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THE EFFECT OF FOREIGN DIRECT INVESTMENT ON DOMESTIC INVESTMENT: SECTORAL ANALYSIS

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THE EFFECT OF FOREIGN DIRECT INVESTMENT ON DOMESTIC INVESTMENT: SECTORAL ANALYSIS

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This is to certify that the thesis prepared by Alehegn Moges, Entitled: "The Effect of Foreign Direct Investment On Domestic Investment: Sectoral Analysis" and submitted in partial fulfillment of the requirements for the Degree of Master of Science in Economics (Policy Analysis) complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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ACRONYMS

ADF	Augmented Dickey-Fuller
BOP	Balance of Payments
GDP	Gross Domestic Product
EIC	Ethiopian Investment Commission
GMM	Generalized Method of Moment
IPDC	Industrial Parks Development Corporation
IMF	International Monetary Fund
LDCs	Less Developing Countries
LM	Lagrange Multiplier
MNC/E	Multinational Companies (Enterprises)
OLI	Ownership, Location, Internalization
OLS	Ordinary Least Square
R&D	Research and Development
RGDP	Real gross domestic product
SSA	Sub-Saharan Africa countries
WB	World Bank
WDR	World Development Report
WTO	World Trade Organization

ABSTRACT

The Effect of Foreign Direct Investment on Domestic Investment: Sectoral Analysis

Alehegn Moges

Addis Ababa University, 2019

This paper measures the effect of foreign direct investment (FDI) on domestic investment (DI) of Ethiopia based on the time series data over the period 1995 to 2016. More specifically, the study examines how FDI affects DI both at the aggregate and sectoral levels and the effect of policy measures such as amendment of investment proclamation to promote domestic and foreign investments.

The model estimation is made using GMM so as to resolve the endogeneity problem exhibited in the estimated models. The main findings of this study have shown that FDI has neutral long-term and short-run effects both at the aggregate and sectoral levels. The service and manufacturing sectors FDIs have a positive and significant effect on total investment, while the agricultural sector FDI has exhibited an insignificant effect on total investment. The policy measures, proxied by the amendments of investment proclamations have found to have a significant positive effect on investment.

The major implication of this study is that, given the neutral effect of aggregate and sectoral FDI on domestic investment, it is rational to recommend the government to work on identifying and resolve sector-specific problems that hampered the domestic investors from leveraging the best of the benefit from the crowed-in effect of FDI, and the government should improve its capability to appropriately direct FDI projects in such a way that they do not result in crowed out effect and displace local firms.

Keywords: Crowed in/out effect; DI; Endogeneity; FDI; GMM; Cointegration.

1. CHAPTER ONE: INTRODUCTION

1.1. BACKGROUND OF THE STUDY

Foreign direct investment (FDI) is assumed to influence the host country's economic growth through several channels. Different theoretical and empirical works of literature in the area have affirmed that FDI might have both positive and negative impacts on the host country's economy.

It has been recognized that the benefits of FDI for the host country can be seen directly or indirectly, and its significant effect includes but not limited to technology spill-over, human capital formation support, enhancement of the competitive business environment, contribution to international trade integration and improvement of enterprise development. (Kurtishi Kastrati, 2013)

Foreign direct investment (FDI) is an integral part of an open and effective international economic system and a major catalyst to development. Yet, the benefits of FDI do not accrue automatically and evenly across countries, sectors and local communities. National policies and the international investment architecture matter for attracting FDI to a larger number of developing countries and for reaping the full benefits of FDI for development. The challenges primarily address host countries, which need to establish a transparent, broad and effective enabling policy environment for investment and to build the human and institutional capacities to implement them. (UNCTAD, Foriregn direct investement overview, 2002)

FDI can also contribute to economic growth not only by providing foreign capital and its direct transfer benefit on technological, organizational and human capital formation but also by crowding in additional domestic investment (Jenkins and Thomas, 2002). Moreover, (Borensztein, et.al, 1998) found some evidence of a "crowding-in" effect, that FDI is complementary to domestic investment.

However, opponents of inward FDI argue that there are adverse economic and political effects on the host country. The assumed economic effects include the balance of payments deficits, diminished competition, crowding-out of domestic firms and lower employment, the potentially harmful environmental impact of FDI, especially in the heavy industries and

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the effects on competition in national markets. Economic analysis has shown that most of the alleged economic drawbacks of FDI are of little merit (Graham and Krugman, 1995).

Moses and his colleagues also showed that FDI inflows to Nigeria negatively related to private and public domestic investments as well as human capital and market size (Moses, Olise, et.al, 2013)

With all those controversial issues raised on FDI; countries with a developing economy are advised to create a favourable climate for foreign investment to augment the gap in domestic saving and investment and provide the economy with the needed capital.

Moreover, recent researchers questioned the result obtained from the study on the effect of FDI on domestic investment by arguing that the aggregated impact of foreign direct investment (FDI) on the host country cannot be gauged using either firm-level or aggregated data. Instead, industry-level data provide useful information on the link between domestic and foreign investment.

So, in view of the discussion presented above, this study intends to show the effect of FDI on domestic investment using sectoral disaggregated data. More specifically, the study has focused on the three basic sectors; Agriculture, Service, and Manufacturing.

1.2. STATEMENT OF THE PROBLEM

Ethiopia with the developing economy is trying to attract FDI to complement the prevailing shortage of capital and foreign exchange, and strive to benefit from the crowed-in effect of FDI on the domestic investment.

As it is stated in the investment proclamation no. 769/2012, the government of Ethiopia aimed to enable foreign investment plays its role in the country's economic development; so as to create ample employment opportunities to Ethiopians and to advance transfer of technology required for the development of the country.

To this end, the government is trying to appeal to the interest of foreign investors by creating a favorable and conducive environment for foreign investment. As of the information on the official website of the Ethiopian Investment Commission (EIC), the favorable climate for foreign investment created by the overall economic conditions of the

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country is further augmented by specific incentives and administrative procedures to encourage investment. These include:

- Exemption from profit tax for a minimum period of two years, and up to five years depending on the type and location of investment, with provision for additional exemption of two to three years for investment in existing enterprises;
- The carrying forward of losses suffered during the tax exemption period for half the tax exemption period granted.
- Duty-free imports of capital goods including spare parts up to 15 percent of the value of capital goods imported for investment purposes.

Moreover, the country has a program to provide foreign investors with the necessary financial support; with this program, foreign investors are allowed to get a loan of about 70% of the capital needed for their investment from commercial and development banks by the government guarantor as collateral and they are expected to rise only 25 to 30 percent of their initial investment outlay.

As the government is incurring different costs for the provision of the aforementioned incentives, the benefit that the country gained from hosting FDI should be critically evaluated and empirically tested whether it met the intended objective and benefit the nation's economy.

Studies conducted on the effect of FDI on the host country's economy come up with diversified and controversial results. Besides, most of the researches done in Ethiopia are based on aggregate level data; though researcher who recently conducted different empirical studies on the area, argued that the aggregated home country implications of foreign direct investment (FDI) cannot be gauged using firm-level data. Aggregated data, in turn, miss channels through which domestic and foreign activities interact. (Christian Arndt, Claudia M. Buch, Monika Schnitzer, 2007)

Accordingly, this study has tried to investigate the effect of FDI on the domestic investment of Ethiopia using industry level (sectoral) data and will identify the sectors of FDI that have a significant effect on domestic investment. Specifically, this study aimed at answering the following basic research questions:

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1. Does FDI have a crowed in or crowed out effect on the domestic investment of Ethiopia?

2. Which sector of the FDI inflow significantly affect the domestic investment?

1.3. OBJECTIVE OF THE STUDY

The main objective of this study is to see the effect of FDI on domestic investment at the sectoral level. The specific objectives of the study include:

- Analyze the effect of FDI on domestic investment, and
- Identify the sectors of FDI that have a significant effect on domestic investment.

