ADDIS ABABA UNIVERSITY

FACULTY OF BUSINESS AND ECONOMICS

DEPARTMENT OF BUSINESS ADMINISTRATION

FACTORS AFFECTING THE INFLOW OF FOREIGN DIRECT INVESTMENT IN ETHIOPIA

BY

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ADVISOR:

SEWALE ABATE (Ph.D.)

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STATEMENT OF DECLARATION

I, the undersigned, declare that the study presented in this thesis entitled "**Factors Affecting the Inflow of Foreign Direct Investment in Ethiopia**" is original work of my own. It hadn't been presented for partial fulfillment for any educational qualification at this university or any other and in any projects by any means, and all the resources and materials used for this thesis had been accordingly acknowledged.

_____ _____

Ermiyas Mekonnen Date

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ABSTRACT

This study aims to examine the determinants of inward FDI in Ethiopia over the period 47 years ranging from 1974-2020. Foreign direct investment (FDI) is one of the key sources of capital inflows and driver of economic growth and development in many developing countries. Ethiopia has recorded high level of success in mobilizing huge investment to support its economic growth. Ethiopia is one of the fastest growing countries in the world. This paper examines how macroeconomic stability, market size, trade openness, and infrastructure affecting FDI inflows in Ethiopia. The Unit root test and Cointegration approach are applied to ensure that the regressions are not spurious. The empirical results support the hypothesis of the study that, inflation rate is found to have negative impacts on FDI inflows and the exchange rate, debt, trade openness, and infrastructure have positive effects on FDI inflows. However, foreign debt unlike the research hypothesis has a positive impact on FDI and the real gross domestic product is a proxy for market size has negatively affected the inflow of FDI. Furthermore, the effects of inflation rate, foreign debt, market size and trade openness on inward FDI are statistically insignificant. But exchange rate and infrastructure are significantly affecting the inflow of FDI in Ethiopia. Finally, the paper suggests that corresponding efforts should focus on strengthening the inflation rate, exchange rate, trade openness and infrastructure to ensure stability in macroeconomic performance, which enhances the confidence of foreign investors investing in Ethiopia.

Keywords: Foreign Direct Investment, FDI determinants, Time-series analysis.

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LIST OF ACRONYMS

ADF = Augmented Dickey Fuller

ECT = Error Correction Term

EIA = Ethiopian Investment Agency

EXR = Exchange Rate

FDI = Foreign Direct Investment

FOD = Foreign Debit

GDP = Gross Domestic Product

GFCF = Gross Fixed Capital Formation

IMF = International Monetary Fund

In = Log

INR = Inflation Rate

MES = Macro Economic Stability

MNCs = Multi-National Companies

MOFED = Ministry of Finance and Economic Development

OECD = Organization for Economic Cooperation and Development

OLS = Ordinary Least Square

RGDP = Real Gross Domestic Product

UN = United Nation

UNCTAD = United Nations Conference on Trade and Development

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CHAPTER ONE: INTRODUCTION

1.1. Background of FDI

Domestic saving is one of the sources of investment for the economic development of any country in the world. A study conducted in China by Gregory C. Chow in 1993 evidenced that countries that had made the sustained accumulation of fixed capital have been able to achieve higher and sustained economic growth and development than other countries. Capital accumulation can only be possible through sufficient domestic savings. Inadequate savings and investment severely restricted the economic development in Sub-Saharan Africa (Wollasa. L.Kumo, 2011). Foreign direct investment has grown since the early beginning of the 1980s when the world market becomes more competitive. Developing countries are becoming attractive investment destinations that can offer a range of incentives for investors. FDI has grown as the most important form of international capital transfer over the past decades. Between 1980 and 1990, world flows FDI defined as cross-border expenditures to acquire or expand corporate control of productive assets-have tripled (Froot, 1993). Large domestic markets found to be one of the factors contribute to attracting inward FDI especially if foreign firms wish to sell their products in the host nation. Increase in population and economic growth of African countries has been an incentive for foreign firms to make market seeking investments in the continent. The study shows by Asiedu in 2006, large local markets are significant in attracting FDI into Sub-Saharan Africa. African countries should ensure that they have strong economic health, openness to trade, clear investment policy and good infrastructure to attract inward FDI.

World Bank, IMF, and UNCTAD confirmed Ethiopia is one of the top-performing economies in the world in 2017 and 2018. Similarly, in the World Economic Outlook (2017), the IMF indicated that Ethiopia remained a star performer in African continent in 2017 (Ethiopian Investment report, 2017). In September 2019, the Ethiopian Government unveiled its "Homegrown Economic Reform Plan" as a roadmap to implement comprehensive macroeconomic, structural, and sectoral reforms, with a focus on improving the contribution of the private sector in the economy and attracting additional foreign direct investment. The three-year economic reform plan gives priority in five sectors: mining, ICT, agriculture, tourism, and manufacturing. To support the reform agenda IMF approved a three-year, 2.9

billion U.S. dollar. The program seeks to reduce public sector debt, controlling the inflation, and improvement on exchange rate regime (UNCTAD the world investment report, 2021).

Ethiopia's economy has challenged from 2019 to 2021 by the COVID-19 pandemic, a severe locust invasion, local conflict in several parts of the country, political tensions, and conflict in the Tigray region. The IMF forecasts economic growth to slow to 2 % points in Ethiopian fiscal year 2020/21. The decline in agricultural output combines with the negative impact on trade, tourism, investment, and consumption spending resulting from the economic instability brought by the pandemic and political unrest. Still, Ethiopia's rank in the World Bank's Ease of Doing Business Index was 159 out of 190 economies in 2020 (UNCTAD Trade and Development Report, 2020).

The world investment report confirmed that in 2020 FDI in East Africa dropped to $6.5 billion, a 16% decline from 2019. Particularly in Ethiopia, despite registering a 6% reduction in inflows to $2.4 billion, considered as more than one-third of foreign investment to the subregion. Even if the Ethiopian economy suffered at the time of pandemic, especially in hospitality, aviation, and other services, it grew 6.1%. The manufacturing, agriculture, and hospitality industries contribute the highest portion of investment in 2020. At the time of pandemic, the Government initiated a program creating a market opportunity for foreign investment manufacturing of personal protective equipment (PPE), and several Chinese firms have already started production (UNCTAD the world investment report, 2021).

The Government of Ethiopia's (GoE) designed a strategy that the country economy should grow at an annual growth rate of more than 10 percent for no less than two decades if the country is to attain the projected middle-income country status by the year 2025. However, low domestic savings as a proportion of GDP and inadequate domestic capital is not enough to generate the required level of economic growth. To overcome this problem the Ethiopian government has undertaken significant measures which include opening several economic sectors to attract foreign direct investment. The government has issued general investment codes and its consecutive amendments to attract FDI in proclamations 270/2012, 769/2012, 312/2014, 849/2014, 474/2020, and 1180/2020. The investment codes were revised over five times in the last thirty between 1974 to 2020 to make it more transparent, attractive, and competitive. In 2020 the Ethiopian Investment Commission (EIC) has restructured by proclamation no. 474/2020 and 1180/2020 with the view of promoting more FDI and

improving the service it renders to investors. The government made a broad range of policy reforms, including liberalizing the foreign trade policy, decentralizing political and economic power, devaluing the national currency, and deregulating domestic prices. In 2021, the Ethiopian government revised its 62 years old commercial code, enacted a new investment regulation, began steps to sell two telecom spectrum licenses to foreign operators, and developed a financial sector liberalization roadmap.

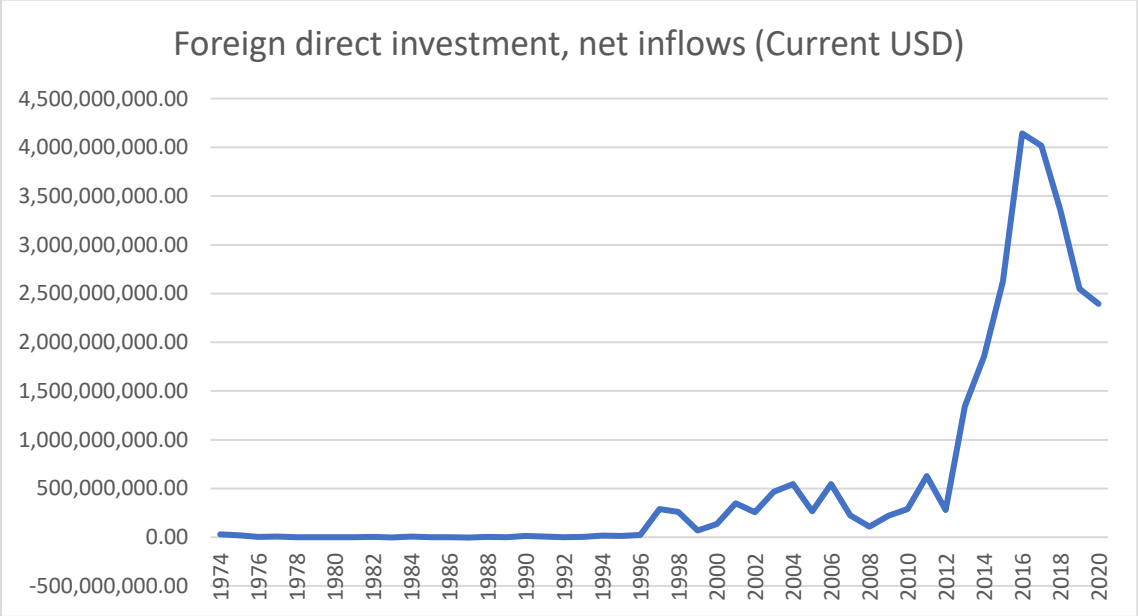
1.2. Statement of the problem

Foreign direct investment has a key role in the growth of capital deficient developing countries. FDI is not only a stable source of capital inflows, but it also helps in technological transfer and employment generation, and international trade relationships, to induce a competitive business environment and enhance development. The inflow of foreign direct investment increases countries all over the world in the last few decades. However, the share of African countries from global foreign direct investment was exceptionally low.

According to the Global Economic Prospect, in 2021 Ethiopia's population was 115 million people, and it is the second most populous nation in Africa after Nigeria. In 2020/21, Ethiopia was the fastest-growing economy in the region, with a 6.3 % growth. However, it is also one of the poorest countries in the world, with a per capita gross national income of $ 890. Ethiopia plans to reach the lower-middle-income category by 2025. Since 2020, the country's economy has been among the fastest growing in the world, at an average of 9.5 % per year (Global Economic Prospect, 2021). Ethiopia’s gross domestic savings as proportion of GDP is low, and it is unlikely to achieve this growth rate by mobilizing the meager domestic savings. The existing government of Ethiopia has understood the inadequacy of the domestic investment and opened several commercial areas to foreign investors. The government has also declared several investment incentives, including tax breaks, duty free import of capital equipment and tax exemption for export goods to encourage foreign investment. Furthermore, Ethiopian Investment Commission has established to service investors and streamline the investment procedures.

In Ethiopia, several investment opportunities exist in many sectors, such as manufacturing, import-substitution, agriculture, mining, and service sectors. The country exports agricultural products, coffee, pulses and spices, flower, and fruits, vegetables, khat, and live animals. The

share of manufacturing goods, such as textile, garments, leather, beverage, and food processing products, has increasingly become an important part of its export profile. In addition, the country has varied its export trade portfolio with a rising contribution of mining, and electricity. Exporting electricity to grow significantly in the next few years and by massive investment in national production capacity and cross-country network grids. On the other hand, Ethiopia primarily imports food staffs, textile, fuel oil and manufactured goods. While both exports and imports of goods and services have increased during the last five years, the less than $3.2 billion worth of exports recorded each year between 2011- 2015 falls significantly short of the $5-8 billion targets set on GTP I and II (Ethiopian Investment report, 2017). Ethiopia's foreign direct investment increased from 2013 – 2017 and experienced a decline in 2018, 2019, and 2020.



Source: World Bank

Figure 1.1 Foreign Direct Investment, Net Inflows (USD)

Even if the country has high potential for growth, the challenges remain vast. Ethiopia's imports in the last four years have experienced a slight decline, in large part due to a reduction in public investment programs and a severe foreign exchange shortage. Export performance remains weak, as the country struggles to develop exports beyond primary commodities like coffee, gold, and oil seeds. The overvalued exchange rate and illegal trade also have slowdown official exports. The acute foreign exchange shortage and the absence of capital markets are suffocating private sector growth. Companies regularly face longer time span for importing

goods and dispatching exports due to logistical bottlenecks, corruption, and high land-transportation costs. Ethiopia is not a signatory of major intellectual property rights treaties (Investment Climate Statement Ethiopia, 2021).

