange rate). The finding of the study reveals that; there was a strong positive correlation between foreign direct investment and the change in exchange rate

level in Kenya, which indicates that, higher foreign direct investment inflows were associated with the weakening of Kenya shilling. The conclusion of the study further explains that; the key factor that determined changes in foreign direct investment in Kenya was the exchange rate of the Kenyan shillings by ( KES) to the other currencies proxied by the rate of change to the USD.

GT Kabura (2014) conducted a study to examine the linkage between foreign direct investment inflows and the level of the exchange rate in Kenya. The study was conducted for a ten years period from 2004-2013 using secondary data on FDI remittances as well as the spot rate for exchange rate over that period with data collected quarterly. Inflation and GDP were used as control variables. A trend analysis between the FDI & Exchange Rates of the study revealed that, a relationship that one was determined by the other. Correlation analysis of the two variables showed a strong positive association. Meaning that; an increase in one variable was likely to result in an increase in the other variable. The regression analysis revealed a strong relationship between FDI, KES/USD exchange rate, GDP per capita and the inflation rates.

Ahmed (2015) conducted a study to provide evidence on the relationship between real exchange rate and foreign direct investment inflows in Turkey. The study was conducted to investigate the effect of exchange rate on foreign direct investment with quarterly data covering the period 1989Q1-2011Q1 for the Turkish economy was used. In line with the target variable real exchange rate; the study was carried out by including control variables such as trade openness and inflation rate. For this purpose, the bound testing approach and ARDL estimation techniques were used to examine the short and long run relationship among the variables. The finding of the study indicates that; the real exchange rate affects foreign direct investment positively in the long run as well as in the short run. Furthermore, the study suggests that, in addition to the real exchange rate, trade openness and inflation rate were found positively affects foreign direct investment.

Martins (2015) conducted a study to examine empirically the impact of the real effective exchange rate volatility on Brazilian foreign direct investment inflows. The study was conducted by using annual data ranges from 1976 - 2013. To achieve the objective of the study, the study was carried out by including 6 more determinants of foreign direct investment inflows. Those are (GDP growth, population growth, trade openness, inflation, information infrastructure, and financial development) as a control variable. The ARDL model was used

for estimation purpose in order to estimate both short and long-term effects. The Empirical finding of the study revealed that; the volatility of the real exchange rate affects significantly and negatively foreign direct investment inflows in both short and long-term.

Khandare (2016) conducted a study on the effect of exchange rate on foreign direct investment in the case of India and China. The study was carried out for analyzing the impact of the exchange rate level on foreign direct investment inflows. The study was used correlation and regression analysis to examine the relationship between the variables. The secondary time series data was utilized during the study period from 1991 to 2014. The finding of the study was shows mixed results on the relationship between two variables.

It is found that; the exchange rate is positively correlated with foreign direct investment in the case of India, while the correlation result shows a negative relationship between foreign direct investment and exchange rate in the case of China.

WK Njuguna (2016) conducted a study to determine the relationship between exchange rates and foreign direct investment in Kenya. The independent variables used in the study was the exchange rates (KES/USD), inflation as determined by the consumer price index and economic growth as computed by gross domestic product; While, Foreign direct investment was used as the dependent variable for the study. The study was conducted over a period of ten years from January 2006 to December 2015 using secondary data on FDI remittances as well as the spot rate for the exchange rate over that period with data collected monthly. In this study, Inflation and economic growth were used as control variables. The finding of the study concluded that; exchange rates, inflation, and economic growth do influence the levels of foreign direct investment in Kenya. The implication given for the relationship between the exchange rate and foreign direct investment was in that, a devaluation of currency can attract foreign direct investment in Kenya. It was noted that; an increase in exchange rates resulted in an increase in FDI.

Ali et al (2017) conducted a study on the effect of exchange rate on foreign direct investment inflows evidence from Somalia. The study was done by applying multiple regression models under OLS method. in addition to the exchange rate, inflation, domestic investment and lack of governance were used as control variables. The result of the study shows that; there is a negative and significant relationship found between the exchange rate and foreign direct investment in Somalia. However, the finding of the study suggests a positive and significant relationship between inflation and foreign direct investment. Furthermore, domestic

investment found positively affects FDI, and a negative but insignificant relationship is observed between the lack of government and foreign direct investment in Somalia.

Naseem (2017) conducted a study to investigate the relationship of Foreign Direct Investment (FDI) with the exchange rate in Pakistan. The study was conducted through time series data over the study period of 11 years (2003-2013). In line with the target variable exchange rate; the study included economic growth, export, imports, and inflation as a control variable for the study. The method applied under this study for estimation technique was multiple regression, descriptive statistics, and correlation analysis. The finding of the study reveals that; the exchange rate and foreign direct investment were positively correlated in Pakistan during the study period. Specifically, the study implies that; foreign direct investment is most probably associated with Rupee depreciation in Pakistan.

Mohamed et al (2017) conducted a study to examine the relationship between real exchange rate and foreign direct investment inflows in South Africa. The study was conducted by applying the estimation technique of autoregressive distributed lag (ARDL) with bounds testing method to estimate the short run as well as the long-run relationship among variables. The secondary time series data was used over the study period of 1987-2016. In this study, in addition to the real exchange rate, they included domestic market size and trade openness as a control variable. The result of the bound test reveals long-run co-integration relationships among variables, implying real exchange rate, and domestic market size stimulate the foreign direct investment in the long run. The finding of the study indicates that; exchange rate affects foreign direct investment negatively. Furthermore, the study implies the exchange rate instability is likely to be substantially harmful to a positive effect of FDI and should be avoided in South Africa.

Muhammad and Hassan (2017) conducted a study to investigate the impact of exchange rate on foreign direct investment inflows in Pakistan. The study was conducted by using the estimation technique of autoregressive distributed lag model (ARDL) with bound test method to examine the long run relationship of variables. Along with the exchange rate, the target variable, the cardinal variable such as external debts and market size were included in the study. The finding of the study reveals that; the Exchange rate is found positive and highly significant with foreign direct investment inflows in the short run as well as in long-run. Furthermore, it is observed that; the variable Market size was positively correlated with foreign direct investment in the short run as well as in the long run. Additionally, External

debts were surprisingly shown a positive relationship with foreign direct investment in long-run but negatively correlated in short-run.

Usman et al (2017) conducted a study to examine the effect of exchange rate volatility on foreign direct investment in Pakistan. The study was done by using the estimation technique of ARDL with bound test method to identify the long run relationship among variables.

The purpose of the study was to examine the impact of the exchange rate, exchange rate volatility, GDP, trade openness and current account balance on foreign direct investment in Pakistan for the period of 1981 to 2015. The finding of the study shows that; exchange rate volatility and current account balance were affected by foreign direct investment negatively in short as well as in the long run. However, the exchange rate found positively affects foreign direct investment over the study period in Pakistan.

Lindström and Sten (2018) conducted a study on the effect of exchange rate on foreign direct investment in South Korea and China. The study was conducted through the econometric model where the dependent variable is the annual FDI inflow and the independent variable of interest was the real effective exchange rate.

In doing so, the data used to analyze the relationship between two variables was range from 1986 and 2015. The result of the study implies that; foreign direct investment and exchange rate have a negative relationship. That means, depreciation of the local currency against foreign currency leads to a decrease of FDI inflows.

### **2.7.2. Empirical studies in Ethiopia**

In the context of Ethiopia, there appear to be a number of studies conducted with regard to foreign direct investment inflows. For instance, the study of Haile and Assefa (2006) was conducted to show the nature and determinants of foreign direct investment inflows in Ethiopia and mostly referenced by many researchers. The study was conducted over the period 1974-2001. Furthermore, an extensive account of the theoretical explanation of foreign direct investment as well as reviewing the policy regimes was the objective of the study. Additionally, the study was used empirical analysis to establish the determining factors of foreign direct investment in Ethiopia. The findings of the study show that; the growth rate of real GDP, export orientation, and liberalization; among others positively affected foreign direct investment in Ethiopia. However, the macroeconomic instability and poor infrastructure of the country were found as negatively affects foreign direct investment in Ethiopia.

In addition, Tadele (2013) conducted a study on determinants and impacts of foreign direct investment on the Ethiopian economy through three basic channels; which include, real Gross Domestic Product Per capita (GDP), Human Capital Development (HCD), and Domestic Investment (DI). The study was conducted over a period of 1992-2012 and used an estimation technique of Autoregressive Distributed Lag Model (ARDLM) with a Bound Test method to identify the long run relationship among variables. the study includes the determinants of foreign direct investment like the lagged FDI, Domestic Investment, trade liberalization, economic growth, infrastructure (telecom and road networks), political stability, macroeconomic instability (inflation rate and exchange rate), the human capital and market size. The finding of the study indicates that; that macro-economic instability, human capital, and market size affects foreign direct investment negatively in Ethiopia.

Recently, a number of studies were conducted to determine the possible factors that drive foreign direct investment in Ethiopia. Among them, Aga (2016) conducted a study on the determinants of foreign direct investment in Ethiopia. The main objective of the study was to examine how the Foreign Direct Investment inflows in Ethiopia is determined by, the financial sector development, domestic investment, lending interest rate, exchange rate, human capital development, trade openness, and domestic market potential in Ethiopia. In doing so, the study used an estimation technique of vector error correction model (VECM) with co-integration based on secondary data from 1975-2014. The finding of the study shows that; foreign direct investment in Ethiopia is highly determined by domestic investment, lending interest rate, exchange rate depreciation, domestic market potential, and trade openness.

Berhane (2016) conducted a study on analysis on Foreign Direct Investment (FDI) in Ethiopia using Co-integrated VAR approach over the period of 1974/75 to 2013/14. Particularly, the study was conducted to examine the trend of FDI inflow on regional, sectoral and by country of origin bases. In order to point out the main factors that can highly affect the inflow of FDI into Ethiopia. The determinant of FDI such as infrastructure development, the domestic market size and growth potential, macroeconomic stability, human capital development, openness, and external debt was included in the study. The finding of the study indicates that; in the long run, an explanatory variable such as infrastructure development, the domestic market size, Human Capital, openness, and external debt are found positively related and statistically significant. On the other hand, the inflation rate is negatively related and statistically significant. While in the short run, Gross Fixed Capital Formation and inflation

become negatively related and they are statistically significant. However, the Gross Domestic Product is positively related to foreign direct investment and statistically significant.

Demissie (2016) conducted a study on the determinants of foreign direct investment inflows in Ethiopia. The study was carried out to establish the possible factors that determine the inflow of Foreign Direct Investment into Ethiopia. The study was conducted by using secondary time series data sample from 1992 to 2014 with the estimation technique of the Ordinary Least Squares (OLS) and autoregressive distributed lag model. The ARDL model, however, failed to support any long-term relationships between FDI and each explanatory variable of the study.

The results of the short-run dynamic model of the study were shows that; financial development and market size significantly and negatively affect the inflow of foreign direct investment in Ethiopia. However, Trade openness shows a positive relationship with foreign direct investment and significant at 10% significant level. On the other hand, the study found Both Inflation and external debt was affecting foreign direct investment negatively but insignificantly, and infrastructure development positively affects but insignificant FDI.

Fantaye (2016) conducted a study on Macroeconomic determinants of Foreign Direct Investment (FDI) in Ethiopia. The study was conducted based on a time series data over the period 1982 to 2014G.C. The study was conducted to examine the trend of FDI inflows to the country. More specifically, the study discusses why Ethiopia is conducive for Foreign Direct Investment and the area of opportunity. In doing so, the study used a number of macro-economic variables in Ethiopia such as infrastructure development, potential economic growth, macroeconomic stability, human capital development, and Trade openness. The Findings of the study indicates that; in the long run, the variables such as infrastructure development, potential economic growth, and Trade openness were found positively related to foreign direct investment in Ethiopia and statistically significant. However, Inflation Rate and Human Capital (illiteracy level) are negatively related and statistically significant in determining foreign direct investment in Ethiopia.

Sommie (2016) conducted a study on the determinants of foreign direct investment in Ethiopia and the study was conducted by using the estimation technique of multivariate ordinary least squares regression. The study was conducted through time series data covering over the period of 1974 to 2015. The variables used in the study were; market size, export orientation, inflation rate, exchange rate, infrastructure, and human capital. The finding of the study shows that; market size and infrastructure in the form of gross fixed capital formation has positive

impacts while macroeconomic instability (both inflation and exchange rates), export orientation and illiteracy have negative impacts on FDI inflow to Ethiopia.

Temeselew (2016) conducted a study on analysis of Foreign Direct Investment in Ethiopia by using a co-Integrated VAR Approach with the annual data observation ranges from 1980-2014. In the study, different factors that determine the inflow of FDI to the country were analyzed. The study used secondary time series data form1980-2014. The result of the study indicates that; FDI in Ethiopia is significantly and positively affected by human capital, exchange rate, domestic investment, and GDP. In addition, it is shown that; exports have a positive and significant impact on foreign direct investment in Ethiopia.