1.4. HYPOTHESIS

Based on the empirical literature on the interaction between Foreign direct investment and domestic investment in developing countries, and the Ethiopian government investment promotion policy and directives, the study proposes the following working hypotheses to hold true in my analysis.

- Foreign direct investment has a crowed-in effect on domestic investment at the aggregate level.
- Agricultural sector foreign direct investment has a crowed-in effect on domestic investment.
- Manufacturing sector foreign direct investment has a crowed-in effect on domestic investment.
- Service sector foreign direct investment has a crowed-in effect on domestic investment.

1.5. SIGNIFICANCE OF THE STUDY

The study employs cointegration and General Method of Moment approaches for estimation of the models. Therefore, the result conveys some important messages about the spill over effect FDI has on domestic investment both at the aggregate and sectoral levels.

As the study was conducted at sectoral level and the result obtained from this study can be compared with results of different researches conducted using aggregate level data; this might shade light in identifying the proper level at which the effect of FDI on domestic investment in Ethiopia should be analyzed. Moreover, the conclusion of the study and the

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proceeding policy implication gives valuable insight to policymakers in identifying the sector of the economy on which FDI should be encouraged. This, in turn, will help the country to focus on the sector that enables it to leverage the benefit that the country expected from FDI.

1.6.   SCOPE AND LIMITATION OF THE STUDY

There are different channels in which FDI could affect the economy of the country in general and domestic investment specifically. However, this study is limited to investigating the effect of foreign direct investment on domestic investment; specifically, the study was meant to see the crowed in/out the effect of FDI on domestic investment of Ethiopia using annual data from 1995 to 2016. As a result, its scope is limited to the stated time period, and the sectoral analysis is limited to the three most important sectors the economy; Agriculture, Service, and Manufacturing. Besides, only the Greenfield inflow of the FDI is considered for the study.

1.7.   ORGANIZATION OF THE PAPER

This paper is organized and presented in six chapters. The remainder of the thesis is organized as follows. Chapter two provides a review of related literature dealing with the concepts of FDI; use and significant impact FDI has on the economic growth of the country and its relation with the domestic investment. The third chapter describes the research method; the model specification, data types and sources, and also estimation techniques.

The fourth chapter is devoted to the description of overviews of Ethiopia's economy; besides some descriptive analysis of the data is done and presented in this section of the paper. Chapter five is mainly focused on the analysis, presentation, and interpretation of the data; different models specified in chapter three of this paper are estimated and the results are presented in this specific section. Finally, the summary of the study results and conclusions and policy implications are presented in the sixth chapter of this paper

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2. CHAPTER TWO: REVIEW OF RELATED LITERATURE

This part of the paper is devoted to the theoretical bases of the study and review related empirical studies done on the relationship between foreign direct investment and host country economy and domestic investment.

2.1. THEORETICAL LITERATURE REVIEW
2.1.1. FOREIGN DIRECT INVESTMENT: CONCEPTS AND DEFINITIONS

According to IMF and The Organization for Economic Co-operation and Development (OECD), The term Foreign direct investment describes a category of international investment made by a resident entity in one economy (direct investor) with the objective of establishing a lasting interest in an enterprise resident in an economy other than that of the investor (direct investment enterprise).

" Lasting interest" implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the direct investor on the management of the direct investment enterprise. Direct investment involves both the initial transaction between the two entities and all subsequent capital transactions between them and among affiliated enterprises, both incorporated and unincorporated.

A foreign direct investor is an entity (an institutional unit) resident in one economy that has acquired, either directly or indirectly, at least 10% of the voting power of a corporation (enterprise), or equivalent for an unincorporated enterprise, resident in another economy. (OECD, 2008). If the ownership is less than 10% of the value of the local company, the investment is classified as portfolio investment. According to Ethiopian Government Investment Proclamation of 2012, foreign investors and foreign capitals defined as:

Foreign investor means a foreigner or an enterprise wholly owned by foreign nationals, having invested foreign capital in Ethiopia or a foreigner or an Ethiopian incorporated enterprise owned by foreign national jointly investing with a domestic

investor, and includes an Ethiopian permanently residing abroad and preferring treatment as a foreign investor.

Foreign capital means capital obtained from foreign sources, and includes the re-invested profits and dividends of a foreign investor

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Moreover, the proclamation has set the following minimum capital requirement as basic eligibility criteria to work as foreign investors:

- Any foreign investor, to be allowed to invest pursuant to this proclamation, shall be required to allocate a minimum capital of USD 200000 for a single investment project.
- Notwithstanding the provision of sub-article (1) of this article, the minimum capital required of a foreign investor investing jointly with a domestic investor shall be USD 150000.
- The minimum capital required of a foreign investor investing in architectural or engineering works or related technical consultancy services, technical testing, and analysis or in publishing work shall be:
- USD 100,000 if the investment is made wholly on his own:
- USD 50,000 if the investment is made jointly with a domestic investor,
- A foreign investor re-investing his profits or dividends generated from his existing enterprise may not be required to allocate a minimum capital. (Investement_Proclamation_N0.769/2012, 2012)

The foreign direct investment could be in manufacturing, services, agriculture, or other sector and it could be *Greenfield investment*; building or investing in something new, *Acquisition*; buying a company existing in the host country or *Joint venture*; owning joint ownership with a local company.

2.1.2. THE RATIONALE FOR FOREIGN DIRECT INVESTMENT

The increasing importance of multinational enterprises (MNEs) and FDI have increased the interests of the researchers to conduct studies to find theories that explain the behaviour of multinational enterprises (MNEs) and the existence of international production (Andreas Johnson and Jönköping , 2005). Though, several studies that provide overviews of FDI theories they put different reasons for MNEs to take part in foreign investment.

Firms operating in a foreign country are operating in a foreign environment where they are competing with domestic firms that have a comparative advantage of lower costs of operation resulted from being familiar with local conditions such as legislation, business culture, language and so on. Therefore, a foreign firm must have an offsetting, firm-specific

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advantage allowing it to compete with domestic firms. Firm-specific advantages include superior technology, brand name, managerial skills and economies of scale. Firm-specific advantages have to be excludable for a substantial time period in order to provide the possessing firm with a long-term advantage. (Andreas Johnson and Jönköping , 2005)

Dunning (1981), developed the idea of firm-specific advantage and stated the main reasons for MNEs to be engaged in FDI are based on the ownership, location and internalization advantages (OLI). The OLI paradigm not only provides a framework for the discussion of the motives of MNE to invest foreign nation but also it allows for a discussion of the choice of an MNE between *licensing, exports and FDI* in order to serve a foreign market. The three ways to serve foreign markets are; Export (produce in the home market and ship to foreign market), FDI (produce in the foreign market using a subsidiary) and License (produce in the foreign market using a foreign firm). According to Dunning, the choice is determined by ownership advantages, location advantages and internalization advantages (OLI).

Ownership Advantage: refer to firm-specific features that are independent of the location of the firm's value-adding activities or of the characteristics of the export market, which might affect the likelihood and mode of internalization of value-adding activities. It is the advantage that MNEs have over domestic firms, the advantages may arouse from the firm's controls on some specific asset (one that is not generally available to its competitors) which allows it to generate positive profits. As a result of having the specific asset, the firm could have either lower costs or be able to charge higher prices than other firms can potentially have, therefore, make greater economic profits, both now and in the future (if the competitors can easily acquire the same asset, they would compete away future profits). Some of the examples of firm-specific ownership advantages are *technology* (unique product design, better product, and lower cost), *superior management or organization skills* and *reputations* (intangible assets) for providing high-quality products.