Many studies conducted in recent years look for factors affecting FDI in many parts of the world. Singh and Jun (1995) empirically analyzed political risk, business conditions, and macroeconomic variables that have influenced FDI flows to developing countries. Blomstrom and Kokko (2003) studied the reason behind providing incentives to attract FDI. Miyamoto (2003) studied the role of human capital, and skills development are attracting FDI and influencing the impact of FDI. Banga (2003) reviewed the determinants and trends of FDI inflows to Asia. Chan and Gemayel (2004) have investigated the risk of instability and pattern of FDI in the Middle East and North Africa Region. Nonnenberg and Mendonca (2004) explored determinants of FDI in developing countries. Onyeiwu and Shrestha (2004) look over determinants of FDI in Africa. Coupet and Mayer (2005) inquiry the institutional FDI and re-evaluated the role of the quality of institutions on FDI.

Getinet and Hirut (2006) studied the nature and determinants of FDI in Ethiopia from 1974 to 2001. This paper's findings show that the growth rate of real GDP, export orientation, and liberalization has a positive impact on FDI. Moreover, macroeconomic instability and poor infrastructure have a negative impact on the inflow of FDI. Mekonnen (2014) trade openness, inflation rate, market size, infrastructure and human capital are factors affecting the inflow if FDI in Ethiopia. Shiferaw (2014) study aimed at finding out the contributions of FDI to local employment opportunity, revenue generation to local authority, technology transfer and linkage with domestic investments. Tadesse (2016) investigates the possible factors like GDP growth, trade openness, domestic credit, infrastructure, inflation, and external debt that determine the inflow of Foreign Direct Investment in Ethiopia. Dereje (2017) assess the effect of market size, exchange rate, physical infrastructure, trend openness, school enrollment rate are determinants of FDI inflows in Ethiopia. Abebaw (2021) analyze the nexus between FDI, domestic investment and economic growth in Ethiopia by segregating domestic investment in to private and public investment. Getasew (2021) examines effects of macroeconomic, political, and property rights uncertainties on FDI.

This paper used secondary data from 1974 – 2020, helps to filling the periodic gaps to the nearest fiscal year and incorporate the current economic situation of Ethiopia. In addition, the

researcher tries to investigate the effect of separation of Eritrea from Ethiopia on FDI. From a list of independent factors affecting the inflows of foreign direct investment, the researcher studies the macroeconomic stability (proxy of inflation rate, exchange rate, and foreign debt), market size (proxy of Real GDP), trade openness and infrastructure (proxy of gross fixed capital formation). The findings of this study will contribute to the academicians and policymakers in adding knowledge to the field of study.

1.3. Research Questions

The main research question for this study is given below:

1. How does the macroeconomic stability of Ethiopia affect the flows of FDI to Ethiopia?
2. Does the Ethiopia market size attract FDI?
3. How trade openness of Ethiopia affects the inflows of FDI to Ethiopia?
4. Does the country infrastructure affect the inflow of FDI?

1.4. Objective of the Study

1.4.1 General objectives of the study

The main objective of this study is to identify and evaluate factors that determine the inflows of FDI in Ethiopia for the period 1974-2020 G.C.

1.4.2 Specific objectives of the study

- Evaluate the effect of macroeconomic stability to the inflows of FDI to Ethiopia.
- Investigate the market size of a country affects the inflows of FDI to Ethiopia.
- Explain the effect of trade openness to the inflows of FDI to Ethiopia.
- Analyze the challenges of infrastructure on the inflows of FDI to Ethiopia.

1.5. Significance of the study

The first significance of this study is that it narrows the limitations of the determinants of the FDI. One of the limitations of previous studies is that they focus on analyzing a single or two factors that affect the inflow of FDI. Yet this study incorporates the main determinants of FDI that create an opportunity to have a comprehensive knowledge of the subject. The second limitation is that international business studies in general and FDI studies in particular focus on mere statistical analysis only. However, this study highly appreciates the significance of the qualitative judgments. The third limitation is that the studies conducted in the Ethiopian case used a single equation OLS estimation which is difficult to get unbiased results having small observations of just less than 30. This study used an OLS model which enabled us to get unbiased results having these small observations.

1.6. Scope of the study

The scope of the study delimited by its title, conceptually, geographically, duration, and methodologically which described as follows. The geographical scope of the study delimited to the political boundary of the Federal Democratic Republic of Ethiopia, FDRE, declared in 1991. Areas and countries other than this boundary are not the subjects of this study. The duration covered under this study delimited to the period between 1974 and 2020 only. Investment factors that happened during this period are not the subject of this study.

1.7. Limitation of the Study

All studies faced with various limitations and this study is no exception to the phenomena. The limitations of the study include the study used only four main variables such as macroeconomic stability, market size, trade openness and infrastructure in analyzing determinants and impact of FDI which can limit the strength of the decision as compared to using more variables. The researcher could not find sufficient data, especially in the past ten years, on the political stability of Ethiopia and skilled human labor or human capital to study its effect on foreign direct investment. In drawing the sample size, the researcher employees a 10% margin error. In case, the results may not be dependable as the one that can use 5% and 1% margin errors. At various stages, the study may suffer due to the inadequacy of time series data from related agencies.

1.8. Organization of the Study

The first chapter deals with the introduction, and chapter two discusses the available literature on FDI, Chapter three presents the data source and methodology part followed by the empirical result and discussion in chapter four. In the last chapter, we will forward conclude and policy implications.

CHAPETR TWO: LITRATURE REVIEW

This chapter provides a summary of conceptual and theoretical literature review, empirical literature review, summary of literature gap and conceptual framework on foreign direct investment (FDI).

2.1. Conceptual and theoretical Literature Review

2.1.1 Conceptual Literature Review of FDI

Foreign direct investment (FDI) is defined as a cross-border investment by which an enterprise based in one country establishes an interest of at least ten percent of value as well as a significant influence over an enterprise resident in another country (OECD, 2019). The World Bank defined Foreign Direct Investment as the net inflows of investment to acquire a lasting management interest of at least 10 % or more in an enterprise operating in an economy other than the investor (World Development Indicators, 2012). According to the IMF, FDI is an international transaction that reflects the objective of a resident in one economy obtaining a lasting interest in an enterprise resident in another economy. The lasting interest implies a long-term relationship between direct investors, direct investment, and a significant degree of influence by the investor on the management of the enterprise. Direct investment is the direct investor has owned 10 percent or more of the ordinary shares or voting power of a business established abroad (OECD, 2008). In some countries, the threshold value for foreign equity ownership differs, which they take as evidence of a direct investment relationship. The level of participation in an enterprise depends on direct investor controls on the management of the FDI involved. FDI is a key driver of global economic integration. FDI can provide financial stability, promote economic development, share technological advancement, create job opportunities, and enhance the well-being of societies.

Types of FDI

FDI can be divided from the viewpoint of its direction, source country, host country policy, and mode of operation.

1. **FDI from Its direction:** In terms of direction, FDI can be divided into inward and outward. Inward FDI is the value of foreign capital invested in and net loans to enterprises resident in the reporting economy. It is a foreign capital invested in local resources. Inward FDI is encouraged by tax exemption, financial assistance, low-interest loans, and the lifting of a restriction. Outward FDI is the value of cross-border direct investment transactions from the reporting economy. It is also called direct investment abroad or local capital invested in foreign resources.

2. **FDI from the source country:** When we see the type of FDI from investors' viewpoint, it can be divided into vertical, horizontal, and conglomerate FDI (Caves, 1971). Vertical FDI occurs when a multinational company acquires an operation that either supplies raw material or distributes final products. It also takes place when the multinational portions the production process internationally, locating each production stage in the country where it can produce at the least cost. Horizontal FDI occurs when a company introduces a similar operation or business model in another country. Horizontal FDI is undertaken for horizontal expansion to produce the same or similar goods in the host country as in the home country. Conglomerate FDI is where investors acquire in a completely different industry. It is not linked in any direct way to the current business. Conglomerate FDI, can be used horizontally and vertically (Mossa, 2002).

3. **FDI from the host country policy:** Depending on the host country's economic policy there are three types of FDI. These are import substitution, export-oriented, and government-initiated. Import substitution is the idea that discourages imports of manufactured goods that can help an economy by increasing the demand for locally produced goods. Import substitute FDI involves the production of goods previously imported by the host country (Moosa 2002). Export-oriented FDI is the type of investment in which a country seeks economic development by opening itself up to international trade. This type of economic policy targets to speed up the industrialization process of a country by exporting goods for which the nation has a comparative advantage (Reuber, 1973:73) (cited by Henok 2014). The government initiated FDI involves government policy to attract more FDI to eliminate its balance of payment deficit (Moosa 2002).

4. **FDI based on mode of operation:** According to Markusen and Markus (1999) modes of operation, they categorized FDI into licensing, joint venture, and wholly subsidiary.

Licensing FDI is a form of contracting its technology through licensing to a domestic firm in exchange for a fee. In this way, the parent company reduces the business risk of operation by licensing their business to local producers. Joint venture FDI is started investment to reduce the risk of information gap of the host country, having to pay a higher fixed cost of operation, and incorrectly predicting the host country's demand for its products. In this business, the FDI firm benefits from the knowledge of the industry, the consumer network, and distribution channels in the host market from their affiliates. According to Saggi (2002), domestic affiliates also benefit from managerial skills and marketing techniques from joint venture FDI. Wholly owned Subsidiary FDI in which an investment is acquired when FDI companies fear that their proprietary assets might spill over and get adopted by their domestic affiliates in the foreign market.

5. **Expansionary and Defensive FDI:** Expansionary FDI seeks to exploit a business-specific advantage in the host country. This kind of FDI benefited the multinational companies by increasing sales in the host and an investing country. Defensive FDI seeks cheap labor or materials to reduce the cost of production (Chen and Ku, 2000).

2.1.2 Theoretical Literature Review of FDI

Several FDI theories attempt to explain why MNCs invest in FDI. Why do the MNCs choose one country in preference to another to locate their foreign business activity, and why do they choose a particular entry mode. These theories also explain why some countries are more successful than others in attracting FDI. Thus, some of the theories try to explain outward FDI and others try to explain inward FDI (Moosa, 2002). Theories of FDI may be classified under the following headings: Theories assuming perfect markets, Theories assuming imperfect markets, other theories of FDI and Theories based on other variables. This classification has been suggested by (Moosa, 2002) and Lizondo (l99l) following Agarwal (l980). Moreover, theories of FDI have classified according to other criteria. For instance, some researchers classify FDI theories from neoclassical theories to the Marxist theory of imperialism. Others may also be classified based on the factors determining FDI are macro, micro, or strategic factors. These factors can help clarify FDI reviewed under the various theories or hypotheses in this research section. I shall prefer to follow Agarwal (l980) by referring to these theories as

hypotheses because there is not one but several competing theories with varying degrees of power to explain FDI.

2.1.2.1 Theories Assuming Perfect Markets

There are three hypotheses fall under this heading: (I) the differential rates of return hypothesis, (II) the diversification hypothesis, and (III) the output and market size hypothesis.

I. The Differential Rates of Return Hypothesis

This approach argues that FDI is a capital flowing from low rates of return countries to high rates of return countries. This proposition follows the idea that firms equate expected marginal returns with the marginal cost of capital. There is an encouragement to invest abroad when expected marginal returns are higher in host countries. This theory gained wider acceptance in the late 1950s when U.S. FDI in Europe increased. At that moment, after-tax rates of return of U.S. subsidiaries were consistently above the rate of return on U.S. domestic. However, this relationship proved to be unstable. During the 1960s U.S. FDI in Europe continued to rise, although rates of return for U.S. subsidiaries in Europe were below rates of return on domestic businesses (Lizondo, 1993). The rationale for this hypothesis is that firms considering FDI equate the marginal return on and the marginal cost of capital. The theory assumes risk neutrality, making the rate of return the only variable upon which the investment decision depends (Moosa, 2002).

II. The Portfolio Diversification Hypothesis

Expected returns cannot provide an acceptable explanation of FDI, to be realistic it must include the role of risk. One approach explained the share of FDI going to a group of countries by relating to the average return on those investments and the risk associated with those investments. Another line of inquiry was to ascertain whether large firms with more extensive foreign activities showed small fluctuations in global profits and sales (Lizondo, 1993). The empirical tests offered weak support for the portfolio diversification theory. In some cases, results show that were favorable for a group of countries failed to hold for individual countries. In other way, the results were not considerable or were more coherent with alternative theories.