Shebu (2017) conducted a study to determine drivers of Foreign Direct Investment flow in Ethiopia. And the study applied multivariate ordinary least squares regression by using time series data covering over the period 1974 to 2015. In order to point out the main factors that can highly affect the inflow of FDI in Ethiopia and to know how much these factors affect FDI leading to an oscillating trend, the study took the determinant of FDI in Ethiopia such as infrastructure development, the domestic market size and growth potential, macroeconomic stability, human capital development, openness, and external debt. The findings of the study indicate that; macroeconomic stability measured by the inflation rate and openness have significant and negatively related to FDI. Second, the exchange rate and school enrollment rate proxy of macroeconomic stability and human capital development respectively are found positively related and statistically significant to the inflow of FDI. Third, gross fixed capital formation and real GDP growth rate proxy of infrastructures and market size respectively have statistically significant and positively related to FDI. Lastly, foreign debt has a negative and insignificant effect on FDI.

## **2.8.Conclusion and Knowledge Gap**

From the empirical analysis of literature reviewed by a researcher, it is possible to conclude that, the results of conducted studies across the world on the effect of exchange rate on foreign direct investment inflows are inconsistent. This implies that; the effect of variables have one on another is different from one country to another country as well as from one study to another study. For example, the studies conducted by Sadewa (2015), Khandare (2016), Lindstrom and sten (2018) and Ali et al (2017) shows that, exchange rate and foreign direct investment were negatively correlated (Study which is conducted on Japan, India and China, South Korea and China, and Somalia). While on the other hand, there are a number of studies

which shows the relationship between the exchange rate and foreign direct investment inflows as a positive. For example, Ellahi (2011), Mwenda (2012), Muema (2013), Parajuli (2012) and Kiyota and Urata (2004) are a number of studies reported a positive relationship between two variables. Specifically, in the context of Ethiopia, the numbers of studies were conducted to examine determinants of foreign direct investment inflows. For example, Haile and Assefa (2006), Tadele (2013), shebu (2017), Demissie (2016), Berhane (2016), Temeselew (2016), Fantaye (2016) and Sommie (2016). However, in conducting the study, the researchers were used different independent variables to determine factors that drive foreign direct investment inflow to Ethiopia. But, Except Tadele (2013), Temeselew (2016), Sommie (2016) and Aga (2016) others researcher were unable to include the exchange rate as a part of single independent variables. While form a theoretical point of view; the exchange rate is assumed as the main determinant of foreign direct investment inflow. In addition to this, except Tadele (2013) and Demissie (2016), the data used to examine the determinants of foreign direct investment inflow was lack reliability. That means, Aga (2016), shebu (2017), Temeselew (2016), Sommie (2016) and Haile and Assefa (2006) used a data which begins from a period of 1974. This is completely wrong because 1974 was a representation of a command economy which was ignoring private investment. So, there is no any activity related to foreign direct investment pre -1992. After the coming of EPDRF to the power in 1992, privatization was introduced. Therefore, the activity of foreign direct investment in Ethiopia should be reviewed post -1992. So, based on this fact, the result of previously conducted studies implies that; the output of the studies was biased. Therefore, this study is conducted to examine the effect of exchange rate on foreign direct investment inflows in the Ethiopian context by using reliable data and taking the experience of others country result as a benchmark.

**Table 2.1** Summary of previous researches focusing on the relationship between foreign direct investment and exchange rate in line with the control variables used in the study.

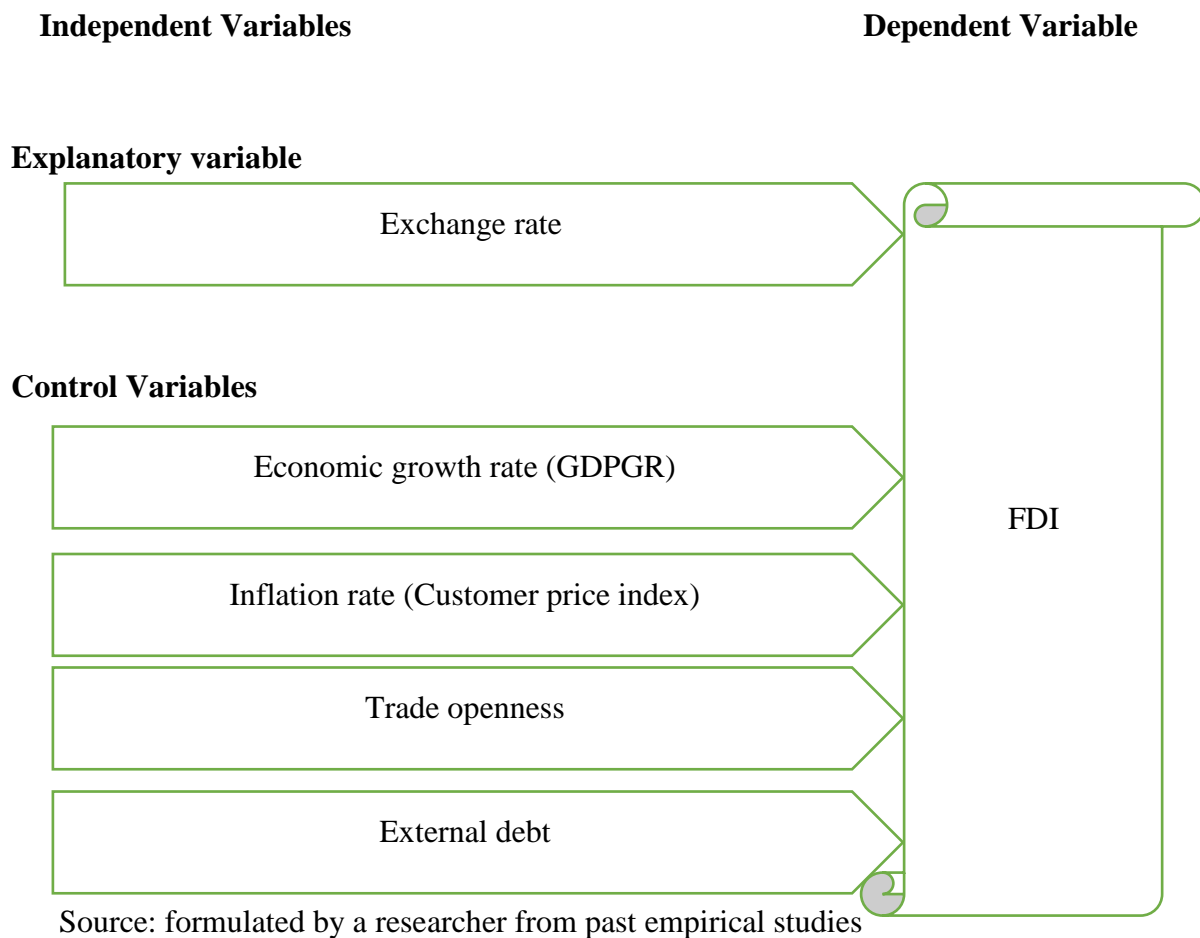
So No	Authors/Researchers	Explanatory Variable	Control Variables
1	WK Njuguna (2016)	Exchange rate	GDP growth rate and Inflation rate
2	GT Kabura (2014)	Exchange rate	Inflation rate and GDP per capita
3	Ahmed (2015)	Exchange rate	Trade Openness and Inflation rate
4	Ellahi (2011)	Exchange rate	GDP growth rate, Capital account balance and Trade Openness
5	Martins (2015)	Exchange rate	GDP, Population, TOP, Inflation and Information infrastructure
6	Usman et al (2017)	Exchange rate	GDP, TOP, and Current account balance
7	Muhammad and Hassan(2017)	Exchange rate	External debt and Market size
8	Naseem (2017)	Exchange rate	GDP, Imports, Exports and Inflation
9	Renani and Mirfatah(2012)	Exchange rate	GDP, TOP, and World crude oil prices
10	Ali et al (2017)	Exchange rate	Inflation, Domestic investment and Lack of Governance

Source: Compiled by Researcher from past empirical studies

## 2.9. Conceptual Framework

As a result of the empirical review and theoretical assumptions, this study has developed the following schematic representation of the conceptual framework. In doing so, the data for determining the most control variables that should have to be included in the study were chosen according to the characteristics that they create more impact in the economy and the current economic performance of the country.

Figure 2.1: a conceptual framework of the study



## **CHAPTER THREE**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **INTRODUCTION**

This chapter provides the reader with an overview of the methodological considerations and assumptions underlying the research process. It describes the methods and procedures that the researcher used in order to achieve the research objectives. The chapter covers the research approach used in the study, research design, target population, sample size, source of data and data collection and finally how the data is analyzed.

#### **3.1. Research Approach**

In this study, the researcher used quantitative research approach. The use of this method is helpful to ensure that; the data collected is effectively interpreted and analyzed using the statistical analysis and descriptive statements. According to Creswell (2017), there are three types of research approach which are familiar to business and social science research; those are quantitative, qualitative and mixed methods approach. The rational reason behind for using of quantitative research approach includes to develop knowledge of cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation, and the test of theories, employee strategies of inquiry such as experiments and surveys (Creswell, 2017). So in order to examine the effect of exchange rate on foreign direct investment, the researcher used the quantitative research approach.

#### **3.2. Research Design**

This study used an explanatory research design to examine the effect of exchange rate on foreign direct investment. Explanatory research seeks to explain the phenomena being studied (Kothari, 2004). So, in this study, the researcher used explanatory research design to determine the correlation between the exchange rate and foreign direct investment inflows in the Ethiopian context.

#### **3.3. Population**

The target population for this study contains all the sectors of the Ethiopian economy for data relating to foreign direct investment and exchange rates.

### 3.4. Sampling frame and sample size

The sampling frame is based on time series annual data of the Dependent (Foreign Direct Investment Remittance) and independent (Exchange rate, Economic Growth rate, inflation rate, Trade openness, and External debt) variables between 1992 and 2017.

The sample period includes 26 years of annual observation of all variables. This period is sampled based on available data for exchange rates and Foreign Direct Investment. Before 1992, there was no activity related to foreign direct investment because of economic policy that was in place; additionally, the exchange rate before 1992 was fixed (pegged) to USD.

### 3.5. Source of Data and Data Collection

This study used secondary data from different websites, publications, and annual reports. In order to verify the reliability of the data, the data's are collected from a different source of information like IMF (regional Economic Outlook) and the World Bank Country Data websites, National bank of Ethiopia, Ethiopian investment commission and Ethiopian ministry of finance and economic development respectively.

### 3.6. Model specification and Control Variables

In order to examine the effect of exchange rate on FDI inflows in Ethiopia, there is an estimated equation where FDI inflow in Ethiopia is reflected as a function of the following variables (including control variables):

$$FDI=f(ER, GDPGR, INF, TOP, ED)..... (1)$$

FDI = the net FDI inflows as % of GDP.

ER = Exchange rate level (USD/ETB).

GDPGR = Economic Growth rate.

INF =Inflation rate.

TOP =Trade openness (ratio of import plus export to GDP).

ED = External debt (as a percentage of GDP).

### 3.7. Model equation of the study

The above equation number (1) can be rewritten in the following econometric model with its functional forms.

$$LFDI_t = \beta_0 + \beta_1 ER_t + \beta_2 GDPGR_t + \beta_3 INF_t + \beta_4 LTOP_t + \beta_5 LED_t + c \dots\dots\dots (2)$$

Whereas;  $\beta_0$  is the intercept and  $\beta_i$  (i=1, 2, 3, 4, 5,) represents the coefficient for each of the independent variables.

LFDI = is the foreign direct investment inflows into Ethiopia, and measured as a percentage of economic growth (%GDP) and natural logarithm is applied for this variable.

ER = is the level of the exchange rate against the USD dollar (USD/ETB).

GDPGR= is the economic growth rate.

INF = is the annual inflation rate (annual percentage change of the average customer price index)

LTOP = is trade Openness which is measured by; import plus export as a percentage of economic growth; (% of GDP) which means (Import + Export/GDP) and also, natural logarithm is used for trade openness.

LED = represents the external debt; which is the overall external debt of the country as a percentage of economic growth (% of GDP). Also, the natural log is used for this variable.

C = is the constant term of the regression.

### 3.8. Definition of Variables

#### 3.8.1. Dependent Variable

**Foreign Direct Investment:** The World Bank World Development Indicators (2012) defined Foreign Direct Investment as the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. In line with the approach used in the FDI literature, the dependent variable used in this study FDI is measured as the net foreign direct investment inflows. So it is measured as a percentage of GDP (%GDP). The justification behind conducting a study on foreign direct investment is related to willingness that; Ethiopian government is showing to attract foreign direct investment and its benefit to economic growth.