Location Advantage: is an advantage arising from location factors due to segmented geographical markets or differences in regulations, culture, and institutional arrangements become relevant when the firm operates across countries. For the MNEs to be engaged in FDI; there has to be some location advantage to generate greater profits than could be attained if they produced in their home country. These are advantages related to the

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abundance of factors of production in that specific area. Possible types of location advantage are; first, the natural resources needed to produce the product (e.g., oil to produce gasoline) and those resources have to be extracted where they are located and are cheaper to extract there. Second, some capital or labour inputs may be less costly there and the production intensively uses those inputs. Third, the local production may be favoured by the government there (e.g., added tariffs on the import of goods produced elsewhere). And, fourth, net transportation costs; and it will be lower if (part of) the production is done where the market is found.

Internalization Advantage: in addition to the above two advantages for MNE to directly invest abroad the foreign firm needs to have an ***internalization (or control) advantage.*** Generally, this advantage arises if allowing another company to use the asset would increase the probability that the value of the asset to the MNE would be diminished by the other company acquiring control of the use of the asset. For example, the foreign company could copy the technology, terminate the agreement, and then start producing the same product in competition with the MNE. Accordingly, some firms like pharmaceutical firms are reluctant to license foreign firms to produce the MNE's medicines in countries where intellectual property rights are not strongly enforced because they would have to reveal the techniques for producing those medicines.

Generally, while possession of an ownership advantage is a prerequisite for a firm to be able to serve in a foreign market, it is the existence of location and internalization advantages that determines how the foreign market is served.

Table 1: OLI advantages and MNE channels for serving a foreign market

Channel for serving a foreign market	Ownership advantage	Internalization advantage	Location advantage in a foreign country
FDI	Yes	Yes	Yes
Export	Yes	Yes	No
Licensing	Yes	No	No

Source: Dunning (1981)

FDI only occurs when the MNE possesses both an ownership and an internalization advantage and the foreign country has a location advantage. For the case where the MNE

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lacks an internalization advantage, production is licensed to local firms in the foreign market. If the MNE's home country has the strongest location advantage, the MNE uses exports to serve the foreign market. (Dunning, J. H. , 1981).

Based on the motives of foreign investors to invest in foreign country scholars have identified four main types of foreign direct investment based MNE activity:

1. **Market seeking or demand-oriented FDI**: FID that is designed to satisfy a particular foreign market or set of foreign markets.

2. **Resource seeking or supply oriented FDI**: FDI that is designed to gain access to natural resources, e.g. minerals, agricultural products, and unskilled labor.

3. **Rationalized or efficiency-seeking FDI**: FDI that is designed to promote a more efficient division of labor or specialization of an existing portfolio of foreign and domestic assets by MNEs, i.e. This type of FDI, though related to the first or second kind, is usually sequential to it.

4. **Strategic asset seeking FDI**: FDI that is designed to protect or augment the existing ownership specific advantages of the investing firms and/or to reduce those of their competitors. (Dunning, 2000)

The new trade theory models incorporating MNEs is the other important model that can be used to analyse the firm's decision between FDI and export to serve the foreign market. According to this model, the firm's decision to choose FDI rather than export to serve foreign market revolves around the so-called proximity-concentration trade-off, where MNEs compare trade costs to the costs of producing at several locations. The advantage of producing in a single location to achieve scale economies is compared to the reduction in trade cost achieved when production takes place at several locations close to the local market. The proximity-concentration trade-off has resulted in the idea of two primary forms of FDI, horizontal and vertical. (Andreas Johnson and Jönköping , 2005)

Horizontal FDI is an FDI when an MNE replicates the same activities in several different geographical locations. Horizontal FDI occurs when the primary motive of the MNE is market-seeking and the firm wants to satisfy foreign market demand by local production. In this case, there exists a foreign market with a demand that the MNE wants to serve by producing close to the market. A reason for this might be that it is necessary to adapt the

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product to the preferences of local customers. Higher trade costs in the form of tariffs tend to increase the incentive for horizontal FDI.

Whereas, **vertical FDI** implies that an MNE locates production stages according to factor costs. An MNE performing vertical FDI has primarily an efficiency-seeking motive, that is, the MNE exploits differences in factor costs between geographical locations. The MNE decomposes the production process geographically into separate stages according to factor intensity. For example, the labour-intensive stage of production should be located where labour costs are low. Similarly, a capital-intensive stage should be located where the cost of capital is low. (Andreas Johnson and Jönköping , 2005)

If FDI inflows to a host country are dominated by horizontal FDI having a market-seeking motive, the size of the host country's GDP should be an important determinant of FDI. Horizontal FDI suggests that FDI and trade are substitutes whereas vertical FDI suggests a complementary relationship.

To sum up, the main reasons for companies to start operations in a foreign country are Access to skilled labour at lower wages, Access to a large local market, Access to natural resources, Low taxes and various subsidies, Proximity to suppliers, Agglomeration; a large cluster of companies that work on related products and services, and Access to financing.

Ethiopia with low capital accumulation is promoting the inward flow FDI through the provision of different incentives that aimed at attracting FDI. These include exemption from profit tax- and Duty-free imports of capital goods including spare parts up to 15

percent of the value of capital goods imported for investment purposes. In addition to these, foreign investors are illegible to get more than 70% of their investment cost and they are expected to rise only 25 to 30% of their investment cost. Apart from this, the government of Ethiopia has also given special incentives to foreign investors operating in industrial parks; investors operating in industrial parks have the provision of being exempted from income taxes for more than 10 years.

2.1.3. HOST COUNTRY EFFECTS OF FDI INFLOWS

FDI inflows supposed to have both a positive and negative impact on the host country's economy. The positive effects include but not limited to improved access to export markets,

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creation of tax revenues and improvement of the balance of payments. Nevertheless, FDI inflows can also have detrimental effects on the host country's economy; MNE may have a negative effect on competition and possibly force local firms out of business. Another fear is that MNE activities can result in environmental degradation (Andreas Johnson and Jönköping , 2005)

According to Dunning (2000), the contributions of FDI to the improvement of competitiveness of host countries depends on the motives and kind of MNEs; based on the kind of MNEs their likely contributions are:

1. **Resource seeking or supply oriented FDI:**

    a) Provides complimentary assets (Technology, Management, and organizational ability)

    b) It provides access to foreign markets.

    c) May or may not lead to local spin-off effects on industrial customers. Eg, secondary processing activities.

    d) Raises standards of product quality.

    e) May or may not foster clusters of resource-based related activities.

2. **Market seeking or demand-oriented FDI:**

    a) Provides complimentary assets (Technology, Management, and organizational ability)

    b) Foster backward supply linkages and cluster of specialized labor markets and agglomerative economies.

    c) Raises standards of product quality, and also raised domestic consumer expectations of indigenous competitors.

    d) Stimulates local entrepreneurship and domestic rivalry.

3. **Rationalized or efficiency-seeking FDI:**

    a) Improves international division of labor and cross-border networking; entice comparative advantages of host countries.

    b) Provides access to foreign markets and/or sources of supply.

    c) Foster backward supply linkages and cluster of specialized labor markets and agglomerative economies.

    d) Raises standards of product quality, and also raised domestic consumer expectations of indigenous competitors.

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e) Aid structural adjustment

4. **Strategic asset seeking FDI:**

   a) It provides new finance capital and complementary assets.

   b) It provides access to foreign markets.

   c) Stimulates local entrepreneurship and domestic rivalry.

   d) Improves international division of labor and cross-border networking; entice comparative advantages of host countries.

Most classical and neoclassical economist sponsors the stock of capital accumulation as a prerequisite to economic growth and development. However, not all countries are in a position to create the level of capital accumulation needed for the anticipated level of economic growth and development. Most less-developed nations with few capital stocks have considered a foreign direct investment as an alternative means of capital to augment the domestic investment.

The main idea underlying the FDI liberalization policies of many developing countries and the FDI promotion efforts of international donors such as the World Bank and the IMF is the notion that FDI inflows foster economic growth. As FDI is a composite bundle of capital stocks, know-how, and technology, its impact on economic growth is expected to be manifold (Dunning J. H., 1993)

In the ways through which FDI can affect economic growth, the effect of FDI can be classified into direct and indirect effects. In addition to these effects, there is also a reverse channel through which the host country's economy affects the inflow of foreign direct investment.