The lack of empirical support may be due partly to the difficulties associated with measuring expected profits and risk (Hufbauer, 1975) and (Agarwal, 1980).

III. The Output and Market Size Hypothesis

It is the other approach worth reporting related FDI to some measure of output of the multinational firm in the host country. The output approach considers the relevant variable to be output (sales), the market size approach uses the host country's GNP or GDP, which considered as a proxy for potential sales. The relevance of output for FDI can be derived from models of neoclassical domestic investment theory. The relevance of the host country's market size has been postulated rather than derived from a theoretical model. Despite this lack of explicit theoretical backing, the market size model has been popular, and a variable representing the size of the host country appears in many empirical papers (Agarwal, 1980).

2.1.2.2 Theories Assuming Imperfect Markets

The theories outlined in the earlier section did not make any specific hypothesis regarding market imperfections or market failures. Hymer (1976) was the first analyst to point out that the structure of the markets and the characteristics of firms should play a vital role in explaining FDI. Kindleberger (l969) refined and publicized Hymer’s ideas. Martin (l99l) uses cross-sectional analysis to confirm the importance of market structure in determining FDI in the USA. Several hypotheses fall under this heading and will be discussed in turn (I) Industrial organization, (II) Internalization of decisions, (III) Eclectic theory, (IV) Product life cycle, and (V) Oligopolistic reactions.

I. Industrial Organisational Theory of FDI

Hymer's (1976) revolutionary study on multinational companies draws attention to the role of international companies as global industrial organizations. Hymer contributes to shifting the attention away from neoclassical financial theory. He argued that the need to exercise control over operation is the motive for FDI than the mere flow of capital investment. The capital investment facilitates the establishment of FDI. He states that for firms to engage in cross-border activities, they must possess monopolistic advantages. The advantages of foreign company ownership of a patent are expertise, managerial skills, and so on, and these

advantages are unavailable to local companies. Hymer's argument relies on the presence of market imperfections. The difficulty of marketing and pricing expertise markets a product may not exist. If they exist, they may involve high transaction costs or time lags. It would be more efficient for the company to hold in direct investment than exporting or licensing. FDI will give power to multinational companies to control and exploit their full power. Hymer's argument led the way to the development of internalization theory. According to this theory, the firms internalize their activities whenever there are inefficiencies in dealing with the external market, and FDI occurs when this internalization involves operations across countries (Harrison, et. al. 2000).

II. The International Model of Uppsala School

This model introduced by Johnson and Wiedersheim-Paul (1975) from the University of Uppsala (Sweden) states that, a multi-national corporation (MNC) does not commence its activities by making gigantic FDIs. First it operates in the local market and then progressively expands its activity overseas. This gradual transformation is known as the establishment chain. The establishment chain is contained four stages. During the first stage, the MNC produces and sells its goods and services at home. It does not undertake any regular export activity because of a lack of expertise and a tendency to avoid risk. In the second stage, the firm establishes its international involvement by exporting its goods and services to neighboring countries. The firm enters in the third stage it begins establishing sales subsidiaries. The firm may decide to start selling in small markets that are like the domestic ones or in larger markets. The fourth stage is the setting up or acquisition of manufacturing facilities abroad. The establishment of manufacturing facilities abroad has been influenced by several forces, such as psychic distances, tariffs, non-tariff barriers, transport costs, etc. Following that, it is hard to observe any correlation between manufacturing establishment and psychic distance.

III. Dunning’s Eclectic Theory of FDI

John Dunning developed an eclectic theory of FDI called the OLI paradigm, the O, L, and I refer to ownership advantage, location advantage, and internalization conditions, respectively. Operating in a foreign country market has many costs including a lack of knowledge about the local market, culture, legal, and many others. Therefore, foreign firms should have some benefits that can offset these costs. The Ownership, Localization, and Internalization model of

Dunning (1980) is the first theory to provide a more comprehensive analysis of the determinants of FDI, and it is the most referenced one by authors writing on FDI. The principal hypothesis of the paradigm of international production is when three interrelated conditions are satisfied. These are ownership, localization, and internalization advantages. The three advantages as follows

1. **The ownership-specific advantages** Ownership advantage is a firm-specific advantage that gives power to firms over their competitors and includes advantages in technology, management techniques, easy access to finance, economies of scale, and capacity to coordinate activities.

2. **Location advantages** are country-specific advantages. Multinational Companies fully reap the benefit of firm-specific advantages and should consider the location advantage of the host country. It includes accessibility and low cost of natural resources, adequate infrastructure, and political and macroeconomic stability. Therefore, the location advantage of the host country is one essential factor that determines the investment decision of MNCs.

3. **Internalization advantages** is multinational companies' ability to internalize some activities to protect their exclusive right of tangible and intangible assets and defend their competitive advantage. Accordingly, all the three conditions must meet before transnational companies open a subsidiary in a foreign country.

If the three advantages are encountered, firms rely on exports, licensing, or the sale of a patent to service foreign markets. The generalized predictions of the eclectic theory can only attract a foreign market through FDI if it can exploit consistently the three advantages. Dunning (1993) mentioned that the principal objective of firms in accepting foreign production is to advance their long-term profitability. In addition to profitability, firms may invest the FDI as part of their corporate strategies. For instance, firms may try to spread or reduce investment risks and rival competitors' actions. Dunning (1993) identified three intentions for FDI

1. **Market seeking FDI:** refers to FDI that focuses on serving the local and regional market. The Host country characteristics that can attract market-seeking FDI include the market size of the host country, per capita income, and economic growth potential of the market.

2. **Resource/asset seeking FDI:** refers to FDI targeting to acquire resources or capital assets not available in the home country. Such resources include natural resources, raw materials for manufacturing, productivity, and availability of skilled or unskilled labor.

3. **Efficiency seeking FDI:** This kind of FDI is accepted when the firm can gain from the governance of geographically dispersed activities, especially in the presence of economics of scale and diversification of risk.

IV. Vernon's Product Life Cycle Hypothesis

Vernon was the first who introduce the product life cycle theory in 1966. FDI decision depends on the product life cycle of a product from its production and sold in the home market. At the early stage, the product had not standardized, and the unit costs and final specifications were not uniform. As the demand for the product increases, the product becomes homogenized. The product is exported to other countries when the home market is saturated. The firm starts looking to open subsidiaries in locations where the cost of production is lower, the competition from the rival firms is intense, and the product has reached its maturity. Therefore, FDI depends on the stage in the product lifecycle that follows the maturity stage (Dunning, 1993). Vernon's product life cycle theory is a dynamic theory since it considers changes over time and the product life cycle. However, the hypothesis is not confirmed by empirical evidence, as some multinational companies start their operations at home and abroad at the same time (Chen, 1983).

V. The Oligopolistic Reactions Hypothesis

Knickerbocker (1973) suggested that, in an oligopolistic environment, FDI by one firm initiate a similar action by other industry-leading firms to maintain their market shares. In their assessment of the motives for Japanese outward FDI, Kreinin and Plummer (1999) conclude that securing market share is the most salient motivation. Lall and Streeten (l977) argue that in oligopolistic competition, none of the participants can afford to ignore what the others are doing. The first move has been prompted by government action or something else, but, as Lall and Streeten argue, the subsequent pattern cannot be interpreted in terms of the profit-maximizing behavior of an individual firm independently of the actions of rival firms.

2.1.2.3 Other Theories of FDI

Four theories are stated under this headline: (I) the internal financing hypothesis; (ii) the currency area hypothesis; (iii) the hypothesis of diversification with barriers to international capital flows; and (iv) the Kojima hypothesis. These hypotheses will be discussed below.

I. The Internal Financing (Liquidity)

Internal financing refers utilization of incomes generated from a subsidiary profit to finance the expansion of FDI. This hypothesis suggests that MNCs commit a modest amount of their resources to their initial direct investment, and expansion has financed through reinvesting the profits generated from operations in the host country. Therefore, it implies a positive relationship between internal cash flows and investment outlays. According to Froot and Stein (l99l), external financing is more expensive than internal financing in capital markets. The hypothesis seems more appropriate for explaining FDI in developing countries for two reasons: (I) the presence of restrictions on the movement of funds; and (ii) the rudimentary state and inefficiency of financial markets.

II. The Currency Areas

Aliber (l971) put forward a hypothesis that attempts to explain FDI in terms of the relative strength of various currencies. This hypothesis assumes that firms that belong to a country with a strong currency tend to invest abroad, while firms that belong to a country with a weak currency do not have such a tendency. This hypothesis has been based on capital market relationships and the market's preference for holding assets denominated in strong currencies. Aliber can be tested empirically by examining the relationship between the value of the currency and the flows of FDI. If the hypothesis is valid, the strong currencies are associated with FDI outflows, and the weak currencies are associated with FDI inflows. (Agarwal, l980). There is a problem related to this hypothesis. According to Lizondo (l99l), direct investment in countries with the same currency and the concentration of FDI in a few industries.

III. Diversification with Barriers to International Capital Flows

Agmon and Lessard (l977) argue that diversification with barriers to international capital flows execute through the following circumstances. First, there must exist barriers or costs to capital flows that are better than a direct investment. Second, investors must understand that multinational firms provide diversification opportunities. They tested the theory that stock prices of multinational firms with relatively large international operations are more closely related to the rest-of-the-world market factors and less to the domestic-market factors than stock prices of firms that are domestic. Their results were consistent with the second suggestion. Errunza and Senbet (1981) developed a model whereby investors demand diversification, and multinational companies supply diversification is an activity that is shown positively in the price of their stocks.

IV. The Kojima Hypothesis

Kojima (l985) thinks that direct investment transfers capital, technology, and managerial skills from the source country to the host country. Kojima classified FDI into two types. The first is trade-orientated, which produces excessive demand for imports and an excessive supply for exports at the original terms of trade. This kind of FDI leads to capital gain in both countries. Furthermore, it would indicate investment in the source county has a comparative disadvantage. Trade-orientated FDI encourages trade and industrial restructuring in both countries. The second kind is the anti-trade-orientated FDI, which is the exact opposite of trade-orientated FDI. Therefore, anti-trade orientated FDI has an unfavorable effect on trade and promotes unfavorable restructuring in both countries. Kojima argues that Japanese FDI has been trade-orientated, but USA FDI has been anti-trade oriented. Therefore, Kojima's hypothesis is based on balancing trade and FDI.

2.1.2.4 Theories Based on Other Factors

In theory, four other factors have been used to explain FDI. These are political instability, tax policy, trade barriers, and government regulations.

I. Political Instability

Lack of political stability discourages the inflows of FDI. Political risk arises because of unexpected changes in the legal and economic framework in the host country. For example, a decision made by the host government to impose restrictions on capital return to the investor's home country will have an unfavorable effect on the cash flows received by the parent company. Ramcharran (l999) used the Euromoney political risk index to investigate the effect of political risk on FDI for twenty-six countries.

II. Tax Policies

Domestic and foreign tax policies affect the incentive to attract FDI and how it has financed. Jun (l990) identifies three channels through which tax policies affect the decisions taken by multinational companies. First, the tax treatment for income generated by subsidiaries influences the net return on FDI. Second, the tax treatment for profit generated at the parent company affects the net profitability of domestic investment and the relative profitability of the domestic and foreign investment. The third is tax policies that influence the relative cost of capital of domestic and foreign investment. Numerous empirical studies examine the effect of international taxation on FDI. Hines and Rice (l994) analyzed the influence of taxation on the cross-sectional distribution of capital and labor employed by US companies in their FDI projects. Carlton (l983) found that high tax rates do not appear to discourage new firms. Wasylenko (l997) reports little support for the view that state taxes influence business location within the USA.

III. Trade Barriers

FDI has been established to avoid trade barriers such as tariffs because FDI can be an alternative source of trade. A real-life example is Honda's establishment of production facilities in Ohio to avoid the tariffs and quotas imposed by the US government. The increase in FDI in countries like Mexico and Spain is attributed partly to circumventing the trade barriers imposed by NAFTA and the EU (Eun and Resnick, 2015). Moore (l993) and Wang and Swain (l995) used a trade-weighted tariff rate to represent trade barriers, but it turned out to be an insignificant determinant of FDI. However, Bajo-Rubio and Sosvilla-Rivero (l994) found a significant effect of the tariff rate on FDI. Hufbauer (l994) used the ratio of trade over GDP as a measure of economic openness. Yang (2000) used a similar measurement for economic openness and found FDI flows negatively influence the degree of economic

openness, suggesting that FDI is indeed used to circumvent trade barriers. Lipsey (2004) infer that countries that have better trade openness provide and receive more FDI.