#### 3.8.2. Explanatory Variable

**Exchange rate:** Countries use different exchange rate systems as per their domestic and international financial interest. As a result, they can have a greater share in international exports and in FDI inflows as it is evidenced in the case of China (Akram et al., 2011).

Using the exchange rate as a tool in the financial environment is not a new game. Normally, economies follow a fixed exchange rate system or floating exchange rate system or floating with bounds. Countries with weak currencies are able to attract more FDI inflows as more purchasing power is made usable in the host economy. Official exchange rate (LCU per US\$, period average) has been used as a proxy for the exchange rate (ER) in many studies. For example, Ellani (2011), Naseem (2017) and Ahmed (2015); by following them, this study also uses the same measurement. The justification behind using the exchange rate as an explanatory variable of the study depends on different implications, firstly, there is no study conducted to examine the relationship between foreign direct investment and exchange rate in Ethiopia. Secondly, the Ethiopian government is making currency devaluation from time to time in orders to attract foreign direct investment. So, it is better to conduct a study in order to examine to what extent the exchange rate affects foreign direct investment in Ethiopia. Based on reviewed literature and theoretical assumptions the expected sign for this variable is positive.

*H1: Exchange rate has a positive and significant effect on Foreign Direct Investment Inflows.*

### **3.8.3. Control Variables**

**Economic Growth:** economic growth is one of many determinants of FDI. The wealth and development of a country can be used as a proxy to measure the size of the domestic market. It is believed to be one of the determinants that have been used in empirical studies to explicate the inflow of FDI to a host country. Because, if the host countries have large economic growth it will have investment opportunities that will in turn to generate high profit for the foreign firms. The real reason behind including economic growth rate as a part of the control variable is that; to know, at what extent Ethiopian economic growth affects foreign direct investment inflows. Additionally, a number of theories and empirical evidence show that; straight forward positive effect of economic growth rate on foreign direct investment; but a number of studies conducted in Ethiopia show the reverse result to the expected one. So by considering this, this study tries to examine the relationship exists between economic growth rate and foreign direct investment in Ethiopia. Many studies have used real Gross Domestic Product (GDP) growth rate as an indicator of the “growth” of an economy. This study follows them and uses this variable as an indicator of economic growth, and expects to have a positive effect on inward FDI.

## ***H2: Economic Growth has a positive and significant effect on Foreign Direct Investment Inflows***

**Inflation:** As it is defined in world development indicator (World Bank, 2014), the calculation of inflation is measured by the consumer price index. Which indicates, the annual percentage change of the average consumer cost in acquiring a basket of goods and services over the interval of time. The inflation rate is one of the variables which measures the given countries macro-economic stability. According to Solomon (2008) cited on (Demissie, 2016), through its effect on the cost of inputs and the price of outputs, inflation reduces the real return on investment and firms' competitiveness. Hence, countries that pursue policies that reduce inflation rate have a better chance of attracting FDI. The low and predictable inflation rate is central for the long-term investment of both domestic and foreign companies. Therefore, higher and unpredictable inflation will decrease the inflow of FDI. So, by considering this, this study includes the inflation rate as a second control variable for the study. In doing so, it is better to examine the effect of Ethiopian inflation rate on foreign direct investment inflows. In line with many empirical pieces of evidence and theories; this study also expects High inflation rates to have a negative impact on FDI.

## ***H3: Inflation has a Negative and significant effect on Foreign Direct Investment Inflows.***

**Trade Openness:** Trade openness, meaning the degree of liberalization of the trade regime of the host country, is regarded as a very important factor that promotes FDI. Open economies mean greater market opportunities from the perspective of financial development. And additionally, it shows the ability of an economy to obtain funds from other economies, and willingness to invest its surplus fund to other countries. Trade openness is considered to be a significant FDI determinant in many kinds of literature. In line with many empirical pieces of evidence and theories; this study also expects trade openness to promote FDI and it is measured as the ratio of import + export to GDP. Trade openness expected to have a positive effect on FDI.

## ***H4: Trade openness has a positive and significant effect on Foreign Direct Investment Inflows.***

**External debt:** It shows the external imbalances. Higher debt burden creates constraints not only in terms of new private lending but also in terms of FDI flows (Nunnenkamp, 1991). In 2017, the amount of external debt of Ethiopia was 33% of total GDP as evidenced from (IMF Report, 2018), which is a high amount of debt; so it is better to examine the effect of external

debt on foreign direct investment. Hence based on established theories and empirical evidence it is expected to discourage FDI and the coefficient on the external debt could be negative.

***H5: External Debt has a negative and significant effect on Foreign Direct Investment Inflows.***

Regarding to the influence each of the variables may have on FDI inflows and based on the majority of the results given by the reviewed literature and researcher intuition (please see below Table 3.1); their coefficients are expected to have the following signs: in addition to this, the Natural logarithm was applied for FDI, TOP and ED to make the interpretation useful.

**Table 3. 1: Summary of the Expected sign of Variables used in regression**

Variables	Abbreviation	Descriptions	Expected signs
Foreign Direct Investment	LFDI	Inward foreign direct investment remittances as percentage of GDP	
Exchange rate	ER	USD/ETB	+
Economic growth	GDPGR	Real GDP growth rate	+
Trade openness	LTOP	Ratio of import + export to GDP	+
Inflation rate	INF	Change in Average Annual rate	-
External Debt	LED	External debt as a percentage of GDP	-

*Source: Compiled by the researcher based on earlier studies*

### 3.9. Discussion of Model Used

In this study, the researcher used Autoregressive Distributed Lag (ARDL), Model. The approach was introduced by Pesaran, Shin, and Smith (2001) with an objective to examine the long and short-run relationships among the variables of interest.

The reason behind using the autoregressive distributed lag model in this study is in that; all series (variables) are stationary at a different level; which means, some of them are stationary at level (LFDI, GDPGR, INF) while the remaining variables are stationary at first difference (LTOP, LED, ER). So, when series are integrated at different levels, it is better to use the ARDL model (Brooks, 2008). Additionally, the ARDL cointegration method is better than the traditional cointegration techniques suggested by Johansen (1988) and Johansen and Juselius (1990) for the following reasons. Initially, ARDL is easily applicable; it means, all the variables under the study are not required to be integrated at the same order. It uses the variables regardless of whether they are at purely (0), or purely (1) or fractionally integrated (i.e., a mixture of both); secondly, It avoids too many specifications, like the number of endogenous and exogenous variables to be included and shows an optimal number of lags to be applied in the study; In addition to this, it enables variables to show different optimal lags within a given study (Bhasin & Gupta, 2017). Thirdly, it estimates all together parameters of both short and long-run estimates along with variance-covariance matrix. Subsequently, it provides reliable and consistent results, which alternate cointegration methods cannot produce. And finally, it is more efficient in case of small or infinite sample size (Arize, 2017).

General to a specific representation of autoregressive distributed lag (ARDL) model is written in the following manner.

$$Y_t = \mu_0 + \sum_{i=1}^p \alpha_i Y_{t-i} + \sum_{j=1}^q \beta_j X_{t-j} + \epsilon_t \dots \dots \dots (3)$$

Whereas  $Y_t$  is a vector,  $\mu_0$  is the intercept and variables in  $X_t$  are allowed to be purely I(0) or I(1) or fractionally cointegrated;  $\beta$  and  $\alpha$  are coefficients;  $j=1, \dots, k$  is a number of independent variables.  $P$  is the lag length of dependent variable and  $q$  is the optimal lag for independent variables. While the term  $\epsilon_t$  represents a vector of error terms

After the general ARDL model is specified, the next step is to check if there any long-run relationships among variables.

The long-run relationships of variables are tested through the bounds testing approach developed by Peseran et al. (2001). The hypothesis of the bound test co-integration is stated as follows.

$H_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ , No long run relationship among variables

$H_1 = \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0$ , there is a long run relationship among variables

To accept or reject the null hypothesis of the bound test co-integration; two asymptotic critical value bounds provide a test for co-integration. when the independent variables are I(0) or I(1) a lower value assuming the regressors are I(0) and an upper value assuming purely I(1) regressors. If the F-statistic is above the upper critical value, the null hypothesis of long-run relationship can be rejected irrespective of the orders of integration for the time series and the converse is also true.

The following ARDL model is estimated in order to test for co-integration among the variables.

$$\begin{aligned} \Delta LFDIt = & \beta_0 + \beta_{11} LFDIt - 1 + \beta_{12} LFDIt - 2 + \beta_{21} ERt - 1 + \beta_{22} ERt - 2 + \\ & \beta_{31} GDPGRt - 1 + \beta_{32} GDPGRt - 2 + \beta_{41} INFt - 1 + \beta_{42} INFt - 2 + \beta_{51} LTOPt - \\ & 1 + \beta_{52} LTOPt - 2 + \beta_{61} LEDt - 1 + \beta_{62} LEDt - 2 \sum_a^h \lambda_2 \Delta ERt - a + \\ & \sum_b^h \lambda_3 \Delta GDPGRt - b + \sum_c^h \lambda_4 \Delta INFt - c + \sum_d^h \lambda_5 \Delta LTOPt - d + \sum_e^h \lambda_6 \Delta LEDt - e + \\ & \varepsilon t \dots \dots \dots (4) \end{aligned}$$

Whereas

- $\Delta$  = is the back shift operator
- $\beta_0$  = denotes the intercept term
- $\beta = (i = 1 \dots 6)$  represent the long-run coefficients of variables  
( $LFDI_{t-1}$ ,  $ER_{t-1}$ ,  $GDP_{t-1}$ ,  $INF_{t-1}$ ,  $LTOP_{t-1}$ ,  $LED_{t-1}$ ) represent one period lagged variables
- $\lambda = (i = 1 \dots 6)$  denote the short-run coefficients of variables at lag orders
- $h$  = denotes the lag length that obtained using Akaike information criterion (AIC)
- $\varepsilon t$  = represents the white noise error term.

In the bounds testing approach, the existence of a long-run relationship among variables is confirmed by comparing the F-statistics. In this case, the model should have to be modified to error correction model; in which, to identify the short run relationship of the variables. The error correction model formulated for this study takes the following form.

$$\Delta LFDIt = \beta_0 + \beta_1 \sum_a^h i (LFDIt - 1) + \beta_2 \sum_b^h i (ERt - 1) + \beta_3 \sum_c^h i (GDPGRt - 1) + \beta_4 \sum_d^h i (INFt - 1) + \beta_5 \sum_e^h i (LTOPt - 1) + \beta_6 \sum_f^h i (LEDt - 1) + \mu ECM (-1) \varepsilon t \dots \dots \dots (5)$$

Whereas

$ECM (-1)$  = error correction term lagged by one period.

$\varepsilon t$  = vector of white noise error terms.

$h$  = the optimal lag length of each variable in the autoregressive process.

$\mu$  = error correction parameter that measures the speed of adjustment towards the long-run equilibrium.

In order to see if the autoregressive distributed lag (ARDL) makes the model viable, the method provides the following diagnostic tests, where in case one of them fails, then the entire model is not feasible.

The diagnostic tests are composed by; Serial correlation test (it allows to see if there is autocorrelation between the variables by using the lag range multiplier test of residual serial correlation), Ramseys Reset test (uses the square of the fitted values in order to see if the functional form is practical), Normality test (based on a test of skewness , kurtosis and Bera-Jarque of residuals) and Heteroscedasticity test (based on the regression of squared residuals on squared fitted values). Additionally, with the intention of checking for the steadiness of the coefficients in the model, the cumulative sum of recursive residuals (CUSUM) and cumulative sum of recursive residuals squares (CUSUMQ) tests are applied for confirmation of inexistent structural breaks (unexpected movements in a time series).

## CHAPTER FOUR

### DATA ANALYSIS AND INTERPRETATION

#### INTRODUCTION

In the preceding chapters, important literature which gives understanding about the topic was reviewed and used to identify the knowledge gap in the area of the study. In line with reviewed literature; the research problem, research objectives, research hypotheses & the research design used for this study were also discussed. This chapter deals with the descriptive statistics of the dependent and independent variables, correlation analysis, normality tests, and other important assumptions are discussed to see if the model used in this study is viable. Additionally, the results of the regression analysis are discussed in line with their short-run and long-run effects of each independent variable on the dependent variable.

#### 4.1. Descriptive Analysis

To examine the effect of exchange rate on foreign direct investment, some macroeconomic variables are included as a control variable for this study. So, hereunder, the detailed information of each variable, which includes mean, median, minimum, maximum and standard deviation is discussed in the following table 4.1.