The direct impact of FDI on the economy of the host country best explained by classical growth theory; that FDI has a complementary effect on improving the capital stock of the host country and other impacts such as employment which in turn is the main determinant of economic growth.

The indirect impact of FDI on which this study mainly focused on, shows the indirect impact of FDI has on the host country's economy through its spill-over impact on domestic investment. This indirect relationship between FDI and the economy of the host country can best be expressed as:

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$$Foreign\ capital\ formation\ (FDI) \xrightarrow{\text{Affects}} Domestic\ Investement\ (DI) \xrightarrow{\text{Affects}} GDP$$

The reverse impact of FDI shows the reverse impact of host county economy has on FDI

Advocates of FDI as a means of improving the capital stock have identified different benefit that the FDI provide for the host nation. Some of the benefits of FDI provides for the host countries are:

1. **Employment opportunities:** When foreign companies start operation, they usually hire people, especially if the investment is Greenfield, i.e. if a new facility is created and if the production is more labor-intensive, i.e. requires many people. Often, local companies become suppliers to a large new foreign investor and they also increase employment.

2. **Improving foreign exchange reserves:** When foreign companies invest abroad, they need to exchange their currency to the currency of the host country to buy factors of production such as; land and to pay wages. For instance, the U.S. investors exchange dollars for birr from the Ethiopian commercial banks. The banks can sell the dollars to domestic firms or they can sell the dollars to the central bank. When the dollars end up with the central bank, it keeps them in reserves so that Ethiopia can pay its international debts and imports.

3. **Technology transfer:** Foreign companies often introduce new technologies and train local personnel. Sometimes, after working at a foreign company for several years, an employee would leave and start his/her own business or would be hired by a domestic company. In that way, the knowledge is transferred from the international company to the domestic companies.

4. **Better managerial know-how:** Multinationals have well-functioning management structures that can be observed by local employees. These employees could spin-off local companies using that managerial know-how.

5. **New export markets:** Foreign companies usually have established channels for placing their output on international markets.

The export-oriented and import substitution trade policy and the incentive packages provided to investors engaged in the export market show that the government of Ethiopia is focusing on finding export markets and leveraging the potential foreign exchange

improving benefit of FDI. Besides, the currently established industrial parks are mainly targeting the textile and leather industry, and other light industries that are expected to hire relatively higher labour, this shows that the government also targeting on the employment opportunity created by foreign firms.

2.1.4. FOREIGN DIRECT INVESTMENT AND DOMESTIC INVESTMENT

Apart from the direct effect that FDI has on the economic growth of the host country through the provision of growth-enhancing attributes including technology, managerial know-how, entrepreneurial ability, and access to global distribution networks and international markets (Dunning J. H., 1993), FDI may additionally spill-over these attributes to other companies in the host economy and further benefit economic growth in these countries through indirect or spill-over effects.

Blomström and Kokko (1998) identify two types of spill-over effects from FDI to the host country: productivity spill-overs and market access spill-overs.

Productivity spill-overs take place when the entry of MNCs in the host country leads to productivity or efficiency benefits in the local firms.

Market access spill-overs take place when the entry of multinational firms improves access to export markets for local firms.

2.1.4.1. HORIZONTAL AND VERTICAL SPILL-OVERS

Horizontal spill-overs (intra-industry) is the productivity and market access spill-overs that advance the competing ability for domestic firms that operate in the same market. Technology and knowledge are characterized by imperfect markets with important externalities, so spill-over of technology or trained labour to domestic competitors can never be completely prevented.

Vertical spill-overs (inter-industry) through forward and backward linkages with domestic companies are desirable for the MNC and it is thought that these spill-overs to suppliers and buyers can play a very important role. While MNCs tend to prevent the transfer of technologies to home country competitors, they are likely to voluntarily increase the efficiency of domestic suppliers or customers through vertical input-output linkages. Colen, et.al (2008) identified five channels through which spill-over effects from FDI

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companies to domestic firms can occur: imitation, the formation of human capital, competition, crowding-in and export effects.

2.1.4.2. SPILL-OVER CHANNELS

Productivity and market-access spill-overs are generally difficult to distinguish in practice as they take place through similar spill-over channels. Based on Blomström and Kokko (1998) and Görg and Greenaway (2003) we identify five channels through which spill-over effects from FDI companies to domestic firms can occur: imitation, the formation of human capital, competition, crowding-in and export effects.

a) Imitation

Imitation is simply the copying of products, technologies and production processes by a local firm, often referred to as reverse-engineering. Such reverse engineering can result in horizontal productivity spill-overs and growth advances for the economy. For the imitation of advanced technologies, a certain level of technical skills in the imitating domestic firm may be required, while managerial and organizational innovations might be easier to imitate. (Colen, et.al, 2008)

b) Formation of Human Capital

Colen, et.al, (2008) stated that FDI can contribute to the formation of human capital resulting in spill-over effects to the rest of the economy both by demanding and supplying skills. A large share of FDI to developing countries is attracted by the relatively low wages in these countries. Nevertheless, multinational firms are generally more skill-intensive than local firms and tend to have a higher demand for relatively skilled labour. When MNCs enter the market, they may increase the demand for skilled workers if they do not substitute the local demand for employment. Increased demand for skills is expected to raise the wage and employment opportunities of skilled workers, creating incentives for overall investment in human capital. On the other hand, multinational firms might affect the supply side of skills by investing in training their workers and the development of human capital. The type of training can range from informal on-the-job training to official training, seminars or even investment in formal education.

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c) Competition and Crowding Out

The entry of a foreign firm or affiliate generally increases competition. Even if local firms are unable to imitate the technology of multinational firms, increased competition forces them to increase the efficiency of existing technologies, to adopt or develop new, more efficient technologies, or to invest in human capital that generally benefiting productivity and growth. (Colen, et.al, 2008)

Young (1993) states that the innovations embodied in FDI may create rents accruing to older technologies, making domestic investment more profitable. However, increased competition can also result in the crowding out of local firms and reduce domestic investment. For example, multinationals can have lower marginal costs due to some firm-specific advantages, which allow them to attract demand away from domestic firms. This effect can offset the positive productivity spill-over effects of increased competition (Aitken and Harrison, 1999).

d) Crowding in Domestic Investment

Some argue that rather than creating competition that crowd out local firms, FDI stimulates domestic investment and leads to crowding-in of domestic firms. The technologies, know-how and new market opportunities brought in by MNCs might attract domestic investors into the sectors where MNCs entered (Borensztein, et.al, 1998). Yet, in poor countries, crowding-in might be hampered since governments lack the ability to direct FDI projects such that they do not displace local firms (Agosin, M. R. and Mayer R, 2000). Additionally, policies offering preferential treatment and incentives to attract FDI such as export free zones and other tax incentives – may introduce a distortion that negatively affects domestic investment and limits growth spill-over effects through crowding-in (Borensztein, et.al, 1998).

e) Export Effects

A last source of spill-overs arises from the export activity of foreign firms (Aitken et al., 1997). MNCs link-local suppliers and sub-contractors to international markets, provide information on foreign market conditions and consumer preferences and offer distribution networks, transport infrastructure and export management skills (Blomström, M., S. Globerman and A. Kokko , 1998).

2.2.   EMPIRICAL LITERATURE REVIEW

As the flow of foreign direct investment (FDI) has been increasing worldwide in conjunction with globalization and thus many studies have been conducted to examine possible effects of foreign direct investment inflows on economic growth and Domestic investment. This section of the paper is devoted to the review of empirical studies conducted on the impact of FDI on economic growth and domestic investment.