IV. Government Regulations

Most governments adopt policies that have targeted both encouraging and discouraging inward FDI by offering incentives and disincentives. Typically, they offer incentives, such as financial and tax incentives as well as market preferences, while simultaneously placing restrictions on the activities of multinational companies. Disincentives include several impediments that may range from the slow processing of the required authorization to the outright prohibition of foreign investment in specific regions or sectors. The empirical studies surveyed by Agarwal (l980) show that the incentives have a limited effect on the level of FDI, as investors base their decisions on risk and return considerations. Aharoni (l966) concluded that, at the initial stage of an FDI decision, the incentives do not consider by firms. According to Reuber (l973), the incentives may help, particularly for small firms with limited experience, but their overall impact on FDI is marginal at best. Bond and Guisinger (l985) investigate the effects of incentives on the location decisions of multinational companies.

2.1.2.5 The main factors determine the inflows of FDI

This section will explore various theories on the determinants of foreign direct investment. FDI theories can classified into three categories, Micro level determinants, Macro-level determinants, and strategic determinants. Micro-level determinants concern firm ownership-specific advantages such as product differentiation and firm size. Macro-level determinants of FDI emphasize the market size and the growth of the host country, measured by GDP, GDP per capita, GNP, or GNP per capita, as rapid economic growth may create large domestic markets and businesses. Strategic determinants indicate long-term factors such as protecting existing foreign markets, diversifying firms' activities, maintaining a position in the host country, and complementing another type of investment. (Ali. S. and Guo. W., 2005).

1. **Market Size:** The domestic market size is a fundamental determinant of FDI. The market size substitute by nominal GDP can be a valid indicator for determinants of FDI. From the early 20th century until the latest study, scholars have proven that market size is a significant determinant of FDI. The prosperity and development of a country can use as

other means of measuring the size of the domestic market. Most commonly, per capita income (PCI), which is an indicator of individual demand, used to measure the size of the local market. The GDP of a country and the population size can used as an indicator to measure the market size. However, if a firm focused on export and not on the market pursuing, the size of the domestic market will not be a significant determinant of FDI (Root and Ahmed, 1979).

2. **Economic development:** Economic growth is one of the significant determinants of FDI (Ang, 2008). Rapid economic growth creates large domestic markets and business opportunities for foreign firms to invest. Host countries with larger market sizes, faster economic growth, and higher economic development will attract more market oriented FDI. Economic growth is also a significant determinant of FDI in a time series analysis of Pakistan by Rehman et al. (2012). They found the determinants of FDI in Pakistan are economic growth and political stability. However, Simionescu (2016) stated in his study on the European Union countries that countries whereby higher GDP did not result in higher FDI.

3. **Inflation:** Inflation appears when prices rise and decrease the purchasing power of the currency. Inflation diminishes the real return on investment and firms' competitive advantage. Countries that engage in policies that reduce the inflation rate have a better chance of attracting FDI. A low and predictable inflation rate attracts long-term investment of both domestic and FDI. However, higher, and unpredictable inflation will decrease the inflow of FDI (Birhanu, 1998).

4. **Exchange Rate:** It is the price of one country money with another country money. Frequent and unpredictable changes in the exchange rate affect the inflow of FDI (Goldberg and Klien, 1997). Exchange rate devaluations have a double effect on variations in FDI. On the one hand the value of foreign investors' investment increases when the host country's currency devalued. On the other hand, frequent and continuous drops in the value of the host country currency would decrease FDI inflow (Accolley, 1997).

5. **Natural Resources:** Natural resources are the most significant resource that affects the inflow of FDI. From the 19th century up to the Second World War, 60% of the world's FDI depend on natural resources. The need to secure economic and reliable sources of

mineral and primary products for the (then) industrializing nations of Europe and North America, natural resources were the reason for the expansion of FDI (Dunning, 1993). Birhanu (1999) explained countries with sufficient natural resource deposits attract foreign investors, particularly those involved in natural resource exploitation.

6. **Infrastructure:** In the current globally competitive business environment, the absence and lack of efficient infrastructure mean high transaction costs for those already in business and a barrier to entry for new firms. Infrastructure growth has tremendous significance for the development of FDI. Efficient and adequate infrastructure implies better access to natural resources and potential markets. According to Birhanu (1999), the availability and reliability of telecommunication services, road and air transport services, and reliable water and electricity supply facilities have significant importance in attracting foreign investors and FDI.

7. **Human Capital:** To achieve better economic growth and to attract FDI, it required to have Large, efficient, and educated human capital. Countries with a substantial supply of cheap but skilled human labor attract more FDI. Labor-intensive companies, like manufacturing, reduce their variable overhead cost by recruiting cheap laborers. UNCTAD (2004) reported that the availability of cheap labor in China attracts multinational companies from Europe and the United States and brings job opportunities. In addition to cheap labor, the out-put labor ratio (labor productivity) also affects the inflow of FDI.

8. **Political Stability:** Political stability is an important condition for attracting investment. The inflow of FDI into a country can interrupted by internal or external political disputes and crises. Investors are less interested in investing in a country with high political instability. Without a stable political condition, a county's effort to create a more conducive environment for oversea investors cannot be fruitful. Political instabilities expected to decrease FDI because it increases uncertainty (Nega and Moges, 2002).

9. **Privatization:** Privatization provides a chance for multinational companies to invest in a country. Through privatization, countries generated substantial amounts of FDI in many developing economies. Good privatization policy has three main characteristics: political commitment, business orientation, and transparency. Large-scale privatization programs invite foreign investors that a government is taking steps to create a conducive environment

for FDI.

10. **Investment Incentive:** Investment incentives are FDI policy instruments used to attract foreign multinational companies. These include tax exemption, tax holidays, special tax allowances, and financial incentives such as low-interest loans and grants. Bilateral and multilateral investment treaties are also an incentive to increase investment (Nega and Moges, 2002). Investment incentives are highly affected by the host country's level of development (UNCTAD, 2010).

11. **Trade Openness:** Trade openness is described as the ratio of exports plus imports over GDP. Trade and market openness have historically gone together with better economic performance in countries at all levels of development, creating new opportunities for workers, consumers, and firms around the world and helping to lift millions out of poverty. The capital movement and the trade openness affect the flow of FDI. Trade restrictions, tariffs, and foreign exchange controls have been expressed the trade openness of a country (Tewodros, 2021).

2.2. Empirical Literature Review

Gholami (2006) observed from the period 1976 to 1999 based on ICT data available in developed countries the presence of ICT infrastructure attracts FDI. A higher level of ICT investment leads to a higher level of FDI inflows, but in developing countries, the direction of interconnection goes instead from FDI to ICT. Sekkat and Veganzones-Varoudakis (2007) indicate that infrastructure availability, openness, economic stability, and political conditions are critical for attracting FDI in South Asia, Africa, and the Middle East. In a study of southeast European Countries (SEECs), Dauti (2008) identifies the ICT infrastructure market as a vital factor that positively influences FDI inflows. Chowdhury and Mavrotas (2006), using data for three countries, Chile, Malaysia, and Thailand, the researchers find that GDP triggers FDI in Chile and not vice versa in the case of both Malaysia and Thailand. There is strong evidence of a bi-directional connection between GDP and FDI. Klein and Rosnegren (1994) and Jeon and Rhee (2008) strongly confirmed that relative capital significantly influences inward FDI.

Brahmasrene and Jiranyakul (2001) find that real income is a significant factor affecting inflows of FDI. Nnadozie and Osili (2004) find less strong evidence on the role of GDP per

capita on FDI inflow but GDP growth has a significant influence. The market size has played a vital role in FDI inflows (Barrell and Pain, 1996; Nigh, 1986; Anyanwu, 2011; Fedderke and Romm, 2006). Inflation as a proxy for economic instability has negatively affected FDI inflows (Nnadozie and Osili, 2004). Feils and Rahman (2008), trade openness has positively associated with FDI inflows. Human capital is another critical factor in determining labor-intensive and export oriented FDI. Noorbakhsh et al (2001) find human capital is significantly determining FDI inflows for thirty-six developing countries. Lewis (1999) also provides evidence that human capital in developing countries is a determinant of FDI. He notes that education, especially in a technical discipline, gives the necessary skills required by multinational companies.

Empirically studies conducted on the determinants of FDI in Africa argue that natural resources are the vital factor attracting FDI. In Africa, almost 40 percent of FDI has been in the primary sector, particularly the oil and mineral extraction business. Countries like Angola, Botswana, Namibia, and Nigeria have provided oil and mineral resources that have received FDI (Basu and Srinivasan, 2002). Morisset (2000) suggests in his study that, there is a high correlation between FDI inflows and the total value of natural resources. UNCTAD world investment report (2004) mentioned natural resource abundance is a common factor explaining much of the FDI inflows. Few African countries have also put particular attention to a favorable economic, social, and political environment for FDI. Countries like Mauritius and Seychelles have attracted FDI by tailoring their FDI policies through liberalization, export orientation, tax, and other investment incentives. In addition, some countries like Lesotho and Swaziland have attracted FDI because they are near South Africa, and investors wishing to serve the large market in South Africa have located their subsidiaries in these countries.

According to Musila and Sigue (2006) and Dupasquier and Osakwe (2006), infrastructure development is the main factor determining the inflow of FDI in Africa. However, Nnadozie and Osili (2004) find less convincing evidence on the role of infrastructure on FDI. Anyanwu and Erhijakpor (2004) point out that telecommunications infrastructures, economic development, and trade openness significantly increase the inflows of FDI to Africa. Root and Ahmed (1979) have also investigated the determinants of non-extractive direct investment inflows for seventy developing countries over the period of 1966-70. Their analysis focus on evaluating the importance of the economic, social, and political variables in explaining factors that affect FDI. Asiedu (2002) has also stated a similar position analyzing the influence of

natural resources, infrastructure, and trade openness on FDI flows to Sub-Saharan Africa. Her findings reveal that FDI in Africa does not affect by the availability of natural resources, but also the government policies played a significant role in attracting FDI through trade reform, macroeconomic improvement, political stability, efficient institutions, and infrastructure improvement. Other studies identified countries that have a higher degree of trade openness invite more FDI. Chakrabarti (2001) finds openness to trade, measured by exports plus imports to GDP, directly correlated with FDI.

2.3. Summary of the Literature gap

There have been studies examining the economic variables that determine FDI in Ethiopia. Amanuel Mekonnen (2014) examined the determinants of foreign direct investment in Ethiopia by time-series data covering 21 years (1990-2011). He concluded that the level of trade openness and the inflation rate of Ethiopia influences the flow of FDI to Ethiopia. Therefore, there is no clear relationship obtained between market size, infrastructure, and human capital. Dr. Dipti Ranjan Mohapatra (2014) assessed the determinates of FDI inflows from 1992 to 2012. He concludes that trade Openness, imports, exports, official exchange rate, gross capital formation, gross national expenditure, and transport services have significant determinants of FDI inflows to Ethiopia from 1992 to 2012. However, GDP Growth, Cost of Starting a Business, Gross Savings, Inflation, External Debt, and GDP Per Capita have non-significant determinants of FDI inflows to Ethiopia during the above period.

Tolesa (2009) examined financial stability, which is the measured ratio of external debt to export, and inflation is the most significant determinate of FDI in Ethiopia. Asmelash (2015) concluded from 1974/5-to 2013/4 that variable such as trade openness, gross domestic product, human capital, gross fixed capital formation, and debt servicing have positive coefficients and are statically significant determinates of FDI in Ethiopia. However, in the short run GFCF and inflation are significant with negative coefficients and GDP is positively related with FDI and it is significant though trade openness is significant only at 10% with positive coefficient. However, human capital is insignificant with negative coefficient of determination. Results indicate that trade openness and FDI demonstrate negative relation in the short run. Haile & Assefa (2006) analyzed determining factor of FDI in Ethiopia using a time series data (1974-2001) and decided that growth of real GDP, export focus trade and liberalization promote the

inflow of FDI but macroeconomic uncertainty and poor infrastructure discourage the inflow of FDI.

2.4. Research Hypothesis

To accomplish the objectives identified above, the following hypotheses were examined.