**Table 4.1: The result of Descriptive analysis**

	FDI	EX	GDPGR	INF	TOP	ED
Mean	2.322906	10.98081	7.488308	9.427434	39.43000	62.47310
Median	2.049269	8.643500	9.931000	8.114494	39.41709	57.31579
Maximum	5.464246	22.41370	13.36300	44.35669	55.76592	145.4926
Minimum	0.001620	2.804775	-8.907000	-8.484249	17.95348	10.51625
Std. Dev.	1.866999	5.472142	5.630258	11.12205	10.42199	42.92977
Observations	26	26	26	26	26	26

Source: Compiled by researcher taking row data from World Bank

As it can be observed from the above table 4.1, result of descriptive analysis. This study is conducted by using 26 annual data observations which range from 1992 to 2017. The dependent variable in this study is foreign direct investment inflows to Ethiopia and measured as a percentage of GDP. As it can be seen, from the above descriptive analysis; the average result of FDI inflow as a percentage of GDP during the study period is 2.322906 percent with a maximum of 5.464246 percent and a minimum of 0.001620 percent. This implies that; during the study period (1992-2017) the FDI inflow to Ethiopia as a percentage of GDP was range from 0.001620 to 5.464246 with an overall average of 2.322906 percent. In addition to this, each observation in the study was deviated from this average by the value of 1.866999 percent. As mentioned in the conceptual framework of this study, the explanatory variable used in this study is the exchange rate, which is measured by local currency against USD. The average value of this variable is 10.98081birr, which implies that; on average how many Ethiopian birrs should have to be paid to purchase a single US dollar. The maximum and minimum value of this variable is 22.41370 and 2.804775 birr respectively; during the study period. For each observation in this study, there is the deviation value of 5.472142 from its average for the variable exchange rate. The other variable used as a determinant of foreign direct investment is economic growth, which is used as a control variable in this study. During the study period, the average score of this variable is 7.488308 percent with a maximum and minimum of 13.36300 percent and -8.907000 percent respectively. So, during the study period; the economic growth rate of the country where the range from -8.907000 to 13.36300 percent. On the other hand, each observation of economic growth variable has a deviation value of 5.630258 percent from its average.

The second control variable used in the study is the inflation rate. During the study period, this variable has the overall average value of 9.427434 percent with a maximum and minimum value of 44.35669, -8.484249 percent respectively. The deviation of each observation from its average is 11.12205 percent.

The variables trade openness and external debt are other control variables used in this study. During the study period, the overall average of these variables is 39.43000 and 62.47310 percent respectively with the maximum of 55.76592 and 145.4926 percent respectively. while the minimum value is 17.95348 and 10.51625 percent respectively. In addition to this, the deviation of each observation from its average is 10.42199 percent for variable trade openness and 42.92977 percent for variable external debt.

## 4.2. Stationarity Test

In conducting a study with time series data, it is necessary to assess whether the series is stationary or not. The reason behind is that; regression of a non-stationary series on another non-stationary series leads to what is known as spurious regression. Furthermore, statistical tests of the parameters resulting from such regression may be biased and inconsistent. The standard approach to investigate the stationary of a time series is through unit root tests (Gujarati, 2002).

### 4.2.1. Unit Root Test

Under the unit root test, several tests are available but the most commonly used are the Augmented Dickey-Fuller (ADF) and Philip and Peron (PP) tests. So, hereunder, the results of both tests are performed to confirm stationarity of the series. The hypotheses of these tests are also stated as.

HO: Unit root in variables

Decision criteria

H1: No Unit root in variables

Reject HO if PV < 0.05

**Table 4. 2: P-values for the ADF test.**

	At Level	At 1 <sup>st</sup> difference	
Variables	INTERCEPT	INTERCEPT	Decision
LFDI	0.0004***	0.0003***	Stationary at I(0)
ER	0.9990	0.0286**	Stationary at I(1)
GDP	0.0002***	0.0001***	Stationary at I(0)
INF	0.0098***	0.0000***	Stationary at I(0)
LTOP	0.0939*	0.0012***	Stationary at I(1)
LED	0.6950	0.0102**	Stationary at I(1)

Source: researcher own completion using E-view 10 software

NB: \*\*\* shows stationarity of variables at 1 percent significance level, \*\* shows 5 percent significance level, \* shows 10 percent significance level.

**Table 4.3: P-values for PP test.**

At Level		At 1 <sup>st</sup> difference	Decision
Variables	Intercept	Intercept	
LFDI	0.0001***	0.0000***	Stationary at I(0)
ER	0.9869	0.0221**	Stationary at I(1)
GDP	0.0002***	0.0001***	Stationary at I(0)
INF	0.0104**	0.0000***	Stationary at I(0)
LTOP	0.0609*	0.0012***	Stationary at I(1)
LED	0.6200	0.0107**	Stationary at I(1)

Source: researcher own completion using E-view 10 software

NB: \*\*\* shows stationarity of variables at 1 percent significance level, \*\* shows 5 percent significance level, \* shows 10 percent significance level.

Econometric models of time series data require that; the stationarity is tested as a prerequisite for running the data. For this purpose, as it is shown in the above tables 4.1 and 4.2 respectively; Augmented Dickey-Fuller (ADF) and Phillips–Perron (PP) tests to check that; the integration of all variables under the study are not I (2) is tested. Because the F statistic obtained from the variables integrated at I (2) is not easy to be interpreted in a meaningful way. In addition, if data is not stationary, a problem of spurious correlation arises, and the econometric model becomes invalid because of inferential estimates obtained from are bias and inconsistent and results in misleading conclusions. With this fact, from the above unit root test performed under ADF and PP tests all variables are confirmed as to be stationary. But, the levels of stationarity are different. For example, variable LFDI, GDP growth rate, and Inflation are stationary at level. And other variables like exchange rate, Trade openness and external debt are stationary at first difference. This is the main reason why this study used the ARDL model; because the ARDL model is very useful when variables are stationary at a different level. In line with this, the null hypothesis of a unit root (non- stationary) of variables is rejected at a 5 percent significance level for all variables. Because, if the p-value is greater than 0.05 the null hypothesis of a unit root will fail to rejected; which means that; there is a unit root and therefore, the variable is non-stationary. If the p-value is less than 0.05 the null hypothesis is rejected; which means that there is no unit root, and therefore, since all variables p-value is less than 0.05, which means (stationary) the researcher rejected the null hypothesis of a unit root.

### 4.3. Test for multicollinearity

According to Gujarati (2002), the term multicollinearity is due to Ragnar Frisch. Originally, it meant the existence of a “perfect,” or exact, the linear relationship among some or all independent variables of a regression model. The correlation matrix is very helpful to check any existence of strong correlations between the independent variables. The variables which have this strong relationship might be assumed as not explaining the model with the other correlated variable. This means that; the two correlated variables cannot explain together the model and in this case, one of the variables (the one that is considered as insignificant for the study) must be eliminated from the model. In doing so, analyzing the multicollinearity issues that the model can have is important. If the existence of the high correlation between any two independent variables in the model is confirmed; the problem of multicollinearity arises, and this makes significant variables insignificant by increasing its standard error. So, in the following table 4.4, the result of the multicollinearity issue that was tested through a correlation matrix is presented.

**Table 4.4: Result of the Correlation matrix**

Correlation t-Statistic Probability	LFDI	EX	GDPGR	INFLATION	LED	LTOP
LFDI	1.000000 ---- ----					
EX	0.510509 2.908543 0.0077	1.000000 ---- ----				
GDPGR	0.289373 1.480994 0.1516	0.390947 2.080850 0.0483	1.000000 ---- ----			
INFLATION	-0.273462 -1.392774 0.1765	0.137258 0.678849 0.5037	0.103372 0.509144 0.6153	1.000000 ---- ----		
LED	-0.244040 -1.232821 0.2296	-0.518665 -2.971923 0.0066	-0.523064 -3.006571 0.0061	-0.551660 -3.240228 0.0035	1.000000 ---- ----	
LTOP	0.688326 4.648594 0.0001	0.381070 2.019211 0.0548	0.380525 2.015832 0.0551	0.273801 1.394642 0.1759	-0.608794 -3.759437 0.0010	1.000000 ---- ----

Source: Compiled by Researcher using E-views 10 software.

Based on the result of the correlation matrix, which is shown in the above table 4.4; it is better to discuss the issue of multicollinearity by taking the benchmarks of Cooper & Schindler (2009); which suggests that, a correlation above 0.8 should be considered as a problem of multicollinearity. So, as it can be seen from the above table correlation matrix, there is no worry of multicollinearity issue in this model; since, the highest correlation is -0.608794 which is found between trade openness and external debt. In addition to this, the relation of the dependent variable with each independent variable is performed through a correlation matrix. But, since the concern of this study is to examine the effect of exchange rate on foreign direct investment; it is better to identify the sign and direction of these two variables. As it is expected and hypothesized; foreign direct investment and exchange rate are positively correlated. This implies that the variable exchange rate and foreign direct investment has a positive relationship, which means they move in the same direction.

#### 4.4. Optimal lag selection criteria

Selecting appropriate lag length is the series issue in studying a time series analysis; because, if the inappropriate lag selection is made, it may leads overall the result of the study biased because of model misspecification. So, here under the appropriate lag length for the study is performed through a VAR selection model.

**Table 4.5: VAR model**

VAR Lag Order Selection Criteria

Sample: 1992 2017

Included observations: 24

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-201.9496	NA	1.352784	17.32914	17.62365	17.40727
1	-98.92602	145.9501	0.005635	11.74384	13.80543	12.29078
2	-25.79237	67.03918*	0.000501*	8.649365*	12.47804*	9.665113*

Source: E-views 10 Software

\* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

As it is shown in the VAR model, table 4.4; there are four criteria to select a lag length for the model. All criteria show two lag lengths for the model, which is very interesting for the consistency of the model. So, since the FPE and AIC criteria are useful for small sample size; the researcher used two lag lengths for this model. The number of lags that the ARDL model must have, in order for the model to be feasible is 2. But, Later in the short term estimations, the software chooses the optimal number of lags for each variables assuming a maximum of 2 (in accordance with the VAR model).

#### **4.5: Test for Co-integration of Variables**

To investigate the existence of co-integration among variables, the researcher used the bounds testing approach developed by Peseran et al. (2001). Although, the stationarity levels of the series are analyzed before the bound test is carried out. Since, the models which are estimated with non-stationary regression models lead to spurious regression problems (Granger & Newbold, 1974); the results do not reflect the true relationship. In such a case, the results of t and F tests are no longer valid (Gujarati, 2002).

After determining the stationarity level of the series, the existence of co-integration among the series is tested. Bounds testing approach suggested by Peseran et al. (2001) is used to check if cointegration exists among variables. If cointegration is found among variables, the following two stages should have to be performed in accordance with Peseran et al. (2001). In first of these stages, to decide whether there is a relation of co-integration between the variables is; decided by comparing the critical values in Peseran et al. (2001) with the calculated F statistics. If the calculated F statistics is less than Peseran's lower bound, there is no relation of co-integration among the series. If the calculated F statistics is greater than the upper bound, there is a relation of co-integration among the series. If the F statistics is between the lower and upper bounds, a decision cannot be given about whether there is co-integration or not. Secondly, after performing the bound test, if existence of a long-run relationship among the variables in the model is confirmed, then, with the error terms obtained from the long-run equation, error correction model which gives the short-run equation among the variables is estimated through the ARDL method developed by Peseran and Shin (1999). The hypothesis of the bound test is stated as follows.

HO: No Long run relationship

Decision rule: Reject HO, if F-statistic > I (1)

H1: Ho is not true

**Table 4.6: Result of Bound Test**

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic k	8.086208 5	Asymptotic: n=1000		
		10%	2.26	3.35
		5%	2.62	3.79
		2.5%	2.96	4.18
		1%	3.41	4.68
Actual Sample Size	24	Finite Sample: n=35		
		10%	2.508	3.763
		5%	3.037	4.443
		1%	4.257	6.04
		Finite Sample: n=30		
		10%	2.578	3.858
		5%	3.125	4.608
		1%	4.537	6.37

Source: generated from E-views 10

As it is possible to observe in Table 4.6, according to the bounds test, the calculated F-statistic is above the upper critical bound values (higher than at 90%, 95%, 97.5% and 99% upper bounds), which means that; the model rejects the null hypothesis of no level effects. And this implies that; there is cointegration between the variables. Existence of co-integration among variable reveals, the study should have to estimate with error correction model in order to know the short run relationship among variables.

#### 4.6. Model Diagnostic test

To ascertain the goodness of fit of the estimated model, the diagnostic tests are conducted. The diagnostic test suggests that; the model passes the test of serial correlation, non-normality of the errors, heteroscedasticity associated with the model and finally steadiness of the model.

##### 4.6.1. Test for Autocorrelation

Autocorrelation is a characteristic of data which shows the degree of similarity between the values of the same variables over successive time intervals. This assumption states that the covariance between the error terms over time is zero. According to Brook (2003) “it is assumed that the errors are uncorrelated with one another. If the error is not un-correlated with one another, it would be stated that they are ‘auto-correlated’ or they are ‘serially correlated’”. To check the presence of autocorrelation in the model, the researcher used the Breusch-Godfrey test, which allows the examination of the relationship between error terms and several it’s lagged value at the same time. Therefore, the hypotheses of the autocorrelation test were formulated as follows:

H0: There is no autocorrelation problem in the model

H1: There is autocorrelation in the model.