2.2.1. EFFECT OF FDI ON DOMESTIC INVESTMENT AND ECONOMIC GROWTH

Most of the studies conducted on the relationship between foreign direct investment and domestic investment have come up with different and contradicting results. The result obtained from the majority of the researches shows that FDI has a positive and significant effect on domestic investment. On the other hand, some of the results depict a negative or crowed out effect of FDI on domestic investment, while others found no significant impact of FDI on private investment.

Though the substantial body of literature has grown around the question of how inward foreign direct investment affects host countries, almost in every aspect of this question there is a wide range of empirical results in academic literature with little sign of convergence (Lipsey and Sjoholm, 2005). As a showcase, the researcher tried to incorporate the contradicting results obtained by different researchers.

Ndikumana and Verick (2008) studied the Linkages between FDI and Domestic Investment, focusing on the developmental impact of foreign investment in Sub-Saharan Africa. The result of this empirical study shows that the relationship between FDI and domestic investment runs both ways, especially in the case of private investment. FDI crowds in private investment in this sample of SSA countries. The evidence supports the view that one way in which FDI can have a positive impact on growth is by enhancing domestic capital accumulation. However, the results also clearly indicate that the impact of private investment on FDI is stronger and more robust than the reverse relation. This result has important policy implications. In particular, the evidence suggests that African countries will benefit from measures aimed at promoting domestic private investment given that strong investment performance will serve as a sign of high returns to capital, which in turn will attract more foreign capital. National policies should aim at harnessing

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complementarities between domestic private investment and FDI rather than regarding them as substitutes.

Motivated by a persistent increase in FDI inflows in Malaysia since the early 1970s, (Hanif and Jalaluddin, 2014) examined the impact of inward FDI on domestic investment between 1970 and 2011. The Johansen and Juselius co-integration technique was employed in the study. The result obtained from the study reveals that there is a long-run relationship between domestic investment, FDI and economic growth. The error correction model suggests that there is a slow correction of the disequilibrium of the investment model in the short run. The findings further suggest that FDI inflows in Malaysia "crowds out" domestic investment in the short run. Moreover, based on the result the researchers recommended the policymakers to stimulate domestic investment by encouraging greater participation of local investors in production activities.

Ditimi and Matthew (2014) studied the interactions and transmission mechanism between FDI, private direct investment and public direct investment in Nigeria. The study also examined the direction of causality and whether or not they have a long-run linear relationship. Also, the impulse responses of these variables to shocks in the extraneous variables were verified; using the Multiple-Equation VAR models with time series data ranging from 1970-2012. The co-integration result indicates that there is no long-run relationship between these variables. The response of public and private investment to shocks in FDI is positive and significant in the short run.

Bayar (2014) investigated the relationship between economic growth and foreign direct investment inflows and domestic investment in Turkey using a time series data that covers the period of 1980–2012. The co-integration test and vector error correction model based on autoregressive distributed lag bound test approach were used for the study. The result obtained from the study found that there was a long-run relationship between economic growth, foreign direct investment inflows, and domestic investment. On the other hand, the results demonstrated that foreign direct investment inflows affected economic growth negatively in the short and long run, while gross domestic investments affected economic growth positively in the short and long run.

Jude (2014) studied and empirically test the hypothesis of FDI led capital accumulation in Central and Eastern European countries. More precisely, the study investigates the

relationship between FDI and local investment, using a sample of 10 Central and Eastern European countries (CEEC) over the period 1990-2010. The research found FDI to crowd out domestic investment, while the effect decreases with time. The results also indicate that Greenfield FDI may develop long run complementariness with domestic investment, while mergers and acquisitions do not prove any significant effect on domestic investment. Finally, financial development seems to foster a certain crowding-in effect.

Recently, researchers questioned the result obtained from the studies on the effect of FDI on domestic investment by arguing that the aggregated impact of foreign direct investment (FDI) on the host country cannot be gauged using either firm-level or Aggregated data. Instead, industry-level data provide useful information on the link between domestic and foreign investment. Accordingly, Different researches have also been conducted to see the effect of FDI at the sectoral level.

Hanafy (2015) investigated the effect of sectoral foreign direct investment (FDI) on economic growth in Egypt, using a panel dataset of 26 Egyptian governorates for the period 1992–2007. The study tried to address the question of why the empirical findings on the impact of FDI on enhancing economic growth are still inconclusive. They argue that one possible reason for the indefinite effect is the use of aggregate FDI data across different sectors. The results of the study show no significant effect of aggregate FDI stock on economic growth in Egyptian governorates, which can be partly explained by the contradictory growth effects of FDI at the sectoral level. They found a positive effect of manufacturing FDI, a negative effect of agricultural FDI and no significant effect of services FDI on economic growth.

Similarly, Arndt et.al (2007), argued that the aggregated home country implications of foreign direct investment (FDI) cannot be gauged using firm-level data. Aggregated data, in turn, miss channels through which domestic and foreign activities interact. Instead, industry-level data provide useful information on the link between domestic and foreign investment. The study theoretically shows that the effects of FDI on the domestic capital stock depend on the structure of industries and the relative importance of domestic and multinational firms. According to the researchers, the model used in the study allows distinguishing intra-sector competition from inter-sector linkage effects. The model was tested using data on German FDI. Using panel co-integration methods, and found evidence

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for a positive long-run impact of FDI on the domestic capital stock and on the stock of inward FDI. The result also shows the effects of FDI on the domestic capital stock driven mainly by intra-sector effects. For inward FDI, inter-sector linkages matter as well.

Tam Bang Vu et.al (2006) estimated the impact of FDI on growth using sectoral data for FDI inflows to China and Vietnam. Similar to the above empirical studies, the researchers tried to address the discrepancy of results obtained by different researches done in the area. The researchers pointed out that using either cross-country growth regressions or firm-level macro-econometric analysis, fail to reach a consensus. Moreover, the researchers claim that they are the first to use sectoral FDI inflow data to evaluate the sector-specific impact of FDI on growth. The results obtained from the study for the two developing-transition economies (China and Vietnam) show FDI has a statistically significant positive effect on economic growth operating directly and through labour productivity. Interestingly, the researchers find the effect to be very different across economic sectors, with almost all the beneficial impact limited to manufacturing. Other sectors appear to gain very little growth benefit from sector-specific FDI.

2.2.2. EFFECT OF FDI ON DOMESTIC INVESTMENT AND ECONOMIC GROWTH OF ETHIOPIA

Similar researches were also conducted to see the relationship between foreign direct investment, economic growth and domestic investment in Ethiopia.

Alemnesh (2012) investigated the nexus between public investment, private investment, trade openness and economic growth in Ethiopia. The cointegrated VAR approach was used for the analysis and estimated the relationship between investment, trade openness and growth for the period 1970-2009. The major findings of the study were; trade openness, public investment, and private investment have complementing effect on the long-run economic growth of the country, trade openness and economic growth also complement private investment, but trade openness reduces public investment, while economic growth and private investment encourage the expansion of public investment. The researcher also found that there is evidence of bi-directional causality between real GDP, private investment and public investment. Moreover, the impulse response analysis showed that economic growth in Ethiopia exhibits quicker transitory pattern to the long run time path, while public investment and private investment exhibits relatively slower transitory pattern

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to the long run time path. Besides, the researcher recommended a major policy implication of the study as; given the long-run positive impact of trade openness on private investment and economic growth, and as well as the long-run positive impact of private investment on public investment and economic growth, it will be natural to think of supplementary reforms.

Meskerem Daniel (2014) has tried to investigate the impact of foreign direct investment on the Economic growth of Ethiopia using the Ordinary Least Square (OLS) method. Results show that lagged FDI has a positive and statistically significant effect on contemporary economic growth. On the other hand, FDI after trade liberalization has a positive but statistically insignificant effect on economic growth. Results further show that the positive impact of domestic investment on economic growth becomes less when FDI assumes positive significant impact, implying the crowding out effect of FDI on domestic investment.