H1: Inflation as a measure of macroeconomic stability is negatively related with FDI.
H2: Exchange rate as a measure of macroeconomic stability is positively related with FDI.
H3: Foreign debt as a measure of macroeconomic stability is negatively related with FDI.
H4: Real gross domestic product as a measure of market size is positively related with FDI.
H5: Trade openness is positively related with FDI.
H6: Gross fixed capital formation as measure of infrastructure is positively related with FDI.

2.5. Conceptual frameworks of the study

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

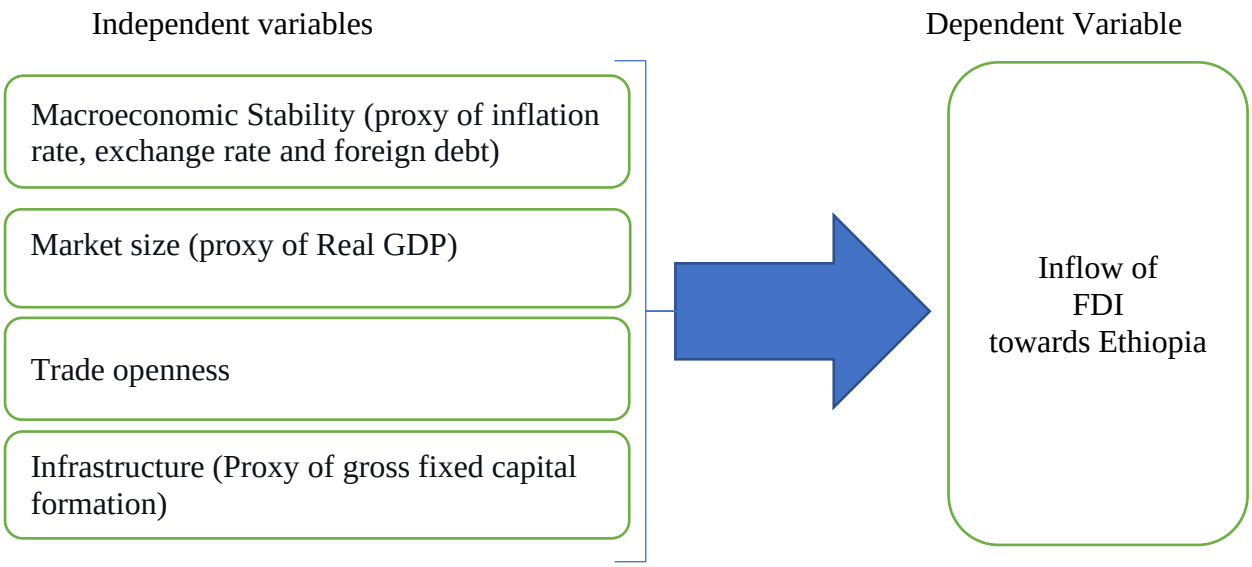


Figure 2.1. – Independent and dependent variables

CHAPTER THREE: RESEARCH METHODOLOGY

This chapter discusses the research design and methodology and elaborates on the research approach, methods of data collection, and analysis of the factors that affect the inflow of FDI towards Ethiopia.

3.1 Research Design

This study uses a quantitative method of data approach, which is collected from secondary data sources to assess the main economic variables that determine the inflow of FDI in Ethiopia. A quantitative research strategy had used for data collection and data analysis. The research design used for this research is an explanatory research method. Multiple ordinary least square (OLS) estimators have been used for analyzing the determinate of FDI inflow to Ethiopia for the time series data 1974 - 2020 G.C.

3.2 Data source and types

Examining the determinant of foreign direct investments (FDI), annual time series data had used from 1974-2020, where the data are available. The study has evaluated the main economic variables to determine the inflow of FDI in Ethiopia. This study used quantitative data types and secondary data collected by comparing all available documents from various sources. The data had gathered from World Bank (WB), International Monetary Fund (IMF), United Nations Conference on Trade and Development (UNCTAD). The World Bank (WB) is the main source of data, and it is checked and confirmed with International Monetary Fund (IMF), United Nations Conference on Trade and Development (UNCTAD).

3.3 Definition of Variables

Several variables have been suggested by literatures as factors that influence on FDI. However, it cannot be possible to include all of them. Due to this fact, the researcher chose a few of them depending on previous studies specific to a country, the variable strength, availability of data, and fitness to a specific model.

3.3.1 Dependent Variable

FDI: 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 ownership) in a business organization operating in a country other than that of the shareholder. In line with the practice used in the FDI literature, the dependent variable used in this study FDI is determined as the net foreign direct investment inflows as a percentage of GDP.

3.3.2 Independent Variables

Macroeconomic stability: Macroeconomic Stability describes a national economy that has minimized susceptibility to external tremors, which in turn increases its prospects for sustained growth. A country which has a stable macroeconomic situation with high and continuous growth rates will receive more FDI inflows than a more unstable economy. There is a widespread perception that macro-economic stability shows the strength of an economy and provides a degree of certainty of being able to operate profitably (Balasubramanyam, 2002). Inflation rate, government expenditure, exchange rate, and foreign debt are used as proxy variables of macroeconomic stability (Bleaney, 1996). Low inflation, high employment trend, minimal foreign debt, stable government expenditure, have a positive influence on FDI.

Market size: large buyer market signifies more consumption and thus more opportunity for trade exchange. Countries having larger buyer market should obtain more inflows than that of smaller buyer market. High market expansion implies a potential larger market and more favorable expectations. FDI, therefore, tend to flow to the countries with larger market size and higher economic development in which larger economies of scale could be provided for FDI to utilize their proprietorship advantages (Culem, 1988). It is one of the significant determinants that have been used in empirical studies to explain the inflow of FDI to a host country. Because the host countries have a large market size, they will have investment opportunities that generate high profits for the foreign firms. Besides, the market size hypothesis states that multinational firms are attracted to a larger market to utilize resources efficiently and exploit economies of scale. Usually, the proxies to measure market size are Real GDP per capital and Real GDP growth rate, but to maintain consistency with this study uses Real GDP growth rate (Chakrabarti, 2001). The nominal values of GDP were taken and then

converted into values using the GDP deflator. FDI has expected a positive relationship with the Real GDP growth rate.

Trade Openness: Various empirical studies suggest that trade (imports and exports) complements rather than substitutes for FDI. Trade openness has measured the sum of imports and export and most studies use this variable as a measure of trade restrictions (Asiedu, 2002). The standard hypothesis stated that the high tariff rate (low values of trade) increases the costs of doing business and deters the inflow of FDI, meaning that a high value of this variable is an incentive to attract FDI (Hufbauer, 1994). However, there are arguments stating that a low value of this variable could attract horizontal FDI (Caves, 1971). The capital movement to and out of the country and the trade openness can affect the inflow of FDI. The standard way of thinking is that countries with capital control and restrictive trade policies discourage FDI, compared with countries with liberal policies. This study has applied the ratio of trade to GDP (import plus export to GDP). As openness of an economy fosters the level of FDI, the more open an economy is, the more likely it would grow and attract FDI. Thus, we expect a positive relationship between openness and the level of FDI.

Infrastructure: Infrastructure covers many dimensions ranging from roads, bridge, railways, ports, aviation, water, electric power, and telecommunication systems to the level of institutional development (Getinet and Hirut 2006). Investments in infrastructure development contributes higher productivity and growth, accelerates trade and connectivity, and fosters economic inclusion. Well founded and expanded infrastructure facility indicates the prosperity of the country and provides opportunity for FDIs. On the other hand, a country which has opportunity to bring FDI flows will encourage a country to equip with improved infrastructure facilities. It is suggested that the availability of a good quality infrastructure subsidizes the cost of total investment and increases production and marketing. The accessibility of well-established infrastructure will reduce the cost of doing business for foreign investors and enable them to increase the rate of return on investment (Morriset, 2000). Considering Gross Fixed Capital Formation (GFCF) has been included to proxy infrastructure development. Infrastructure is expected to have positively correlated with FDI. Therefore, countries with good infrastructures are likely to attract more FDI. This variable is expected to have a positive effect on the FDI inflow. Another scholar (Su et al., 2020) stated that the infrastructure variable brought positive determinants like knowledge Spillovers from FDI, for instance, through becoming local suppliers.

Variables	Abbreviation	Descriptions	Expected sign
Macroeconomic Stability (MES)	INR	Inflation rate	Negative
	EXR	Exchange rate	Positive
	FOD	Foreign debt	Negative
Market size	RGDP	Real GDP growth rate	Positive
Trade openness	TOP	Ratio of (IMPO plus EXPO) to GDP	Positive
Infrastructure	GFCF	Gross fixed capital formation	Positive

Source: from theoretical and empirical study

Table 4.1. Variables expected sign

3.4 Mathematical Model of the research

This study uses a model which developed by Chan and Gemayel (2004) to examine the determinants of FDI in Ethiopia over the period of 1974 – 2020 G.C. by using Multiple Linear Regression Model. This model analyzes the effect of number of variables on FDI and presented as follows. In this study, the Ordinary Least Squares (OLS) estimation method was employed. Based on the empirical and theoretical frameworks, the most relevant factors of FDI inflows in Ethiopia can be incorporated into this model. This study used E-views statistical package software.

FDI = f (X),

Where: X (*macroeconomic stability, market size, trade openness, and infrastructure).*

FDI = *f* (MES, MS, TO, and INFRU) ..... (1)

FDI= f [MES_INR, MES_EXR, MES_FOD, RGDP, TO, GFCF] .....(2)

The relation between the dependent and explanatory variable in equation (1) can be re-written explicitly in the following log (L) linear form to reduce the skewness in data distribution and allow the coefficient estimates to be interpreted as elasticity. In all the models, all variables except FDI, MES_INT, RGDP, TO and GFCF the other variables MES_EXR and MES_FOD

first converted into natural log. Then, it denoted by InFDI, MES_INR, InMES_EXR, InMES_FOD, RGDP, InTO, and InGFCF.

The model is

$$InFDI_t = \beta_0 + \beta_1(MES\_INR_t) + \beta_2(InMES\_EXR_t) + \beta_3(InMES\_FOD_t) + \beta_4(RGDP_t) + \beta_5(InTO_t) + \beta_6(InGFCF_t) + U_t \quad (3)$$

Where:

InFDI = the net foreign direct investment inflow (Measure of FDI.)
MES_INR = Inflation rate based on consumer price index (Measure macroeconomic stability)
InMES_EXR = Exchange rate (measure macroeconomic stability)
InMES_FOD = Foreign debt as a percentage of GDP (Measure macroeconomic stability)
RGDP = Real GDP growth rate (Measure of market size)
InTO = Trade Openness (import plus export to GDP) (Measure of Openness)
InGFCF= Gross Fixed Capital Formation (as % of GDP) (Measure infrastructure)

The coefficients β0, β1, β2, β3, β4, β5, and β6 are the parameters of the econometric model, and they describe the directions and strengths of the relationship between FDI and the factors that used to define FDI in the model and U is the error term.

3.5 Econometric Method

To investigate the relationship between different economic variables and FDI inflow, the study has used Augmented Dickey-Fuller test (ADF Test) to check the level of stationary of the variables (the unit root test). To find out the long run co-integration between dependent and independent variables, OLS approach to co-integration used.

3.5.1 Stationarity Test

A Stationary series is one whose statistical properties like to mean, variance, and covariance do not vary with time, or these stats properties are not the function of time. Stationary series is simple for statistical models to predict effectively and precisely. Appropriate evaluation of time series data requires a stationary model. If the variables in the regression analysis are not

stationary, then the standard assumptions for evaluation will not be acceptable. Granger and Newbold (1974) explain, estimation of parameters and hypothesis testing using the time series data requires an examination of the data generating process. Conducting time series analysis on non-stationary data will result in "spurious" or "nonsense" regression, i.e., a situation where the estimated regression has a high R2 and significant t-values without any economic relationship between the variables. This investigation helps to avoid estimating a spurious correlation between variables in a regression, where and what exists is a correlated time trend rather than a meaningful economic relationship. A variable that includes a time series trend or are non-stationarity may lead to spurious correlation. The problem of spurious correlation leads to inappropriate model specification and misleading results due to the presence of non-stationary variables in the regression model. We used the Augmented Dickey-Fuller (ADF) test, which is the most common statistical test to determine whether a given Time series is stationary or not.