Decision Rule: Reject H0 if the p-value is less than 0.05 significant levels.

Otherwise, do not reject H0.

**Table 4.7: Result for Serial Correlation**

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.527218	Prob. F(2,6)	0.6153
Obs*R-squared	3.587310	Prob. Chi-Square(2)	0.1664

Source: Compiled by the researcher using Eviews 10

As it can be seen from the table 4.7, the result of serial correlation test for both F-statistics and Obs R-squared are greater than 0.05, in this case, the null hypothesis of no autocorrelation should be not-rejected; since, the P-value is greater than 0.05. This implies the model is free from autocorrelation.

**4.6.2. Test for normality**

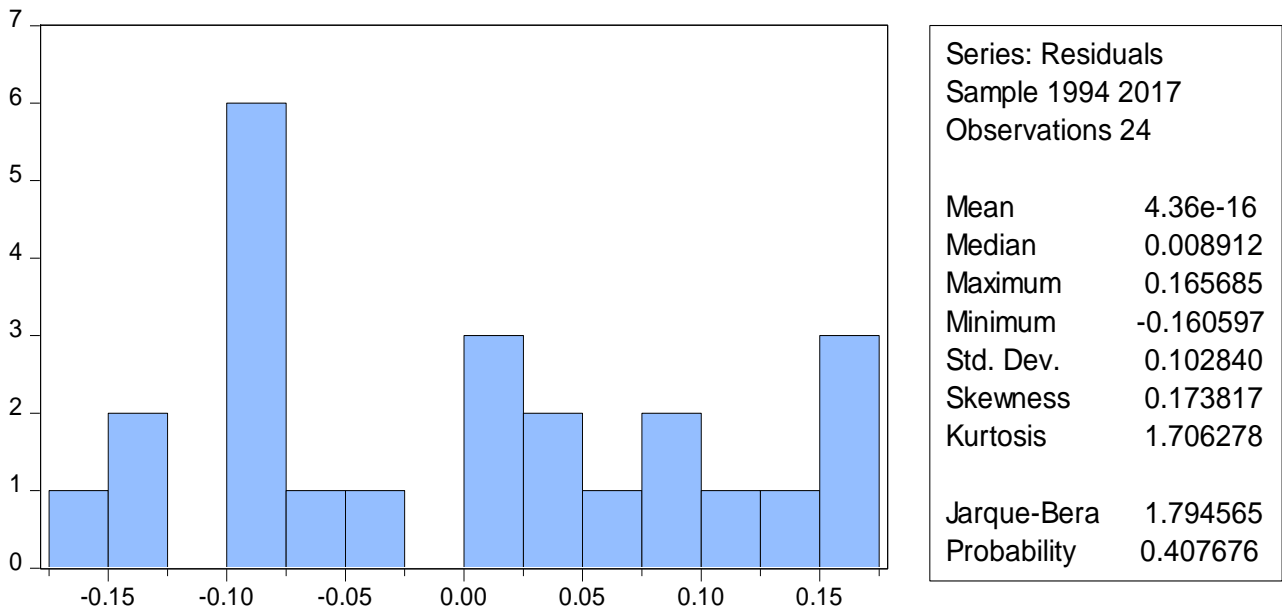
Brooks (2008) argued that with regard to the normality of the model; if the residual is normally distributed, the histogram should be bell-shaped and Bera-Jarque statistics could not be significant. This means the P-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null hypothesis of the data is normally distributed. Even if, there are several tests for normality assumption, like the histogram of residuals, normal probability plot (NPP), the most common one is Bera-Jarque (1981) test. So, following Brooks (2008), argument; this study employee Bera- Jarque (1981) test in order to identify; whether the data are normally distributed or not. The hypothesis of the normality test is formulated as follows:

H0: The data are normally distributed.

H1: The data are not normally distributed.

Decision Rule: Reject H0 if the p-value is less than (0.05) significant level. Otherwise, do not reject H0

**Figure 4.1: Normality test result.**



Source: generated from E-views 10.

As shown in the figure above 4.1, the Bera- Jarque statistics have a P-value of 0.40; clearly implies that it is greater than 0.05, which indicates; there is no evidence for the presence of an abnormality in the data. Thus, the null hypothesis that the data is normally distributed should not be rejected since the P-values were in excess of 0.05 significant levels. It can be concluded that; there is no problem of normality in the model.

#### 4.6.3. Test for Heteroscedasticity

This assumption can be used to check whether the variance of the error is constant or not. If the assumption of constant variance is violated, the standard error could be wrong and any inference made from them became misleading. In other word, if the errors do not have a constant variance, they are said heteroskedastic (Brook, 2014). To check heteroscedasticity, there are a number of methods used, but, the Breush-pagan-Godfrey tests for checking for heteroscedasticity problem were applied in this study. The following hypothesis is set for the heteroscedasticity test.

H0: There is no Heteroscedasticity problem in the model.

H1: There is a Heteroscedasticity problem in the model.

Decision Rule: Reject H0 if the p-value is less than (0.05) significant level. Otherwise, do not reject H0

**Table 4.8: Result of Heteroscedasticity test**

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.540495	Prob. F(15,8)	0.2736
Obs*R-squared	17.82784	Prob. Chi-Square(15)	0.2718

Source: generated from Eviews 10

As shown in the above table 4.8; both F-statics and Chi-square version of the test statistics gave the same conclusion that; there is no evidence for the presence of heteroscedasticity in this particular study; since the P-value is in excess of 0.05. Therefore, the error in the regression model has a constant variance or (homoscedasticity). In this case, the null hypothesis of no Heteroscedasticity problem in the model should not be rejected.

**4.6.4. Model Specification Test**

In order to select a correct estimated model, the researcher has carried out the Ramsey-RESET Test to check on the model specification. This is very helpful to test if there is information about model misspecification. In doing so, if the F-statistic or t-statistic value is more than 0.05, it is possible to conclude that, the model is correctly specified. The hypothesis of the model specification test is formulated as follows;

H0: The model is correct.                      H1: HO is not true.

Decision Rule: Reject H0 if the p-value is less than the significant level of 0.05. Otherwise, do not reject H0

**Table 4.9: Result for Ramsey Reset test**

Ramsey RESET Test

Equation: UNTITLED

Specification: LFDI LFDI(-1) EX EX(-1) EX(-2) GDPGR GDPGR(-1) GDPGR(-2) INF INF(-1) INF(-2) LED LED(-1) LED(-2) LTOP LTOP(-1) C

Omitted Variables: Squares of fitted values

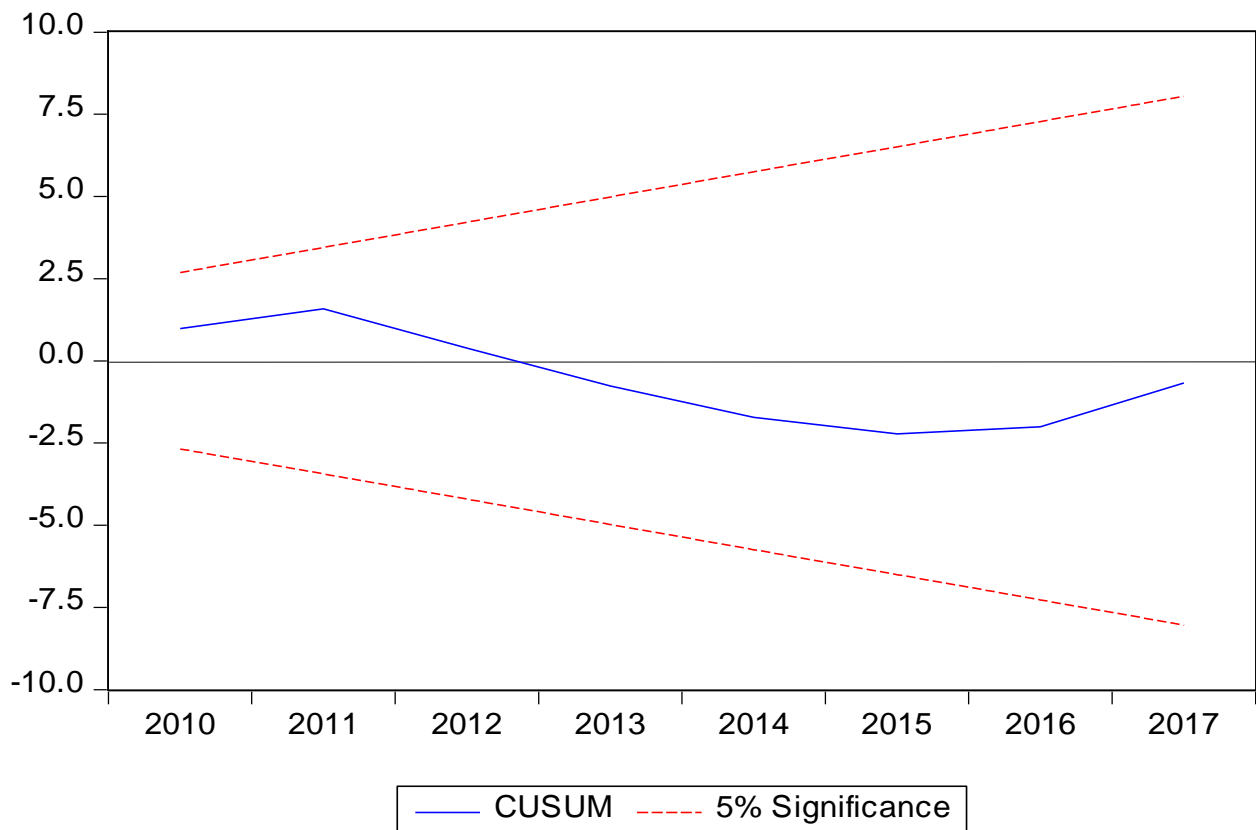
	Value	df	Probability
t-statistic	1.679488	7	0.1369
F-statistic	2.820680	(1, 7)	0.1369

As it is shown in the above table 4.9; the result of t-statistic and F-statistic shows that 0.1369 and 0.1369 respectively; which are the same number and absolutely greater than 0.05. So this implies that, acceptance of null hypothesis; which states that, the model is correctly specified.

**4.6.5. Test for stability**

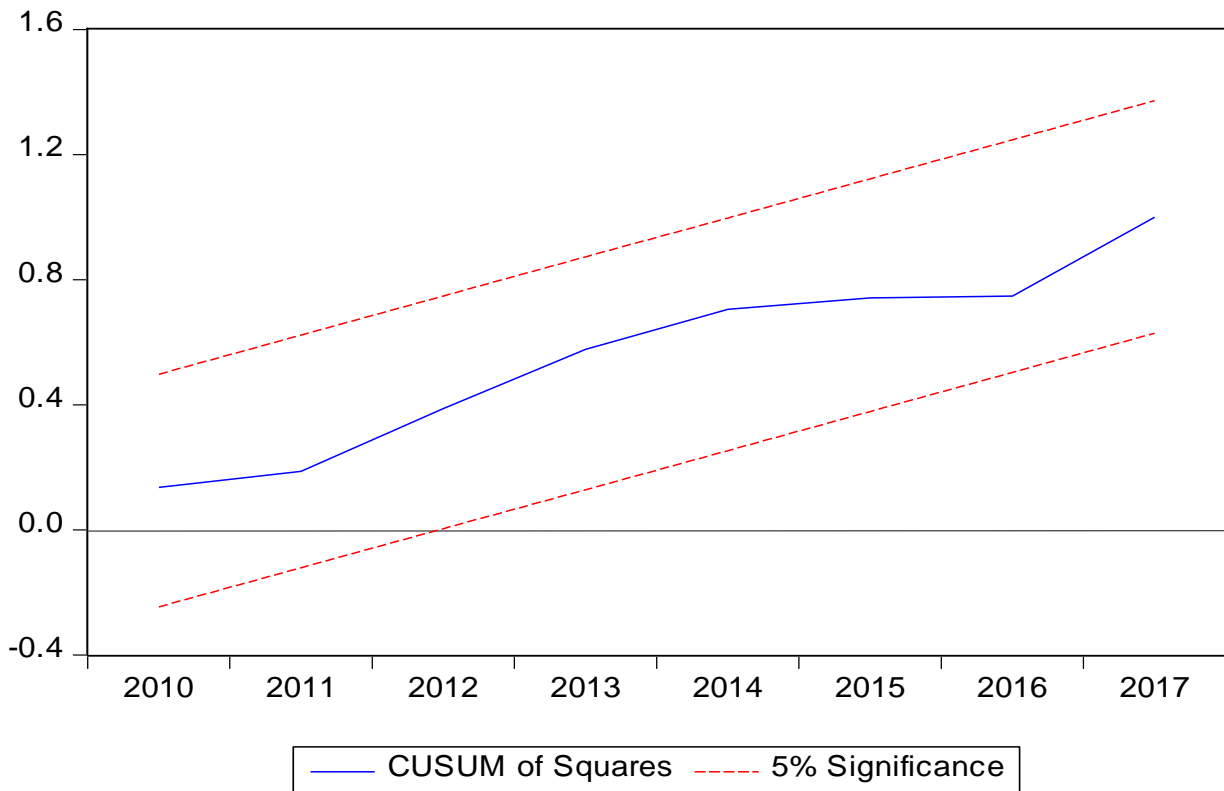
Test for the stability of the model can be done through CUSUM and CUSUM squares. According to Brown et al (1975), the plot of CUSUM (cumulative sum of recursive residuals) and CUSUM squares (cumulative sum of squares of recursive residuals) used to check if the model has stability or not. In a time series, the model that is improperly specified produces biased coefficients which result in reducing the explaining power of the empirical analysis (Hanson, 2002). These stability tests are used to check the constancy of the parameter estimates of the ARDL model (Shahbaz, 2013). Brown et al. (1975) stated that, the residuals are insensitive to small or gradual changes in parameter estimates. Hence, the following plots of CUSUM and CUSUM squares are performed with a 5 % significance level.