Tibebu (2014) conducted a study to know the interrelationship between foreign direct investment and domestic private investment. The researcher employed a vector auto-

regressive (VAR) model with an appropriate investigation of impulse response and variance decomposition. In addition, the researcher did a descriptive analysis. The study used time series data ranging from, 1970-2012 for econometric analysis and 1992-2012 for descriptive analysis. The result shows that foreign direct investment crowds-out domestic private investment. In addition, foreign direct investment does have no significant effect on economic growth. Secondly, Domestic private investment complements growth trajectory. However, the expansion of domestic private investment does not welcome foreign direct investment. On the other hand, the impact of economic growth on both foreign direct investment and domestic private investment is positive and significant in the long run.

Yesuf and Tsehaye (2016) have investigated the causal link between FDI and economic growth in Ethiopia. Using annual data ranging from 1974-2010 and employing the Toda-Yamamoto (1995) bivariate causality test, they could not find any causality running from FDI to growth or vice versa. However, there was evidence of cointegration between FDI and growth. The implications of the results are: first, the flow of the aggregate level of FDI is too small to translate in to growth. Second, perhaps FDI flow has gone in to sectors that

could not create linkages and fuel economic growth. Thus, developing countries like Ethiopia should formulate policies attracting FDI in to economic sectors that could harness the benefits of the FDI outweighing the costs of hosting FDI (like profit repatriation to FDI sending economy).

Most of the empirical studies have focused on the effect of FDI on economic growth. Thought some of the researchers have tried to see the effect of FDI on domestic investment, they did it at the aggregate level. In contrast to the previous studies, this study aimed to see the crowd in/out the effect of FDI on domestic investment both at the aggregate and sectoral levels.

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3. CHAPTER THREE: RESEARCH METHODOLOGY

3.1. RESEARCH METHOD AND APPROACHES

This study basically adopted a quantitative method, though it also considers a qualitative method to verify the study findings. Specifically, the correlational research design has been used to examine the effect of foreign direct investment on domestic investment. In doing so, the descriptive research technique used to describe the data obtained from different data sources on domestic investment, foreign direct investment inflow, gross domestic product (GDP), and other variables used for investigation.

3.2. DATA SOURCES

Secondary data collected from various sources were used to undertake this study. Mainly, the data were taken from two important sources; the investment data, both the domestic and foreign direct investment were obtained from Ethiopian Investment Commission (EIC), and other economic data; such as GDP and Inflation rate were taken from the world bank and economic data. The data used for the study covered 22 years' time span; 1995-2016 G.C.

In addition to the aforementioned secondary data, the study is augmented with primary data collected through key informant interviews with investment commission, Amhara, Oromia, and AA investment bureaus.

3.3. VARIABLE DEFINITION AND MODEL SPECIFICATION

3.3.1. VARIABLE DEFINITION

The choice of independent variables is constrained by data availability, as is mostly the case with time-series data in developing countries. For example, time-series data on some of the factors such as tariff rates, trade taxes, real effective exchange rate, real wages, and corruption index that are used in some studies of this nature are not readily available for Ethiopia over the (entire) study period. Notwithstanding this constraint, this study uses the following variables that are commonly used in studies of FDI.

Foreign Direct Investment: the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. Though it is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments, for the purpose of this study only the greenfield FDI is considered. Since the study is meant to

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conduct the sectoral analysis and it is difficult to get the sectoral data from the balance of payment, the researcher has used the sectoral greenfield data obtained from the Ethiopian Investment Commission. Data are in current local currency.

Domestic Private Investment: for the purpose of this study, domestic private investment covers gross outlays by the domestic private sector (including private non-profit agencies including joint ventures) on additions to its fixed domestic assets. The data is taken from the Ethiopian Investment Commission and presented in current local currency.

Agriculture (Current LCU): Includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production. The data is taken from the Ethiopian Investment Commission and presented in current local currency.

Services: Include retail trade (including hotels and restaurants), transport, financial, professional, and personal services such as education, health care, and real estate services. The data is taken from the Ethiopian Investment Commission and presented in current local currency.

Gross Domestic Product (GDP): is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data is in the current local currency.

Inflation Rate (IR): Inflation, as measured by the consumer price index, reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. It is used as a proxy to measure the macroeconomic stability of the nation. The data is taken from the world bank database and presented in current local currency.

Policy: The policy variable is introduced to capture the effect of the policy variation that emanates from the changes and amendments of proclamation and regulations. The major proclamation declared in the years considered for this study were taken as categorical variable More specifically, the variable was assigned for value 0 for the period of time until 1995, 1 for years between 1996 and 1998, 2 for years 1999 and 2002, 3 for years between 2003 and 2008, 4 for the time period between 2009 and 2011, 5 for the time period after 2012.

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3.3.2. MODEL SPECIFICATION

The study is mainly aimed at analysing both the aggregate and sectoral effects of foreign direct investment on domestic investment. Accordingly, two different empirical models were used for the analysis.

3.3.2.1. MODEL FOR AGGREGATE EFFECT: THE CROWDING-OUT/IN MODEL

Most empirical models devised to see the effect of the foreign direct investment on the domestic investment at the aggregate level is based on the flexible accelerator model; which predicts that investment is proportional to the change in output.

The model of investment proposed by Agosin and Machado (2005) was adopted for this study. It is assumed that FDI enters straight into and becomes part of the existing basket of gross capital formation in the host economy. A similar model was also used by Mody and Murshid (2005).

Using the modified version of the flexible accelerated model, specifically, the crowed in/out model the econometric model used for the estimation. Adhering to the for mentioned models and using the model specified by (Kasule Twaha Ahmeda.et.al, 2014), the following model was specified to see the displacement or complementary effect of FDI on DI.

$$I_t = I_{d,t} + I_{f,t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{ (1)}$$

Practically, FDI inflows do not immediately translate into real investment. Therefore, a time lag of a year is allowed to enable all FDI to become a real investment. Hence;

$$I_{ft} = \alpha + \beta_1 FDI_t + \beta_2 FDI_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{ (2)}$$

Assuming that the domestic investment as a stock variable, defined by the change between the desired and actual capital stock (Rama, 1993). The domestic investment model is hence specified as;

$$I_{dt} = \lambda(K_{dt}{}^* - K_{dt}) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{ (3)}$$

$K_{dt}{}^*$ is the desired capital stock by domestic investors, while λ is a stock adjustment coefficient and $\lambda > 1$. The desired amount of capital stock is a function of two distinct

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variables, namely; the expected growth $G_t{}^e$ as well as the difference y between actual output Y and full capacity output $Y_t{}^n$. Thus, the amount of capital stock is modeled as follows;

$$K_{d,t}{}^* = \varphi_0 + \varphi_1 G_t{}^e + \varphi_2 y_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (4)$$

Where $y_t = Y - Y_t{}^n;\ and\ \varphi_1, \varphi_2 > 0$

Based on the law of motion, it is possible to express capital stock at any point in time as the stock at the commencement of the year plus fresh investment, less depreciation (d) during the year;

$$K_{d,t} = (1 - d)K_{d,t-1} + I_{d,t-1} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (5)$$

Using equations 3,4 and 5 the domestic investment can be modeled as;

$$I_{d,t} = \lambda(\varphi_0 + \varphi_1 G_t{}^e + \varphi_2 y) - \lambda\left((1 - d)K_{d,t-1} + I_{d,t-1}\right)\dots\dots\dots\dots\dots\dots\dots (6)$$

We can now transform the total investment model in equation (1) through substituting equations (6) and (2), and with some modification to incorporate additional determining variables, we obtain the following econometric model;

$$\left(\frac{Inv}{GDP}\right)_t = \alpha + \beta_1 \left(\frac{Inv}{GDP}\right)_{t-1} + \beta_2 \left(\frac{FDI}{GDP}\right)_t + \beta_3 \left(\frac{FDI}{GDP}\right)_{t-1} + \beta_4 RGGR_t + \beta_5 RGGR_{t-1} +$$

$$\beta_6 IR_t + \beta_7 IR_{t-1} + \beta_8 Policy_t + \varepsilon_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (7)$$