3.5.2 Vector Autoregressive (VAR) Modeling and Co-integration analysis

The vector autoregressive (VAR) model is working on a multivariate time series model that relates current interpretations of a variable with its past interpretations, and past interpretations of other variables in the system. The VAR model is useful when one is interested in predicting multiple time series variables using a single model. Christopher Sims (1980) introduced the VAR model. The study has involved the concept of co-integration because making variable stationery by differencing gives the short-run dynamics. The research is also interested in knowing the long-run relationship. Two variables will be co-integrated if they have long-run associations. The VAR models evaluate for co-integration is vital because if there is no co-integration between the variables then there is no point in estimating VECM.

A simple methodology to testing for the presence of co-integration is the Engle-Granger (1987) two-step approach. This procedure has several limitations. One of the limitations is that the method has no systematic strategy to identify the existence of multiple co-integrating vectors. An alternative approach had proposed by Johansen (1988), who developed the maximum likelihood estimation procedure that also allows one to evaluate the number of co-integrating relationships. The maximum likelihood estimators overcome problems associated with the use of two-step estimators. It can also detect the presence of multiple co-integrating vectors. The test allows restricted versions of the co-integrating vector(s) and the speed of adjustment

parameters. The technique used for co-integration testing and estimation of the VAR in this research follows the methodology established and applied by Johansen (1988). The method allows testing for the presence of more than one co-integration vector. Any deviation from the equilibrium point will revert to its long-run path. Therefore, ECM depicts both the short-run and long-run behavior of a system.

In this study, various post-estimation diagnostic tests had used to guarantee that the residuals from the model have a normal distribution. Such as residual serial correlation LM, normality, and heteroscedasticity test. Besides, the diagnostic test results had used as indicators of the validity of employing impulse-response functions and variance-decomposition analyses. Similarly, the study also employed the impulse response function to trace the effect of a one standard deviation shock to one of the innovations on the current and future values of the endogenous variables.

CHAPTER FOUR: ECONOMERIC TEST RESULTS AND DISCUSSION

Before the estimation of the model and discussion between Foreign Direct Investment (FDI) and its determinants using annual time series data, it is advisable first to conduct the unit root test to confirm the time series data is stationary or non-stationary. Then after identifying the optimal lag length and checking VAR stability, the presence of the co-integrating vectors is evaluated using the Johansen co-integration method. The long-run and short-run relationships were identified followed by the post-diagnostic test.

4.1 Unit Root Tests

Proper estimation of a time series model requires the existence of stationarity. Conducting time series analysis on non-stationary data will result in "spurious" or "nonsense" regression, i.e., a situation where the estimated regression has a high R2 and significant t-values without any economic relationship between the variables. To determine whether the data is stationary or not, the researcher uses the Augmented Dickey-Fuller (ADF) unit root test.

As a result of this test, the following decision rule formulated

- If the p-value is less than 0.05, reject the null hypothesis that there is a unit root, meaning that the variable is stationary, which is desirable.
- If the P-value is more than 0.05, do not reject the null hypothesis that unit root doesn't exist, meaning the variable is not stationary.

As the result of the first difference test depicted in table 5.1, all variables become stationary at their first difference of the ADF tests. Therefore, the null hypotheses for these variables also failed to accept. However, the study accepts the alternative hypothesis, which means the variables are stationary at their first difference in the ADF tests. As a result of the stationarity test, the estimation models need to adjust with the differenced variables. The first model for analyzing determinants was specified as follows.

$$InFDI_t = \beta_0 + \beta_1(MES\_INR_t) + \beta_2(InMES\_EXR_t) + \beta_3(InMES\_FOD_t) + \beta_4(RGDP_t) + \beta_5(InTO_t) + \beta_6(InGFCF_t) + U_t$$

Now, this is adjusted to:

$$\Delta InFDI_t = \beta_0 + \beta_1(\Delta MES\_INR_t) + \beta_2(\Delta InMES\_EXR_t) + \beta_3(\Delta InMES\_FOD_t) + \beta_4(\Delta RGDP_t) + \beta_5(\Delta InTO_t) + \beta_6(\Delta InGFCF_t) + U_t$$

Δ Where refers to the first change

	Augmented Dickey-Fuller Test at Level				Augmented Dickey-Fuller Test at 1st Difference			
	Intercept		Trend and Intercept		Intercept		Trend and Intercept	
Variables	t-statistic	Prob.*	t-statistic	Prob.*	t-statistic	Prob.*	t-statistic	Prob.*
InFDI	-0.954321	0.7598	-3.884612	0.0223	-7.343318	0.0000	-7.374356	0.0000
MES_INR	-5090690	0.0001	-5.145450	0.0006	-9.448279	0.0000	-9.415172	0.0000
InMES_EXR	0.422482	0.9818	-2.659310	0.2576	-3.736197	0.0067	-3.919220	0.0192
InMES_FOD	-2.180363	0.2159	-1.916582	0.6298	-4.862615	0.0002	-4.906705	0.0013
RGDP	-2.093606	0.2481	-5.435150	0.0003	-9.491382	0.0000	-9.382765	0.0000
InTO	-1.459171	0.5444	-1.318885	0.8697	-7.244068	0.0000	-7.294120	0.0000
InGFCF	-1.116579	0.7015	-3.027305	0.1362	-7.909396	0.0000	-7.814481	0.0000

Source: E-views result

Table 5.1 ADF Unit root test

4.2 Co-integration Test

4.2.1 Co-integration Test Result

The finding that much macro time series may contain a unit root has spurred the development of the theory of non-stationary time series analysis. Engle and Granger (1987) indicated that a linear combination of two or more non-stationary series could possibly be stationary. If a stationary linear combination exists, then the non-stationary time series has said to be cointegrated. The stationary linear combination is called the cointegrating equation and may interpret as a long-run equilibrium relationship among the variables.

4.2.2 VAR Lag Order Selection for Endogenous Variables

The Johansen co-integration test result is a way to determine if three or more time series are cointegrated. The Johansen co-integration test result is sensitive to the number of lags included

for the endogenous variables in the estimation of the VAR. The Johansen co-integration test result necessitates determining an optimal lag order before the co-integration test. The optimal lag order has been determined with the sequential modified Likelihood Ratio test statistics [LR], the Final Prediction Error [FPE], the Akaiki Information Criterion [AIC], the Schwarz Information Criterion [SC], and the Hannan-Quinn Information Criterion [HQ]). As shown in Table 5.2 below, LR and SC suggest an optimal lag of one, and FPE, AIC, and HQ suggest an optimal lag of two, each test at a 5% significance level. Therefore, we use the optimal lag of two based on the majority rule.

VAR Lag Order Selection Criteria
Endogenous variables: INFDI MES_INR INMES_EXR INMES_FOD RGDP INTO INGFCF
Exogenous variables: C
Sample: 1974 2020
Included observations: 33

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-286.8038	NA	0.127617	17.80629	18.12373	17.91310
1	-136.5805	227.6110	0.000296	11.67154	14.21107*	12.52602
2	-65.68956	77.33555*	0.000121*	10.34482*	15.10644	11.94696*

* 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

Source: E-views result

Table 5.2 VAR Lag Order Selection Criteria

4.2.3 The Johansen Co-integration Test Result

The ADF and stationary test results indicate that all the variables are not level stationery. The ADF suggests that regression based on the level variables may produce an unreliable outcome. However, the Granger representation theorem states that non-stationary variables can create a stationary relationship if co-integrated. It would imply that there is a meaningful long-run relationship among the variables. Therefore, the presence of such co-integrating has been

examined using the trace and the maximum Eigen value methods. Decision rule if critical value (Trace statistic or if p-value) greater than 0.05 we accept the null hypothesis, means there is co-integration.

Sample (adjusted): 1980 2020
Included observations: 31 after adjustments
Trend assumption: Quadratic deterministic trend
Series: INFDI MES_INR INMES_EXR INMES_FOD RGDP INTO INGFCF
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.994993	392.5117	139.2753	0.0000
At most 1 *	0.938045	228.3050	107.3466	0.0000
At most 2 *	0.887109	142.0831	79.34145	0.0000
At most 3 *	0.701724	74.46173	55.24578	0.0004
At most 4 *	0.486748	36.95993	35.01090	0.0305
At most 5	0.392216	16.28330	18.39771	0.0964
At most 6	0.026963	0.847313	3.841466	0.3573

Trace test indicates 5 cointegrating eqn(s) at the 0.05 level
* Denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: E-views result

Table 5.3 Johansen Co-integration Test Results

In table 5.3. above, the trace statistic test suggests that there are about five co-integrating equations at a 5% significance level. It is proof of the long-run relationship between Foreign Direct Investment (InFDI), inflation (MES_INF), the Exchange rate (InMES_EXR), Foreign Debt (InMES_FOD), Real Gross Domestic Product (RGDP), Trade Openness (InTO), and Gross Fixed Capital Formation (InGFCF). This co-integration rank test also led to the Vector Auto-Regressive (VAR) model and the Johansen method instead of the single equation-based Engle-Granger two-step procedure.

4.3 Vector Error Correction Model (VECM)

The previous analysis explained that the data has five co-integrating relationships based on the Johansen co-integration test. Hence, VECM has been executed by choosing the optimal lag based on the information criterion seen in the previous section and using the result of the Johansen co-integration test. The VECM consists of two parts: the matrix of long-run co-integration coefficients and the short-run coefficients for the short-run analysis.

4.3.1 Long-run Relationship

The long-run relationship implies that variables have converged upon some long-term values and are no longer changing.

Dependent Variable: INFDI
Method: Least Squares
Date: 10/14/22 Time: 10:41
Sample (adjusted): 1977 2020
Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MES_INR	-0.022172	0.021554	-1.028661	0.3111
INMES_EXR	1.740869	0.705558	2.467367	0.0190
INMES_FOD	0.149469	0.402725	0.371145	0.7129
RGDP	-0.073258	0.056167	-1.304277	0.2012
INTO	0.473781	1.121111	0.422599	0.6753
INGFCF	3.223216	1.254018	2.570311	0.0149
C	2.408271	7.224410	0.333352	0.7410

R-squared	0.879048	Mean dependent var	17.75739
Adjusted R-squared	0.857057	S.D. dependent var	3.434932
S.E. of regression	1.298673	Akaike info criterion	3.518191
Sum squared resid	55.65621	Schwarz criterion	3.813745
Log likelihood	-63.36383	Hannan-Quinn criter.	3.625054
F-statistic	39.97261	Durbin-Watson stat	1.816094
Prob(F-statistic)	0.000000		

Source: Own computation using E-views

Guidelines if t-stat is greater than absolute 2 it is significant

Table 5.4 Estimated Long Run Model, Dependent variable: InFDI

To understand and interpret the above result more easily we can rewrite the long run equilibrium relationship normalized on InFDI as

InFDI = 2.408271 - 0.022172MCS_INR + 1.740869InMCS_EXR + 0.149469InMCS_FOD - 0.073258RGDP + 0.473781InTO + 3.223216InGFCF ……..……. (5.1)

4.3.2 Short – run Relationship

In addition to the long-run relationship, the short-run relationship had checked between variables. The Error Correction Term (ECT) is used to find the short-run dynamics. When the error term is stationary, the variables are co-integrated in the linear combination of those variables. The variables are co-integrated that share a long-run relationship over time. The error correction term represents the long-run relationship between dependent and independent variables. A negative and significant coefficient of the error correction term indicates the presence of a long-run causal relationship. The unit root test of ECT is significant at level.