Figure 4.2: Result of CUSUM (cumulative sum of recursive residuals)



Source: generated from E-views 10 software.

Figure 4.3: Result of CUSUMQ (cumulative sum of recursive residuals squares)



Source: generated from E-views 10 software

As it is shown in the above both figure 4.2 and 4.3 respectively, the line of CUSUM and CUSUM squares lies between two boundary lines, which shows the stability of the model. If the line falls within the boundary of two lines, which means (upper and bottom) we can say that; the model is stable in the long run. But, if the line falls out of the boundary lines, it is difficult to summarize the stability of the model. In this study, since the CUSUM and CUSUM square line falls within the given boundary lines, it is possible to summarize the stability of the model in the long run and significant at 5 percent level.

The results of both figures show that; the plots do not cross the critical value, as a result, the ARDL model is said to be stable as the lines did not traverse the critical lines. Therefore, the model is appropriate for recommending policy implication to concerned bodies for proper decision making in Ethiopia.

### Long run estimation of the model (FDI inflows)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EX	0.089824	0.014374	6.249200	0.0002***
GDPGR	-0.046305	0.019807	-2.337831	0.0476**
INF	-0.021149	0.012667	-1.669600	0.1335
LED	0.365569	0.370912	0.985596	0.3532
LTOP	3.077081	0.550274	5.591903	0.0005***
C	-0.810616	0.305199	-2.656023	0.0290

Source: generated from E-views 10 software

Note: \*\*\* indicates 1 percent significance level and \*\* indicates 5 percent significance level

$$FDI = -0.810 + 0.09EX - 0.046GDP - 0.021INF + 0.3655ED + 3.07TOP$$

#### 4.7. Discussion of long-run estimation of variables

##### Exchange rate

From the above regression result; the variable exchange rate has a positive and statically significant relationship with foreign direct investment at 1 percent significance level. This implies that; in the long run, the exchange rate affects foreign direct investment positively. Which means, ceteris paribus, 1 unit increase in exchange rate causes 8.9824 percent increase in foreign direct investment. On another way, the implication is; One Ethiopian birr devaluation against US dollar causes foreign direct investment to increase by 8.9824 percent. In this case, by making other things remaining constant, it is the general hypothesis that; investors prefer such as the economy for investment purpose. Because, the currency is depreciated or subject to devaluation means, the foreign investors get more purchasing power in the host country. The general assumption behind this is; devaluation encourages export-oriented investor in which he /she is going to get more profit from export, then more market share in the shape of more exports and hence rise in FDI inflows. The result of this finding is consistent with studies conducted by Muhammad and Hassan (2017), Osinubi and Amaghionyeodiwe (2009), Aqeel & Nishat (2004), Akram and Alem (2017), and Muema, (2013).

**Economic Growth:** The sign and direction of economic growth, which is proxied by GDP growth rate is not as expected and different from some empirical evidence. However, as a general, several empirical studies report negative effects of economic growth on Foreign Direct Investment. For example, Buchanan et al. (2012), Jensen (2003), and Wint and Williams (2002), all find a significantly negative impact of economic growth in attracting foreign direct investment in developing countries. Specifically, it is not new in Ethiopia; since Demissie (2016) and Tadele (2013) come up with the same result. The regression result indicates that; Economic growth and Foreign Direct Investment has a negative relationship and statically significant at 5 percent level of significance. Which means; *ceteris paribus*, 1 unit increase in the gross domestic product causes 4.6305 percent decrease in foreign direct investment in the long run. According to Demissie (2016), a possible explanation behind the negative sign of gross domestic product is that; when the economy grows, domestic saving increases and this narrows the saving-investment gap hence less FDI inflows to the country. Additionally, According to Jensen (2003) and Tsai (1994), the negative sign of this variable can happen if there is a measurement problem. Which means; such negative associations are as a result of a scaling effect. Economies that grow at a faster rate than the growth in Foreign Direct Investment will experience a decrease in Foreign Direct Investment when compared to GDP. This is especially true in Ethiopian context; because, during the study period, in collecting data, the researcher observed that, the level of foreign direct investment was increasing from time to time but when it's compared to economic growth, it's not growing as the economy is growing. To summarize, an increase in the gross domestic product is an implication for higher output of goods and services produced domestically, which directly increases labor cost in Ethiopia and affects foreign direct investment negatively. Additionally, increasing in Gross Domestic Product is an implication for an increase in domestic private investors, and this causes foreign investors to lose their appetite to invest in Ethiopia.

**Inflation:** The inflation rate is negatively related to Foreign Direct Investment as expected but not significant in the long run, this indicates that; inflation and Foreign Direct Investment has a negative relationship in the long run. The result of the regression reveals that; *ceteris paribus*, 1 unit increase in inflation rate causes foreign direct investment to decrease by 2.1149 percent in the long run. This may be attributed to the fact that; the inflation rate has its sources from the external channels. The result of this variable is consistent with the study established by (Hareb et al, 2015).

**External debt:** The regression result shows that; the variable external debt abbreviated as LED has a positive relationship with Foreign Direct Investment; but, not statically significant to affect foreign direct investment in the long run. The result of the regression output shows that; ceteris paribus, a 1 percent rise in External Debt leads to 0.365569 percent increase in Foreign Direct Investment in the long run. This is an implication for that; foreign direct investments consider other macro-economic variables than external debt in the long run. But, the positive relationships of these variables are an indication of that; investor scans the scenario and negotiates with governments for making FDI at his own terms and conditions. If the government agrees on major terms and conditions, the foreign investor makes the investment happily.

**Trade openness:** Regarding trade openness, which is abbreviated as LTOP; the sign of the coefficient is positive as expected. Which implies; it has a positive relationship with foreign direct investment and statically significant at 1 percent significant level. The positive sign is an indication of their relationship in the long run. Which implies; ceteris paribus, 1 percent increases in the level of trade openness causes 3.077081 percent increase in foreign direct investment in the long run. The implication behind their positive relationship is that; when the host country trade is more liberalized, foreign direct investors likely increase their interest to make an investment in the host country. This is because of, the investors give a wide range of considerations such as; the desire to develop secondary and more diversified sources of supply by way of obtaining lower-cost products to be used either as inputs or for sale elsewhere. The more liberalized trade, the more foreign direct investment. The result of this variable is consistent with the study established by Ahmed (2015) and Ellahi (2011).

### **Error Correction Model and Short run coefficients of the variables**

#### **Error Correction Model**

Error correction model is a useful model to identify the short run coefficients of variables which are co-integrated in the long run. After performing a bound test for this study, the result of the bound test confirmed the existence of a long-run relationship among variables, which allow the researcher to run error correction model.

## Result of Error Correction Model (ECM)

ARDL Error Correction Regression

Dependent Variable: D(LFDI)

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

Case 3: Unrestricted Constant and No Trend

Sample: 1992 2017

Included observations: 24

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### ECM Regression

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.987421	0.130499	-7.566487	0.0001
D(EX)	0.343870	0.060731	5.662155	0.0005***
D(EX(-1))	-0.442568	0.059164	-7.480415	0.0001***
D(GDPGR)	-0.064081	0.007289	-8.791821	0.0000***
D(GDPGR(-1))	0.020271	0.005404	3.751140	0.0056***
D(INFLATION)	-0.017625	0.002505	-7.034990	0.0001***
D(INFLATION(-1))	0.014696	0.003362	4.371416	0.0024***
D(LED)	-0.566134	0.261333	-2.166331	0.0622*
D(LED(-1))	-0.781392	0.308819	-2.530255	0.0352**
D(LTOP)	5.159871	0.685694	7.525035	0.0001***
ECM(-1)*	-0.977494	0.090420	-10.81054	0.0000***

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R-squared	0.937055	Mean dependent var	0.087488
Adjusted R-squared	0.888635	S.D. dependent var	0.409904
S.E. of regression	0.136791	Akaike info criterion	-0.837168
Sum squared resid	0.243252	Schwarz criterion	-0.297227
Log-likelihood	21.04602	Hannan-Quinn criter.	-0.693922
F-statistic	19.35285	Durbin-Watson stat	2.303989
Prob(F-statistic)	0.000003		

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Source: generated from E-views 10 software.

The aim of running the error correction model is to see the short run relationship among the variables and to know at what percentage disequilibrium in the short run will be corrected in the long run. From the above error correction model, the mark of ECM term giving the error correction coefficient; which is negative and statistically significant as expected. This means that; the adjustment speed is good. According to Bahmani-Oskooee (1999), if ECM is negative and statistically significant, the variables are co-integrated in the long run. The error correction term (ECM), which indicates the speed of adjustment has a value of -0.977494. It is considered as correctly signed and also statistically significant. This implies that; the short run disequilibrium, as well as inconsistencies, are being adjusted and corrected in the long run at a percentage of 97.74. The negative sign is a confirmation of the existence of equilibrium in the long term.

#### **4.8. Discussion of Short run effects**

**Exchange rate:** From the above short-run coefficients of the variables, it can be seen that; the variable exchange rate and inward FDI has a positive relationship and statically significant at 1 percent significance level. The coefficient on the exchange rate variable shows 34.3870 percent. This implies, in the short run, ceteris paribus, 1 unit increase of domestic currency against US dollar causes 34.3870 percent increase in foreign direct investment. Or, 1 birr devaluation against the US dollar causes foreign direct investment to increase by 34.3870 percent in the current year. And, it is an indication for an immediate reaction of the foreign direct investor when devaluation is made. The result of the short-run effect is the same with the result of long-run effect; which implies that, foreign direct investors are aware of the exchange rate variable in short as well as in the long run. So, as highlighted in the long run estimation of variables; it's the general hypothesis that investor prefers such economy for investment purpose whose currency is depreciated against foreign currencies. The result of this study is consistent with the finding established by Muhammad and Hassan (2017), Osinubi and Amaghionyeodiwe (2009), Aqeel & Nishat (2004) and Akram and Alem (2017). On the other hand, the previous year level of the exchange rate (EXR\_1) affects the foreign direct investment of current year negatively and statistically significant at the 1 percent significance level. This means the one period lag or last year devaluation of birr against US dollar affects FDI inflow of current year negatively. Or, the current year devaluation affects the next year FDI inflow negatively. And this may happen if the firm investment is the import-oriented type of investment.

Furthermore, it implies that; devaluation makes import expensive, which negatively affects import- oriented foreign direct investor. In addition to this, it is an implication of that; once the devaluation takes place the foreign direct investor shows immediate reaction to make an investment in the host country. But, if devaluation takes place from year to year it affects FDI negatively.

**Economic growth:** The variable economic growth proxied by real GDP growth rate has the same result with the long run effect. Which shows that, negative relationship with foreign direct investment and statically significant at 1 percent significance level. The result of regression output reveals that; ceteris paribus, 1 unit increase in growth domestic product causes foreign direct investment to decrease by 6.4081 percent. This is an implication of that; foreign direct investors are not much more interested when the host country economy grows from time to time. The finding of this variable is consistent with the study conducted by Demissie (2016). Whereas, GDP (-1)) has a positive relationship with foreign direct investment. This means, the last year economic growth has a positive impact on current period foreign direct investment; or, current year economic growth affects next year foreign direct investment positively. In this case, 1 unit increase in last year gross domestic product causes foreign direct investment of the current year to increase by 2.0271 percent and statically significant at 1 percent significance level. Or, 1 unit increase in the current period economic growth leads foreign direct investment of next year to increase by 2.0271 percent. This may happen, because of; the firm may use the domestic market rather than a foreign market. This means, the investor is more interested in domestic market development in order to sell the final output in the domestic market; so, such as economic growth attracts the FDI which needs the host country economic growth.