Where
$$\frac{Inv}{GDP} = Total\ Investenet\ per\ GDP$$
$$\frac{FDI}{GDP} = FDI\ per\ GDP$$
$$RGGR = Real\ GDP\ Growth\ Rate$$
$$IR = Inflation\ Rate$$
$Policy_t$ is categorical data that assigns

$$D1\ for\ the\ time\ period\ between\ 1996\ to\ 1998,$$
$$D2\ for\ time\ period\ between\ 1999\ to\ 2002,$$
$$D3\ for\ time\ period\ between\ 2003\ to\ 2008$$
$$D4\ for\ time\ period\ between\ 2009\ to\ 2011$$
$$D5\ for\ time\ period\ after\ 2012$$

As it is devised by Jude (2017), the following criteria were used to see the short-run and long-run effect of FDI on domestic investment. In doing so, after estimation of the stated model, wald joint significance test is conducted and the coefficients of Investment and FDI

were used to see the displacement or complementary effects; both the short-run and long-run.

$$\text{Let } \rho = \frac{\beta_2 + \beta_3}{1 - \beta_1}$$

Table 2: Hypothesis of FDI and domestic investment

Cases	Short term effect	Long term effect	Overall Impact
$\beta_2 < 1$ and $\rho < 1$	Crowding out	Crowding out	Crowding out
$\beta_2 < 1$ and $\rho > 1$	Crowding out	Crowd in	Creative destruction
$\beta_2 > 1$ and $\rho < 1$	Crowding in	Crowding out	Temporary Crowd in
$\beta_2 > 1$ and $\rho > 1$	Crowding in	Crowding in	Crowding in

Source: (Jude, 2017)

3.3.2.2. MODEL FOR SECTORAL EFFECT: THE CROWDING-OUT/IN MODEL:

With a certain modification on the model specified to see the crowed-in/ crowd-out effect at the aggregate level, the following model is specified to the sectoral effect of FDI on the aggregate domestic investment.

$$\left(\frac{Inv}{GDP}\right)_t = \alpha + \beta_1 \left(\frac{Inv}{GDP}\right)_{t-1} + \sum_{j=0}^{1} \beta_{2j} \left(\frac{FDI}{GDP}\right) Agri_{t-j} + \sum_{j=0}^{1} \beta_{3j} \left(\frac{FDI}{GDP}\right) Manf_{t-j} +$$

$$\sum_{j=0}^{1} \beta_{4j} \left(\frac{FDI}{GDP}\right) Serv_{t-j} + \sum_{j=0}^{1} \beta_{5j} (RGGR)_{t-j} + \sum_{j=0}^{1} \beta_{6j} IR_{t-j} + \beta_7 Policy_t + \varepsilon_t \dots\dots (8)$$

Where
$$\frac{Inv}{GDP} = Total\ Investenet\ per\ GDP$$

$$\left(\frac{FDI}{GDP}\right) Agri = Agricultural\ sector\ FDI\ per\ GDP$$

$$\left(\frac{FDI}{GDP}\right) Manf = Manufacturing\ sector\ FDI\ per\ GDP$$

$$\left(\frac{FDI}{GDP}\right) Serv = Service\ sector\ FDI\ per\ GDP$$

$$RGGR = Real\ GDP\ Growth\ Rate$$

$$IR = Inflation\ Rate$$

$$Policy_t\ is\ categorical\ data\ that\ assigns$$

$$D1\ for\ the\ time\ period\ between\ 1996\ to\ 1998,$$
$$D2\ for\ time\ period\ between\ 1999\ to\ 2002,$$
$$D3\ for\ time\ period\ between\ 2003\ to\ 2008$$
$$D4\ for\ time\ period\ between\ 2009\ to\ 2011$$
$$D5\ for\ time\ period\ after\ 2012$$

Again, a similar criterion was used to see the long-term and short-run effect of sectoral FDI on domestic investment.

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3.3.3. METHOD OF ANALYSIS

Both descriptive and econometric techniques were deployed in the study.

3.3.3.1.   DESCRIPTIVE ANALYSIS

Different statistical descriptive methods; tables, and graphs were used to describe the data collected for each variable. The trend and other characteristics of the collected data were properly described so as to have a clear understanding of the behavior that the variables exhibiting. The descriptive analysis also helps to see and anticipate the potential relationship between variables under investigation. The result of the descriptive analysis is presented in chapter four of this paper.

3.3.3.2.   ECONOMETRIC ESTIMATION TECHNIQUE

Pre-estimation tests are conducted before the estimation, and post-estimation tests are conducted after the estimation of models used in this study. The econometric analysis passed through the following tests and estimations. EViews version nine has been used for the analysis.

3.3.3.3.   STRUCTURAL BREAKS AND STATIONARY TEST

The stationary test is conducted to see the stationarity of the time series variables in the model and know the order at which the variables are integrated. This test helps us to be cautious for erroneous model specification and to avoid a meaningless spurious estimation that might result from the regression of unrelated time series variables. Augmented Dickey-Fuller test for unit root will predominantly be devised to test the stationarity of the variables. For those variables with structural breaks, the Augmented Dickey-Fuller test is used with some modification for the structural break; the unit root with break test.

3.3.3.4.   CO-INTEGRATION TEST

The two steps Engle-Granger co-integration test is used to see the co-integration between the dependent and the explanatory time series variables. In doing so, the error term from the regression analysis is predicted and tested for stationary. If the predicted residual term is found stationary, then the dependent variable is said to be co-integrated with the explanatory variables; and the co-integration of variables implies the existence of long-term relationships between the variables.

3.3.3.5.   REGRESSION ANALYSIS

The variables under investigation are dependent on each other, and it is expected that the models used for the estimation are suffered from the problem of endogeneity. To resolve the anticipated endogeneity problem General Method of Moment (GMM) method was used for the estimation of the specified econometric model. The coefficients and other statistical estimates obtained from the regression analysis are presented and interpreted accordingly.

3.3.3.6.   DIAGNOSTIC CHECKS

A post estimation test was conducted following each of the estimations. Wald chi-square test is used to test for the significant crowed-in out the effect of foreign direct investment on domestic investment. Both individual and joint significant tests are conducted to see the short-run and long-run effects respectively.

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4. CHAPTER FOUR: ECONOMIC POLICY AND PERFORMANCE OF PRIVATE DOMESTIC AND FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH IN ETHIOPIA

This section of the paper is meant to give an overview of the Ethiopian economy; more specifically, the economic growth, performances of both domestic and private investments, and the policy and institutional aspects of private investments.

4.1. ECONOMIC POLICY AND TRENDS IN ECONOMIC GROWTH

Ethiopia has initiated the poverty reduction strategy in 2000 and started to implement the first three-year Sustainable Development and Poverty Reduction Program (SDPRP), which covered 2002-2005.

In 2005, Ethiopia launched the first five-year Plan for Accelerated and Sustainable Development to End Poverty (PASDEP), which can be considered as the continuation of the SDPRP strategic directions but also bringing in new elements and scaling up the efforts to achieve the Millennium Development Goals.