Dependent Variable: D(INFDI)
Method: Least Squares
Sample (adjusted): 1978 2020
Included observations: 36 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.006858	0.230108	-0.029802	0.9764
D(MES_INR)	-0.014882	0.015390	-0.966948	0.3418
D(INMES_EXR)	2.454444	1.797827	1.365228	0.1831
D(INMES_FOD)	-1.431508	0.647160	-2.211986	0.0353
D(RGDP)	-0.131848	0.039744	-3.317459	0.0025
D(INTO)	0.331780	1.025881	0.323410	0.7488
D(INGFCF)	3.259726	1.185368	2.749969	0.0103
ECT(-1)	-1.138241	0.161614	-7.042941	0.0000

R-squared	0.728167	Mean dependent var	0.023604
Adjusted R-squared	0.660208	S.D. dependent var	1.808512
S.E. of regression	1.054211	Akaike info criterion	3.136593
Sum squared resid	31.11813	Schwarz criterion	3.488486
Log likelihood	-48.45868	Hannan-Quinn criter.	3.259413
F-statistic	10.71490	Durbin-Watson stat	1.472237
Prob(F-statistic)	0.000002		

Source: Own computation using E-views

Table 5.5 Short run coefficient with dependent variable: InFDI

The formula for short-term relationships is

d(infdi) c d(mes_inr) d(inmes_exr) d(inmes_fod) d(rgdp) d(into) d(ingfcf) ect(-1)

Note: d shows the change

$$\Delta InFDI_t = -0.006858 - 0.014882\Delta MES\_INR_t + 2.454444\Delta InMES\_EXR_t - 1.431508\Delta InMES\_FOD_t - 0.131848\Delta RGDP_t + 0.331780\Delta InTO_t + 3.259726\Delta InGFCF_t + U_t \quad (5.2)$$

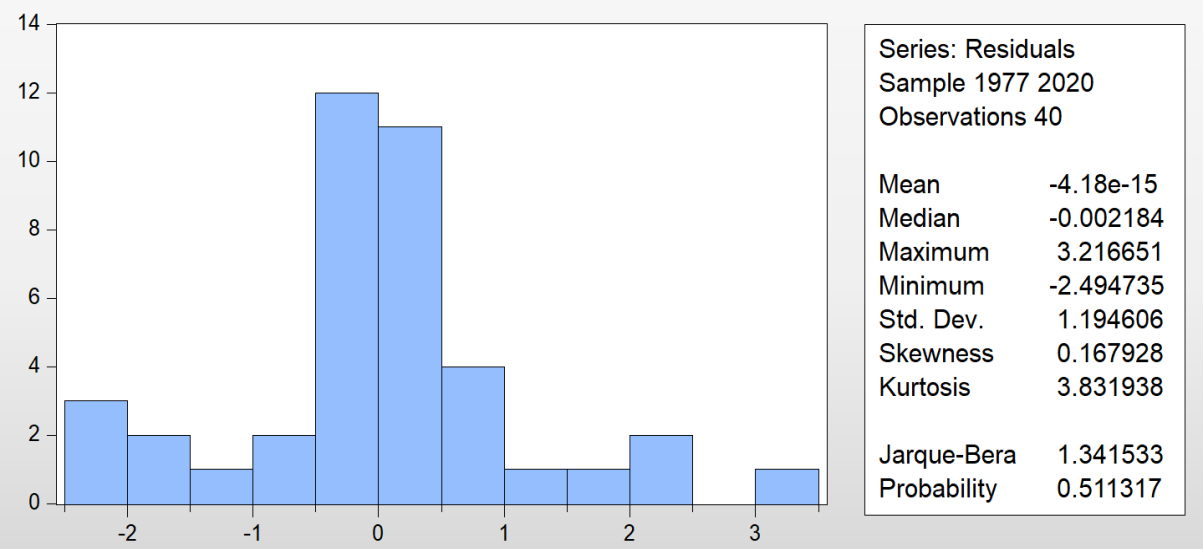
The table 5.5 above, the coefficient of the error correction term for the equation is negative and significant as expected. It tells us that there is a reasonable adjustment toward the long-run steady state. This ensures that although our dependent variable FDI may temporarily diverge from its long-run equilibrium value, it would progressively come together to its equilibrium. The scale of the ECT coefficient should be in the middle of 0 and -2, this make sure that the method will be convergent. The value of coefficient of ECM (-1) is negative which is (-1.138241) and it is better speed of convergence, and the whole system can get back to long run equilibrium by 100% speed of adjustment. The inflation variable (consumer price index) is insignificant and negatively affects the inflow of FDI to Ethiopia. The result implies that macroeconomic stability is not a significant factor in the short run to determine the foreign direct investment in Ethiopia. The Real Gross Domestic Product is negative and insignificant in the short run and affects the FDI. EXR, FOD, and TO are positive and insignificant to FDI inflows in the short run. GFCF in the table above is insignificant and positively related to FDI. It indicates that infrastructure influences the inflow of FDI in Ethiopia in the short run during the given study period.

4.4 Post – Estimation Diagnostics Test

The diagnostic test suggests that the model passes the test of serial correlation, non-normality of the errors, and heteroscedasticity associated with the model. The study used different post-estimation diagnostic tests to ensure that the residuals from the model have been normally distributed, the assumptions are not violated, and the estimation results and inferences are dependable. We have also evaluated for autocorrelation, normality, heteroscedasticity, and multicollinearity.

4.4.1 Test for Normality

One of the diagnostic tests conducted in this paper is the normality assumption. The p-value relates to a null hypothesis that the data is a Gaussian distribution. If the test statistic is large and the p-value is less than 0.05, the data does not follow a Gaussian distribution (Lee, 2016). One of the most applied tests for normality is the Jarque-Bera- (JB) test. The Jarque-Bera test is a goodness-of-fit test that determines whether sample data have skewness and kurtosis that matches a normal distribution. JB uses the property of a normally distributed random variable that the entire distribution is characterized by the first two moments - the mean and the variance (Gel and Gastwirth, 2008). In this study, the researcher used the JB normality test to evaluate the null hypothesis of normally distributed error assumptions. In figure 5.2. below the p-value given at the bottom of the normality test screen is greater than 0.05 (which is 0.511317), the study is not rejecting the null of normality at the 5% level. The residuals are Gaussian distributed, and we can conclude that there is no problem with the normality of the FDI model.



Source: Own computation using E-views

Figure 5.2 Normality test

4.4.2 Test for Heteroskedastic

In this study, the ARCH test has been used to evaluate the presence of heteroscedasticity in the data set. The ARCH test is applied to establish whether heteroscedasticity is present in a regression model. It is employed to evaluate heteroskedasticity in a linear regression model

and assumes that the error terms have normally distributed. It checks whether the variance of the errors from regression is dependent on the values of the independent variables. In table 5.6 below, both the F-statistic and Chi-Square versions of the test statistic gave the same conclusion that there is no evidence for the presence of Heteroskedasticity since the p-values were greater than 0.05.

Heteroskedasticity Test: ARCH

F-statistic	1.190319	Prob. F (1,34)	0.2829
Obs*R-squared	1.217707	Prob. Chi-Square (1)	0.2698

Source: Own computation using E-views

Table 5.6 Heteroskedasticity Test: ARCH

4.4.3 Residual Serial Correlation LM Test

In the analysis there is no proof that shows the existence of autocorrelation at the first and the second lags. The large p-values indicate that the chi-squared statistics at all lags are not adequate to help reject the null of no autocorrelation at any of the normal critical values. Thus, the research could not find any evidence of autocorrelation trouble in the residuals. The P stat is greater than 5% and there is no serial correlation on the data.

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.213223	Prob. F (2,31)	0.8092
Obs*R-squared	0.542785	Prob. Chi-Square (2)	0.7623

Source: Own computation using E-views

Table 5.7 Serial Correlation LM Test

4.4.4 Test of multicollinearity

The final test conducted in this study is the multicollinearity test, it helps to identify the correlation between explanatory variables and to avoid the double effect of an independent variable from the model. Therefore, in this study correlation matrix for six of the independent

variables shown in table 5.8 below has been estimated. In the below correlation matrix, the highest correlation exists between gross fixed capital formation and the exchange rate. Multicollinearity could only be a problem if the pair-wise correlation coefficient among regressors is above 10 (Hair et al, 2006). Multicollinearity between independent variables will lead to in less reliable statistical inferences. VIF above 10 indicates a high correlation and is cause for concern (O'brien, 2007). In the study, the VIF value is less than 10, and there is no severe multicollinearity.

Variance Inflation Factors
Sample: 1974 2020
Included observations: 40

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
MES_INR	0.000465	2.433230	1.147685
INMES_EXR	0.497812	54.16170	9.651670
INMES_FOD	0.162187	1965.111	3.976654
RGDP	0.003155	2.843791	2.250501
INTO	1.256889	46.35446	5.391580
INGFCF	1.572561	340.1529	9.633476
C	52.19210	1237.841	NA

Source: Own computation using E-views

Table 5.8 Test of multicollinearity

4.4.5 Goodness of fit test

The goodness fit test measures the validity and reliability of the dependent and independent variables of the specified model's understudy. The Unit Root, Johansen co-integration, Autocorrelation, Normality, Multicollinearity, and Heteroscedastic test were conducted before running the regression analysis. The unit root test was performed applying ADF tests. Their results indicate the data series are non-stationery and stationery at level leads to rearranging the models with these levels to difference and stationery at their first difference. Johansen tests for the existence of a co-integration relationship among the independent variables. The co-integration assured that the models have short-run and long-run relations, so rearranging the models to accommodate these short-run and long-run relations. The Serial Correlation LM Test

for autocorrelation confirms the models do not have a serial correlation. Using the Skewness/Kurtosis tests plus graphical examinations of the normality confirmed to be the data are normally distributed. In evaluating the multicollinearity, no variables are strongly correlated with other variables.

4.5 Discussion on long run regression analysis

Variable	Coefficient		t-Statistic	
MES_INR	-0.022172	Negative	-1.028661	Insignificant
INMES_EXR	1.740869	Positive	2.467367	Significant
INMES_FOD	0.149469	Positive	0.371145	Insignificant
RGDP	-0.073258	Negative	-1.304277	Insignificant
INTO	0.473781	Positive	0.422599	Insignificant
INGFCF	3.223216	Positive	2.570311	Significant

Guidelines if t-stat is greater than absolute 2 it is significant

Table 5.9 Results of regression analysis

H1: Inflation as a measure of macroeconomic stability is negatively related with FDI.

Inflation (INF), which is a proxy of macroeconomic stability, is negatively and insignificantly affected FDI inflows to Ethiopia, which indicates an elevated level of inflation might cause a decline in FDI. The finding indicates that a fluctuation in the general price level increases the uncertainty of the future economy and financial restriction adversely affects the FDI. High inflation results in the devaluation of the local currency and a decrease in the value of assets attached to the local currency relative to foreign currencies. Currency fluctuation of the general price level increases the uncertainty of the future economy, and financial restriction adversely affects the FDI. The research conducted in Nigeria confirms that the inflation rate negatively affects the FDI (Omodero, 2019).

H2: Exchange rate as a measure of macroeconomic stability is positively related with FDI.

The exchange rate (EXR) is a proxy of macroeconomic stability, is positively and significantly affects the inflows of FDI. When a currency devalues, its value declines relative to the value of another currency. It reduces that country's labor and material costs compared with foreign counterparts. The exchange rate devaluation increases the overall rate of return to foreign

investors. Depreciation in the local currency of one country increases foreign direct investment flows into that country, and the effect is significant. This result is in line with other research that shows the relationship between exchange volatility and FDI is positive and significant. (Alba et al, 2010).

H3: Foreign debt as a measure of macroeconomic stability is negatively related with FDI.

Foreign debt (FOD) is a proxy of macroeconomic stability and is positively and insignificantly affected the inflows of FDI under the given studies period. The study implies that foreign debt does not affect the inflow of FDI to Ethiopia. Even if Ethiopia foreign debt increases progressively, the ratio of public dept to GDP lower than IMF thresholds (Woldeyes, 2021). Theoretically, excessive foreign debt is the source of instability and uncertainty in the macroeconomic environment of underdeveloped countries. Research conducted in Egypt reveals that foreign debt positively affects FDI (Abouelfarag and Abed, 2019).

H4: Real gross domestic product as a measure of market size is positively related with FDI.

The Real Gross Domestic Product (RGDP) is a proxy of the market size is negatively and insignificantly affecting the inflow of FDI to Ethiopia during the study period. It implies developing countries with low individual income and market size do not have enough to attract foreign companies. Multinational companies start investing in developing countries targeting export businesses after exploitation of their cheap labor and abundant natural resources. Companies such as Reebok, Nike, and Levi Strauss exploit human labor in Indonesia (Ferdausy, 2009). The research performed on Asian countries verifies that real GDP which is a proxy of the market size negatively correlated with FDI (Ullah and Khan, 2017).

H5: Trade openness is positively related with FDI.

Trade openness (TO) positively and insignificantly affected the FDI inflows to Ethiopia. Trade openness attracts multinational companies to invest in the host country and encourages economic growth by adding domestic capital, improving productivity, expanding export revenue, and increasing international competitiveness. Dollar and Kraay (2003) examined the impact of trade openness on economic growth, and the more open economies with better institutions develop faster, and countries trade more with better institutions. The research

conducted in Vietnam substantiates the country's trade openness positively affects the FDI (Lien, 2021).

H6: Gross fixed capital formation as measure of infrastructure is positively related with FDI.