**Inflation:** In short run, inflation and foreign direct investment have a negative relationship as of the long run. But, in the short run, inflation affects foreign direct investment negatively and significantly. The finding of this variable is consistent with the findings established by Akram and Alem (2017), Demissie (2016) and Kamau (2016). The regression result reveals that; ceteris paribus, 1 unit increase in inflation rate causes foreign direct investment to decrease by 1.7625 percent and statically significant at 1 percent significance level. This implies that, when the decline in the value of host currency is backed by proportional or reasonable inflation, it decreases FDI. This is because of a decline in currency value results in a decline in FDI inflows as it lowers the value of FDI inflows and FDI stock in the host country. And this discourages foreign investor to make an investment in the home country.

Moreover, investors feel hesitation in broadening their business base in the country, as every depreciation activity of home currency reduces the value of those MNC's assets. The other implication is, when people have more money in their hand, their consumption are automatically increases and when that happens automatically, price of commodities increases; when the price of the commodities are high, that will result in high production cost (because, prices of commodities are the sum of input prices, cost of raw material, wages of labor, land prices and cost of capital). All off these factors are related to production. Hence, the cost of all these factors would go up. All these factors ultimately will lead to the reduction in business profits which in turn reduces foreign investments. On the other hand, the last year level of inflation rate affects the current year foreign direct investment positively. Or, the current year inflation rate affects next year foreign direct investment positively. The result of regression output reveals that; 1 unit increase in last year inflation causes the current year foreign direct investment to increase by 1.4696 percent and statistically significant at 1 percent significance level.

**External debt:** The other variable is external debt, which is abbreviated as LED, affects foreign direct investment negatively and significant at 10 percent significance level. This means; *ceteris paribus*, a 1 percent increase in external debt causes 0.566134 percent decrease in foreign direct investment. This implies that; foreign direct investors are aware of the level of external debt in the short run but at a weak significance level. The finding of this variable is consistent with the study established by Muhammad and Hassen (2017) and Naseem (2017). Additionally, the last year level of external debt has a negative impact on current period foreign direct investment. The result of regression output reveals, 1 percent increase in external debt in the last year, causes, the current period foreign direct investment to decrease by 0.781392 percent and statically significant at 1 percent significance level. The possible explanation behind the negative relationship of this variables are, Countries, especially like Ethiopia; where the shortage of hard currency is highly demonstrated on the economy; they have limited option for the continuous inflow of foreign exchange. Among the major sources of foreign exchange inflows, external debts and FDI are the major sources. But, since External debts are made available on hard terms; including higher interest rates, it may not beneficial for the economy of the recipient country. Because, the receipt country may fail to repay the loan when it is due and this will create intervention of those fund providers (like IMF, World Bank) in the economic policy of the host country. And it may affect the decision of foreign direct investors.

Thus, increasing the level of foreign debts destroys foreign investors' attitude and creates negative expectations from the economic future and reduces the degree of investments in this country.

**Trade Openness:** As it is shown in the above short-run coefficients of variables, the variable trade openness as abbreviated as LTOP have a positive relationship with foreign direct investment and significant at 1percent significance level in the short run. This means, *ceteris paribus*, 1 percent increases in trade openness causes 5.159871 percent increase in foreign direct investment. This shows that; foreign direct investors give an immediate response to the level of trade openness in both the short run and long run. The finding of this study is consistent with the study established by Ahmed (2015) and Demissie (2016). The positive relationship between the variables explains that, as more trade liberalization in Ethiopia, the more the interest of foreign direct investors to make an investment in Ethiopia.

Besides, the value of R-square and adjusted R-square is 0.937055 and 0.888635 respectively. This indicates, 88.8 percent of the change in independent variables explains the change in the dependent variable. This means, exchange rate, economic growth, inflation, trade openness, and the external debt collectively explain 88.8 percent of change in foreign direct investment. However, the remaining 11.2 percent of the variation change in the dependent variable will be explained by other independent variables which are not included in this study. The adjusted R-squared which is an indication of goodness of fit, In comparison to the R Square (Brooks,2002), is used in this study to discuss the explaining power of independent variables. Because, the adjusted R square is better and more precise goodness of fit measurement, since, it allows a degree of freedom to the sum of squares. Therefore, even after the addition of a new independent variable (s,), the residual variance does not change. In addition, the F-statistics (an overall test of significance) take a value of 19.35285 with P-value of zero. The null hypothesis of F-statistics (an overall test of significance) that equal to zero R-square is rejected at 1 percent significance level since P-value is 0.00003. Thus, all the variables had jointly statistically significant effect on foreign direct investment.

**4.10. The Summary of expected and actual signs of independent variables.**

<b>Explanatory Variable</b>	Expected sign effect	Actual effect	<b>Hypothesis status</b>
Exchange rate	Positive and Significant	Positive and Significant	Do not reject
<b>Control variables</b>	Expected sign effect	Actual effect	<b>Hypothesis status</b>
Economic growth rate	Positive and Significant	Negative and Significant	Reject
Inflation rate	Negative and Significant	Negative and Significant	Do not reject
Trade openness	Positive and Significant	Positive and Significant	Do not reject
External debt	Negative and Significant	Negative and Significant	Do not reject

Source: researcher compilation

## CHAPTER FIVE

### SUMMARY OF MAJOR FINDING, CONCLUSION, AND RECOMMENDATION

#### INTRODUCTION

This chapter is the last chapter of this study; which sum up the whole thesis in a comprehensive manner. Accordingly, in the first part of this chapter, an overview of the thesis and its major findings are presented and finally, the chapter ends up with recommendations for policy implications and suggestion for future studies.

#### 5.1. Summary of Major Finding and Conclusion.

The general objective of this study was to examine the effect of exchange rate on foreign direct investment inflows in Ethiopia. In addition to the exchange rate, some macro-economic variables like economic growth rate, inflation rate, trade openness, and external debt were included in the study as a control variable. To achieve the objective of the study, the study used explanatory research design and quantitative research approach with a secondary time series data utilized over the study period (1992-2017). In order to estimate the extent of the effects of each variable, several tests were needed to be done. Firstly, a multicollinearity test was checked through a correlation matrix; in order to see, if there was an issue between variables. Then, the stationarity tests were made through unit root test and proved to have mixed results; in which, some variables were stationary at the level and others at first differences. To this end, the study used autoregressive distributed lag (ARDL) model of estimation technique to identify short run as well as the long-run effect of the exchange rate on foreign direct investment. The existence of a long-run relationship among the variables was confirmed through ARDL-Bound test. Additionally, other tests (such as the serial correlation, Ramsey's rest, normality, heteroscedasticity tests, Cusum, and Cusum Squares) were confirmed that a model is feasible. Subsequently, the empirical findings of this particular study suggested the following conclusions.

The finding of the study indicates that; exchange rate affects foreign direct investment positively in the long run as well as in the short run and statically significant at 1 percent significance level in both cases. Furthermore, one period lag or the last year effect of exchange rate on current period foreign direct investment was found negative and statically significant at 1 percent significance level.

The finding of the study implies that; foreign direct investors are interested to make an investment when devaluation takes place in Ethiopia. But, continuous devaluation reduces the level of foreign direct investment inflows into Ethiopia. The finding further suggests that, in addition to the exchange rate, economic growth and trade openness were found as the most drives of foreign direct investment inflows in Ethiopia. The finding of the study reveals that; trade openness found positively affects foreign direct investment and statically significant at 1 percent significance level in the long run as well as in the short run. On the other hand, economic growth affects foreign direct investment negatively and statically significant at 5 and 1 percent significance level in the long run as well as in the short run respectively. But, the last year level of economic growth has a positive impact on the current year foreign direct investment and statically significant at 1 percent significance level.

The other variables such as inflation rate and external debt have an insignificant effect on FDI inflow into Ethiopia in the long run and this proves that; these variables are not many important factors in determining FDI in Ethiopia. While they are significant to determine of foreign direct investment in the short run. Therefore, from the finding of the study, it is possible to understand that, the decision of foreign direct investors is a serious issue which needs consideration for both risk and benefit involved in making an investment. As it is observed, the firm does not make an investment based on short term macroeconomic factors, while, they give consideration for long term relationship of these factors.

## **5.2. Recommendation**

Based on the findings of the study, the following possible recommendations were forwarded for policy implications to concerned bodies.

In general, it is revealed that; there is a long-term link in the nexus of the exchange rate, economic growth, inflation, trade openness and external debt with foreign direct investment in Ethiopia. This indicates that; the Government of Ethiopia shall utilize the above factors carefully on a long-run perspective to capitalize on the benefits of the nexus properly. Additionally, in making a policy arrangement, the government should have to take these variables into account in order to advocate to increase the country overall foreign direct investment performance. Furthermore, since the overall objective of FDI is different from one another; it is better to give consideration in making new policy, in order to identify which FDI seekers are benefits Ethiopia.

Particularly, the study recommends to the concerned bodies to ensure the stability of the exchange rate once devaluation is made. Unless, in order to handle exchange rate risk, the existing foreign direct investor forced to move its production to a favorable location and this results in decreasing overall FDI stock in Ethiopia. More specifically, the study forwards the following points to be considered by the concerned bodies in a bid to generate foreign currency apart from foreign direct investment.

- **Remittances:** Remittances of overseas should be brought into Ethiopia as much as possible only through proper banking channels. As going on currently, the government should have to encourage the public as well as private banks to provide more and more Incentive schemes for the user of such channels.
- **Reducing Non-Developmental Expenditure:** Decreasing the level of non-developmental expenditures are another mechanism; that, the government should have to work for it. This includes decreasing the amount of medical care for government officials and the number of government officials those went abroad for the diplomatic purpose.
- **Franco-valuta or new legislation:** The other serious issue should be preparing proper legislation for those people having billions of US dollars in banks outside Ethiopia; either they are businessmen, politicians or any other category. Furthermore, since the idea of Franco-Valuta is giving 'Permit', means a process of importing goods by a person permitted to do so by using foreign currency from his own source. The government should prepare new legislation for such peoples.
- **Encouraging the airline:** as indicated on news related to the crashed Ethiopian airline max 8, 737 ET in recent months (3/10/2019); the reputation that the Ethiopian airline has on the airline market is evidenced from different Media across the world. So, by using this reputation and improving the airline's service quality; the government can generate a huge amount of foreign currency.
- Furthermore, improving the level of export, encourage tourism sectors and minimizing the import level by looking forward to importing substitutions are driving forces that Ethiopia has in generating foreign currency.

Finally, With regard to economic growth, since the host country economic growth is dependant on the general economic outlook of the host country and the macroeconomic variables. The study recommends to the concerned bodies to look over those variables. Because, the effectiveness of the economic reform policies, other policy directives like tariffs, trade controls, taxes and so forth, as well as various regulations imposed on foreign investors

by the host country become fundamental to the decision to invest. Besides, As such more than anything, the government shall develop and introduce policies that increase the level of trade openness in Ethiopia since it has big power in attracting FDI. Because in trade openness, the issue of the tariff system and any other barriers that may act to inhibit smooth FDI inflows into the country may exist. In this case, the study recommends the concerned bodies or government to bring Ethiopia under the world trade organization member. Because, with liberalization and openness Ethiopia should have to move forward to higher value-added, skill intensive and high wages industries.

### **5.3. Suggestions for Further Research**

The study was focused on the effect of exchange rate on foreign direct investment inflows in context of Ethiopia, in doing so; the researcher was added inflation, economic growth, trade openness, and external debt as a control variable and as the determinants of FDI in Ethiopia. There may be other factors that influence the level of FDI remittances into Ethiopia. Therefore, more research needs to be carried out on the other determinants of FDI with each factor being studied individually to determine the impact it has on FDI remittances. In line with this, the data used for this study was on an annual basis, but it's more meaningful if another study will be conducted through quarterly or semiannually basis data. The researcher has tried his best to get data but it was unsuccessful to get it because of unavailability of data, so, one can try his best again.

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# Appendixes

## Appendix one: Long run and Conditional Error Correction Regression result

ARDL Long Run Form and Bounds Test

Dependent Variable: D(LFDI)

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

Case 3: Unrestricted Constant and No Trend

Sample: 1992 2017

Included observations: 24

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### Conditional Error Correction Regression

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.987421	0.345500	-2.857945	0.0212
LFDI(-1)*	-1.218112	0.224198	-5.433200	0.0006
EX(-1)	0.109415	0.019181	5.704260	0.0005
GDPGR(-1)	-0.056404	0.025448	-2.216403	0.0575
INFLATION(-1)	-0.025761	0.017971	-1.433500	0.1896
LED(-1)	0.445304	0.420257	1.059600	0.3203
LTOP(-1)	3.748229	1.083707	3.458709	0.0086
D(EX)	0.343870	0.111513	3.083666	0.0150
D(EX(-1))	-0.442568	0.099189	-4.461869	0.0021
D(GDPGR)	-0.064081	0.015053	-4.257060	0.0028
D(GDPGR(-1))	0.020271	0.010035	2.019933	0.0781
D(INFLATION)	-0.017625	0.006588	-2.675537	0.0281
D(INFLATION(-1))	0.014696	0.006681	2.199572	0.0590
D(LED)	-0.566134	0.430431	-1.315271	0.2249
D(LED(-1))	-0.781392	0.445801	-1.752780	0.1177
D(LTOP)	5.159871	1.132265	4.557121	0.0019

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\* P-value incompatible with t-Bounds distribution.