Gross Fixed Capital Formation (GFCF) is a proxy for infrastructural development and has a positive and significant effect on FDI. The study shows that good infrastructure lowers the cost of doing business and improves the local investment that attracts FDI. The availability of good infrastructure fosters FDI since it declines operating expenses. The study on the impact of FDI on Nigeria's economy validates the GFCF used as a proxy for infrastructural development has a positive and significant impact on economic growth (Ugochukwu et al, 2013).

Independent Variables	The expected result from a research hypothesis	Regression result	Hypothesis final decision
Inflation (INF)	-	-	Supported
The exchange rate (EXR)	+	+	Supported
Foreign debt (FOD)	-	+	Not supported
The Real Gross Domestic Product (RGDP)	+	-	Not supported
Trade openness (TO)	+	+	Supported
Gross Fixed Capital Formation (GFCF)	+	+	Supported

Table 5.10 Hypothesis final decision

CHAPTER FIVE. SUMMERY OF MAJOR FINDINGS, CONCLUSION AND RECOMMENDATION

This chapter is covering of a summary of major findings, conclusion, recommendations, and area of further research on FDI in Ethiopia.

5.1 Summary of Major Findings

This paper aimed to identify the determinants of FDI inflows in Ethiopia and the characteristic of FDI in Ethiopia. To fulfill this objective, the researcher has reviewed theoretical explanations and empirical literature regarding the determinants of FDI in developing countries. The study also identified the trend and characteristics of FDI in Ethiopia and evaluated various reports. In addition to the theoretical and empirical literature, the empirical analysis that has concluded using the econometrics technique identifies the determinants of FDI in Ethiopia. FDI and private domestic investment are the cornerstones for economic growth in any developing country like Ethiopia. However, the share of FDI in economic growth and the total investment is limited and highly concentrated around Addis Ababa. Even if the government revised its investment policies so many times, the inflow of FDI and its contribution to the development of the country's economy couldn’t be as expected.

The research finding supports the hypothesis on the inflation rate, which is negatively related to the inflow of FDI and exchange rate, trade openness, and infrastructure positively supporting the inflows of FDI. The finding confirms the above four factors affected the inflows of FDI in Ethiopia within the study period. In contrast with the research hypothesis, foreign debt positively supports FDI, and the market size negatively supports the inflows of FDI. The regression result is in the above table 5.4. shows t statistics of the exchange rate and Gross fixed capital formation are significantly affected by FDI inflows to Ethiopia during the study periods. The inflation rate, foreign debt, Real GDP growth rate, and trade openness are insignificant. The inflation rate significantly and negatively affected the FDI inflows to Ethiopia. The result shows a higher level of inflation might bring about a decline in FDI. The exchange rate is a proxy of macroeconomic stability, is insignificant, and positively affects the inflows of FDI. Devaluation in the local currency will increase the FDI inflows into that country. Trade openness insignificantly and positively affected FDI inflows to Ethiopia. Trade openness improves foreign direct investment and encourages economic growth. Gross Fixed

Capital Formation is a proxy for infrastructural development and has a positive and significant effect on FDI.

However, the finding of on foreign debt and the real gross domestic product are a proxy for market size contrary to the research hypothesis. During the study period, foreign debt as a proxy of macroeconomic stability positively and significantly affected the inflows of FDI. The Real Gross Domestic Product (RGDP) is a proxy of the market size has negative and insignificant to the inflow of FDI to Ethiopia during the study period.

5.2 Conclusion

As a measure of macroeconomic stability during the study period inflation rate have negatively and statistically insignificant effects on the inflows of FDI. From the finding, we can conclude that inflation may be one case of macroeconomic instability. Studies conducted by Nnadi and Soobaroyen (2015) and Emenuga (2019) have reported that a negative relationship exists between inflation and FDI. An elevated level of inflation is a sign of macroeconomic instability and may cause a reduction in FDI. The exchange rate has a positive and significant to the inflows of FDI in Ethiopia during the study period. Exchange rate devaluations might result from increases in inflows of FDI, as multinational companies can take advantage of changes in the foreign-currency value of domestic assets. In the study, the exchange rate is positively and significantly affected by the average rate of FDI inflows within their study period (Alba, Park, and Wang 2009). Foreign debt had positive and statistically insignificant effects on the inflows of FDI during the study period. The study result contradicted the research hypothesis. From the finding, we can conclude that foreign debt doesn't influence FDI in Ethiopia. In general, macroeconomic stability shows the strength of an economy and provides a degree of certainty that the business operates profitably (Balasubramanyam, 2001).

RGDP proxy of the market size has a negative and insignificant effect on FDI flows in Ethiopia. The correlation between FDI inflows and the size of a country by area is not always direct and unequivocal. Smaller countries by size like the UK, the UAE, Singapore, and Hong Kong attracted a significant level of FDI in 2019, while larger countries like Chad and the Democratic Republic of Congo have attracted few FDI projects over the same period despite their size (World Investment Report, 2020). This indicates the size does not make for a large domestic market that an MNC can sell.

Trade openness for imports and exports has a positive but statistically insignificant effect on the inflow of FDI in Ethiopia during the study period. Trade openness affects FDI positively or negatively, depending on the host country's trade policies (Liargovas and Skandalis 2012). According to UNCTAD (2015), should Openness to investment be in line with each country's development strategy, investment policy should establish open, stable, and predictable entry conditions for investment. The positive relationship between trade openness and FDI indicates that a country's restriction on imports and exports has a higher chance of attracting FDI. However, the level of influence is not significant in the study during the period.

Gross fixed capital formation (GFCF) is a proxy to measure physical infrastructure and has a positive and statistically significant effect on the contribution of FDI inflows in Ethiopia. This finding supports the hypothesis of Mourise that the availability of well-developed infrastructure will reduce the cost of doing business for foreign investors. Therefore, countries with well-established infrastructures are expected to be attracting more FDI (Mouriset, 2000). This finding is like the former conclusion drawn by Mitiku (2013).

5.3 Recommendation

There are many factors determine the overall performance of FDI inflows in Ethiopia. Based on the findings of the study, the following recommendations have been provided as follows:

- The inflation rate is the cause of macroeconomic instability that negatively affects the inflow of FDI to Ethiopia. The government should try to keep inflation within an optimal range that promotes growth without dramatically reducing the purchasing power of the local currency.

- The exchange rate is another source of macroeconomic instability that has both positive and significant effects on FDI inflows in Ethiopia. So, the government should focus on the macro-economic environment that strengthens the economy and builds confidence for potential multinational companies. To improve the economic situation of a country, the government should take the necessary policy using the adoption of sound fiscal and monetary policies. The government also focuses on export promotion and import substitution to stable the exchange rate. In addition, encourage Ethiopian diasporas to

use the local bank channels when they send remittances. That makes the exchange rate stable and improves the inflows of FDI to Ethiopia.

- Trade openness economy has believed to foster the level of FDI. The more open an economy is, the more likely it enhances and attract FDI. The finding shows trade openness has a significant and negative effect on the inflow of FDI. So, the government should analyze trade, investment, and capital movement policies. Besides, the government should open the restricted sector to foreign investors, which has its own impact on the inflows of FDI.

- GFCF constitutes various kinds of infrastructure development and has a positive and significant effect on FDI. Infrastructure has a vital role in economic development by promoting productivity, costs, and trade. So, the government should improve the infrastructure above the rate it is doing now in type and distribution.

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Appendix 1 - Economic Data

Year	Foreign direct investment, net inflows (Current USD)	Inflation, rate (annual %)	Exchange rate (LCU per US$, period average)	External debt (DOD, current US$)	Real GDP: Annual average growth rate per capita	Trade openness = (Import + Export)/GDP	GFCF (% of GDP)
1974	28,899,999.90	8.59	2.07	283,128,081.90	-1.18	0.00	9.89
1975	19,300,000.00	6.55	2.07	343,674,712.50	-2.21	0.00	10.49
1976	4,299,999.90	28.54	2.07	402,645,522.90	-0.03	0.00	8.49
1977	5,849,999.90	16.66	2.07	500,727,416.80	-0.35	0.21	8.22
1978	30,000.00	14.31	2.07	567,285,829.40	-2.56	0.19	7.51
1979	30,000.00	16.03	2.07	740,065,951.60	4.09	0.22	8.75
1980	1,000,000.00	4.48	2.07	823,661,624.80	3.68	0.24	10.05
1981	60,000.00	6.14	2.07	1,841,818,082.10	0.64	0.22	10.35
1982	2,040,000.00	5.89	2.07	3,279,545,191.20	-1.58	0.22	11.80
1983	-2,589,999.90	-0.68	2.07	3,845,189,805.40	1.94	0.22	11.16
1984	5,059,999.90	8.42	2.07	4,222,435,578.90	-7.90	0.20	15.37
1985	170,000.00	19.06	2.07	5,212,468,612.50	-8.83	0.18	12.37
1986	-570,000.00	-9.81	2.07	6,144,432,381.00	3.58	0.19	12.90
1987	-2,569,999.90	-2.43	2.07	7,377,385,232.00	5.75	0.18	14.24
1988	1,700,000.00	7.08	2.07	7,717,008,720.80	-1.03	0.19	16.28
1989	-500,000.00	7.82	2.07	7,855,586,230.10	-1.58	0.17	15.26
1990	12,000,010.00	5.15	2.07	8,645,231,101.20	-3.47	0.16	12.48
1991	6,000,010.00	35.72	2.07	9,133,608,406.40	-9.81	0.09	10.40
1992	170,000.00	10.53	2.80	9,355,564,836.40	0.00	0.18	7.75
1993	3,500,000.00	3.54	5.00	9,717,488,583.70	9.38	0.20	12.27
1994	17,210,000.00	7.59	5.47	10,079,654,017.60	-0.05	0.27	12.79
1995	14,140,000.00	10.02	6.16	10,324,075,338.00	2.65	0.29	13.87
1996	21,930,000.00	-8.48	6.35	10,091,749,359.60	9.99	0.26	16.11
1997	288,490,000.00	2.40	6.71	10,090,618,084.60	-0.23	0.28	14.34
1998	260,670,000.00	0.89	7.12	10,360,532,218.00	-6.82	0.36	23.15
1999	69,980,000.00	7.94	7.94	5,572,314,681.40	2.16	0.38	23.99
2000	134,639,999.90	0.66	8.22	5,516,263,792.30	3.06	0.33	22.20
2001	349,399,999.90	-8.24	8.46	5,745,843,979.00	5.23	0.39	23.56
2002	255,000,000.00	0.68	8.57	6,552,441,032.80	-1.35	0.40	26.40
2003	465,000,000.00	13.67	8.60	7,281,813,432.40	-4.91	0.46	24.30
2004	545,100,000.00	3.33	8.64	6,568,177,206.70	10.41	0.54	29.02
2005	265,111,675.48	9.97	8.67	6,175,805,430.40	8.73	0.56	26.00
2006	545,257,102.18	12.30	8.70	2,220,991,208.60	7.81	0.50	27.58
2007	222,000,572.99	17.24	8.97	2,591,387,173.40	8.44	0.50	24.21
2008	108,537,543.97	44.36	9.60	2,846,424,291.20	7.79	0.51	24.47
2009	221,459,581.36	8.48	11.78	5,360,207,433.90	5.84	0.44	24.86
2010	288,271,568.25	8.15	14.41	7,286,199,658.50	9.46	0.55	27.01
2011	628,624,806.00	33.25	16.90	8,606,311,904.70	10.02	0.58	32.11
2012	278,562,822.16	23.60	17.70	10,463,932,699.20	5.62	0.48	37.10
2013	1,343,876,023.73	7.46	18.63	12,584,252,082.90	7.50	0.44	34.08
2014	1,855,052,153.64	6.89	19.59	16,944,825,499.20	7.22	0.45	37.98
2015	2,626,517,918.31	9.57	20.58	20,443,253,424.10	7.39	0.41	39.42
2016	4,142,937,496.46	6.63	21.73	23,396,100,284.10	4.69	0.36	37.35
2017	4,017,159,564.65	10.69	23.87	26,169,980,394.70	6.68	0.34	38.44
2018	3,360,419,368.65	13.83	27.43	27,842,380,882.80	4.05	0.34	34.16
2019	2,548,743,427.36	15.81	29.07	28,374,718,501.40	5.60	0.29	35.26
2020	2,395,799,880.66	20.36	34.93	30,364,411,863.00	3.40	0.26	30.75

Source: WB, IMF, UNCTAD, MoFED, NBE