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### Long Run Equation

#### Case 3: Unrestricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EX	0.089824	0.014374	6.249200	0.0002
GDPGR	-0.046305	0.019807	-2.337831	0.0476
INFLATION	-0.021149	0.012667	-1.669600	0.1335
LED	0.365569	0.370912	0.985596	0.3532
LTOP	3.077081	0.550274	5.591903	0.0005

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EC = LFDI - (0.0898\*EX -0.0463\*GDPGR -0.0211\*INFLATION + 0.3656\*LED + 3.0771\*LTOP )

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### Appendix Two: The result of Co-integration test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	8.086208	10%	2.26	3.35
k	5	5%	2.62	3.79
		2.5%	2.96	4.18
		1%	3.41	4.68

### Appendix three: The result of Error Correction Model

ARDL Error Correction Regression

Dependent Variable: D(LFDI)

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

Case 3: Unrestricted Constant and No Trend

Sample: 1992 2017

Included observations: 24

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#### ECM Regression

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.987421	0.130499	-7.566487	0.0001
D(EX)	0.343870	0.060731	5.662155	0.0005
D(EX(-1))	-0.442568	0.059164	-7.480415	0.0001
D(GDPGR)	-0.064081	0.007289	-8.791821	0.0000
D(GDPGR(-1))	0.020271	0.005404	3.751140	0.0056
D(INFLATION)	-0.017625	0.002505	-7.034990	0.0001
D(INFLATION(-1))	0.014696	0.003362	4.371416	0.0024
D(LED)	-0.566134	0.261333	-2.166331	0.0622
D(LED(-1))	-0.781392	0.308819	-2.530255	0.0352
D(LTOP)	5.159871	0.685694	7.525035	0.0001
ECM(-1)*	-0.977494	0.090420	-10.81054	0.0000

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R-squared	0.937055	Mean dependent var	0.087488
Adjusted R-squared	0.888635	S.D. dependent var	0.409904
S.E. of regression	0.136791	Akaike info criterion	-0.837168
Sum squared resid	0.243252	Schwarz criterion	-0.297227
Log likelihood	21.04602	Hannan-Quinn criter.	-0.693922
F-statistic	19.35285	Durbin-Watson stat	2.303989
Prob(F-statistic)	0.000003		

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#### Appendix Four: Result of correlation matrix

Correlation t-Statistic Probability	LFDI	EX	GDPGR	INFLATION	LED	LTOP
LFDI	1.000000 ---- ----					
EX	0.510509 2.908543 0.0077	1.000000 ---- ----				
GDPGR	0.289373 1.480994 0.1516	0.390947 2.080850 0.0483	1.000000 ---- ----			
INFLATION	-0.273462 -1.392774 0.1765	0.137258 0.678849 0.5037	0.103372 0.509144 0.6153	1.000000 ---- ----		
LED	-0.244040 -1.232821 0.2296	-0.518665 -2.971923 0.0066	-0.523064 -3.006571 0.0061	-0.551660 -3.240228 0.0035	1.000000 ---- ----	
LTOP	0.688326 4.648594 0.0001	0.381070 2.019211 0.0548	0.380525 2.015832 0.0551	0.273801 1.394642 0.1759	-0.608794 -3.759437 0.0010	1.000000 ---- ----

#### Appendix Five: Result of Auto correlation test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.527218	Prob. F(2,6)	0.6153
Obs*R-squared	3.587310	Prob. Chi-Square(2)	0.1664

#### Appendix six: Result of Heteroskedasticity test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.540495	Prob. F(15,8)	0.2736
Obs*R-squared	17.82784	Prob. Chi-Square(15)	0.2718
Scaled explained SS	0.699523	Prob. Chi-Square(15)	1.0000

**Appendix seven: Result of Ramsey RESET Test**

Ramsey RESET Test

Equation: UNTITLED

Specification: LFDI LFDI(-1) EX EX(-1) EX(-2) GDPGR GDPGR(-1)

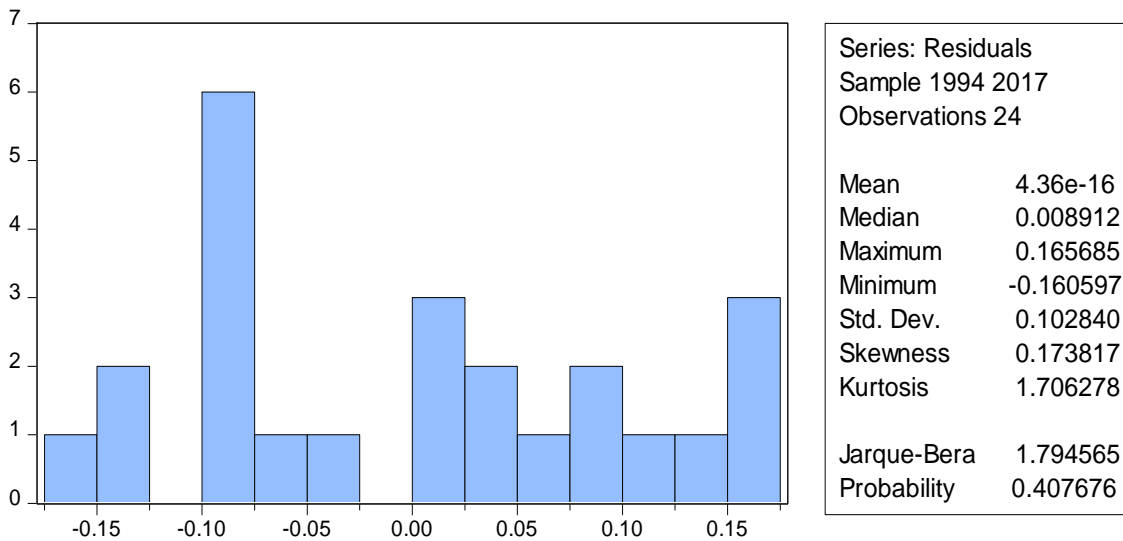
GDPGR(-2) INFLATION INFLATION(-1) INFLATION(-2) LED LED(-1)

LED(-2) LTOP LTOP(-1) C

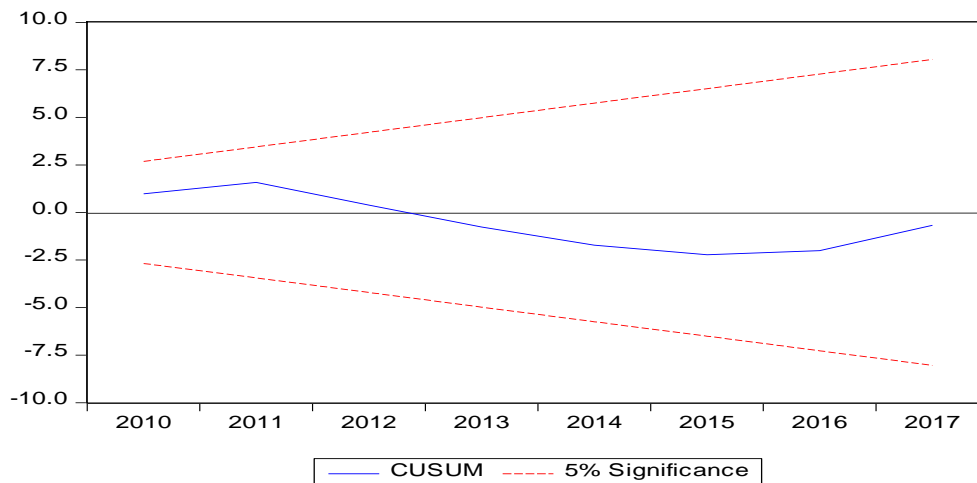
Omitted Variables: Squares of fitted values

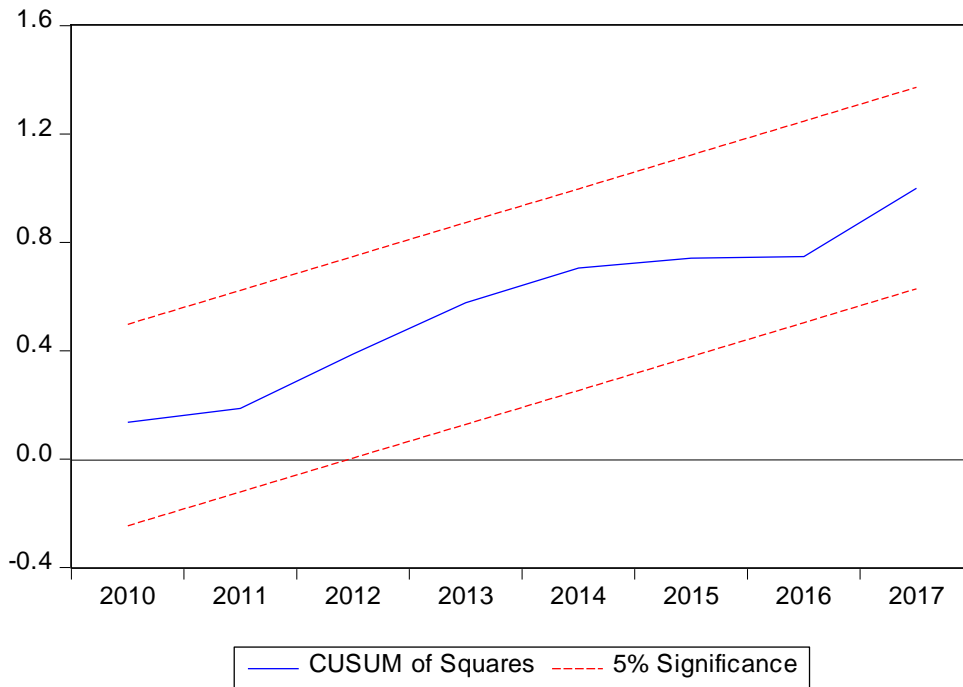
	Value	df	Probability
t-statistic	1.679488	7	0.1369
F-statistic	2.820680	(1, 7)	0.1369

**Appendix eight: Result of Normality test**



**Appendix nine: Result of CUSUM and CUSUM square test**





### Appendix ten: Summary of Raw Data

Year	FDI	EX	GDPGR	Inflation	TOP	ED
1992	0.00162	2.804775	-8.907	21.019	18.34459	89.16012
1993	0.039634	5.7744	13.363	9.99	17.95348	110.042
1994	0.248414	6.2505	3.486	1.166	29.15899	145.4926
1995	0.184499	6.3178	6.121	13.354	30.90678	134.709
1996	0.256553	6.5007	13.157	0.919	26.48169	118.0606
1997	3.358748	6.8817	3.543	-6.42	28.69452	117.4801
1998	3.334133	7.5111	-4.045	3.6	36.48495	132.5177
1999	0.908733	8.1426	6.042	4.772	37.15874	72.35989
2000	1.633506	8.2	5.927	6.159	32.53255	66.92552
2001	4.24476	8.42	7.418	-8.238	38.72523	69.8046
2002	3.248073	8.543	1.634	1.654	40.10895	83.46198
2003	5.392123	8.581	-2.099	17.762	45.4999	84.43963
2004	5.380416	8.635	11.729	3.221	54.31348	64.83127
2005	2.137801	8.652	12.644	11.656	55.76592	49.80031
2006	3.568235	8.681	11.539	13.558	49.52742	14.53446
2007	1.126471	8.794	11.795	17.245	49.055	13.14917
2008	0.400997	9.244	11.187	44.371	48.64457	10.51625

2009	0.682729	10.4205	10.041	8.479	38.60535	16.52478
2010	0.963031	12.8909	10.567	8.134	48.89062	24.34105
2011	1.960737	16.1178	11.386	33.232	54.95598	26.93491
2012	0.643173	17.2536	8.7	24.132	46.72739	24.16014
2013	2.820412	18.1947	9.821	8.071	42.97979	26.41075
2014	3.335688	19.0748	10.347	7.377	44.48983	30.46997
2015	4.074364	20.0956	10.4	10.1	40.53041	32.60882
2016	5.464246	21.1059	8	7.3	35.96153	32.59372
2017	4.986451	22.4137	10.9	9.9	32.68227	32.97116