The GTP-I was aimed at sustaining the rapid growth performance registered during the previous five years national plan. The planning horizon during GTP-I was from 2010/2011 to 2014/2015, and the real GDP growth averaged 10.1% per annum during the period of GTP-I. Ethiopia's achievements over the years in the first GTP have also attracted global recognition, and help the image of the country for the better, as can be observed from the increased inflow of FDI. (National_Planning_Commission, 2016)

With a vision of transforming the Ethiopian economy into a lower middle-income category by 2025, Ethiopia has started to implement the second growth and transformation plan (GTP II) in 2016. The plan can be seen as the policy matrix for different social, political and economic issues. The plan has proposed to achieve the stated objectives through increasing the productivity, quality and competitiveness of the productive sectors; enhancing the capacity, participation and equitable benefit of citizens and thereby realizing the developmental political economy through strengthening the democratic developmental state. (ibid)
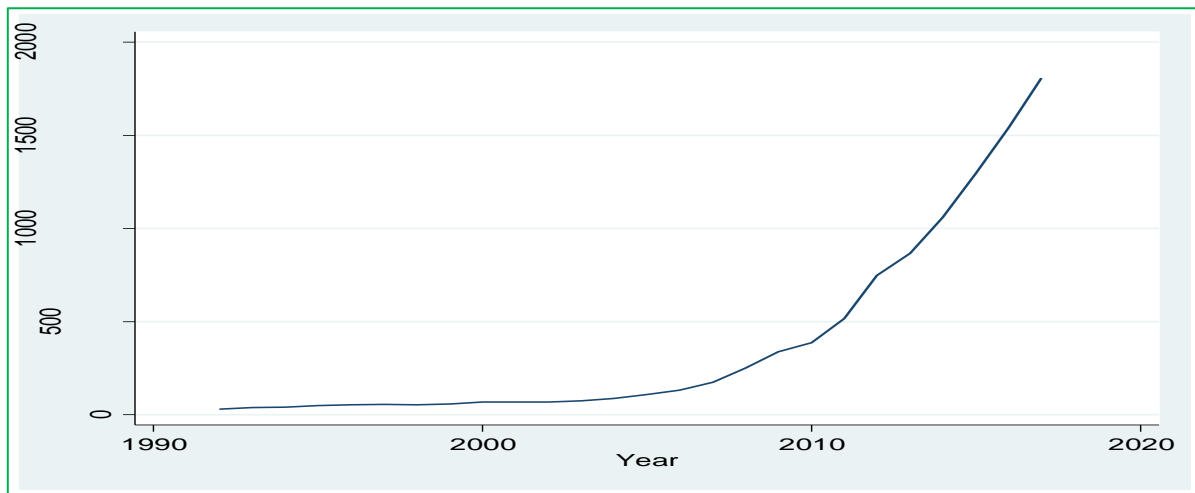
Figure 1: Trends in GDP
Source: Own graphical presentation of the Real GDP of Ethiopia from 1995 to 2016

The average annual GDP was 71 billion Birr over the 22 years that are considered in this study. As it is depicted in **Error! Reference source not found.**, After the sluggish growth in the e conomy, Ethiopia has experienced a significant increase in its annual GDP starting from 2004. The three-year SDPRP might contribute to this significant growth in the national output as it was observed just before the last year of the project implementation period. During the years from 1995 to 2016, the GDP has grown at an average rate of 7.44% while the economy faces a yearly average inflation rate of 9.43%. As is presented in below, inflation has reached its pick in 2008 with a rate of 44.36% followed by 33.25% in 2011. After its pick; 13.57% in 2004 the economy seems to fluctuate around a 10% growth rate
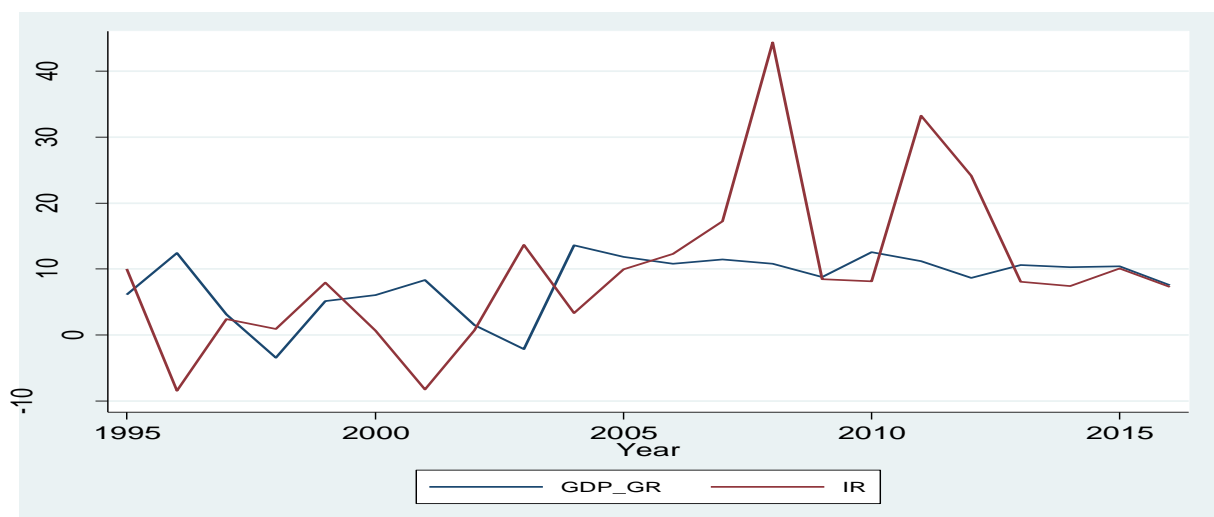
between 2004 and 2016.

Figure 2: Trends of GDP growth rate and Inflation rate
Source: Own graphical presentation of Real GDP growth rate and the inflation rate of Ethiopia from 1995 to 2016

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4.2.   ETHIOPIAN INVESTMENT POLICY AND INSTITUTIONS

Ethiopia's vision to become a middle-income country by 2025 has a broader target which includes aggressive poverty reduction and advances in health, education, and the environment. The three key pillars to achieving the target are economic, social, and environmental developments; the economic development is planned to be realized focusing on light manufacturing mainly textile & leather garment focusing on education, health, sustainable use of natural resources and boosting resilience to adverse impacts of climate change. (EIC, 2013)

Acknowledging the vital role of investment in the realization of the aforementioned targets the government of Ethiopian has modified its investment policy for more than 10 times in the last 25 years, in favor of investors. The major reforms on investment proclamations and regulations that are worth mentioning are the proclamations and regulations issued under proclamations 7/1996, 37/1996, 35/1998, 36/1998, 116/1998, 168/1999, 280/2002, 84/2003, 373/2003, 146/2008, 769/2012 and 849/2014.

The 1992 investment proclamation has established the Ethiopian investment office. The proclamation provided few incentives only in the agricultural sector (no incentive for social sector) and foreign investors were expected to deposit $125,000 in blocked account to invest in Ethiopia. The investment proclamation was amended in 1996 to create additional incentives for foreign investors. Major new provisions included the duty-free entry of most capital goods, a cut in the capital gains tax, inclusion of additional sectors such as health, education, tourism, consultancy services in the incentive scheme, removal of the requirement for foreign investors to deposit 125,000 USD. Consequently, the number of foreign investment projects approved has significantly increased.

Investment Proclamation 116/1998 was issued in 1998 which redefined domestic investors to include foreign nationals (Ethiopian by birth), allowed private-government joint investments in defense and telecommunication, and opening hydro-power electric generation to domestic and foreign investors.

The 2002's, investment proclamation 280/2002 were re-established the "Ethiopian Investment Authority" and came with some specific provisions; some of the provisions provided under this proclamation were; reduction of the minimum investment capital

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required for foreign investors from 50,000 USD to 100,000 USD (wholly foreign), 25,000 USD to 60,000 USD (Jointly with domestic), avoidance of minimum investment capital requirement for foreign investor reinvesting their profits or dividends or exporting at least 75% of his output, permit to a foreign investor or foreign national treated as a domestic investor the right to own a dwelling house and other immovable property required for his investment, permit to investors to employ duly qualified expatriate experts required for the operation of their business. The 2003's, investment proclamation 375/2003 was issued to amend the re-enactment proclamation 280/2002, it renamed the Authority as Ethiopian Investment Commission. Moreover, it had some modifications to re-investment, technology transfer agreement and other issues related to the application for investment permits by foreign and domestic investors.
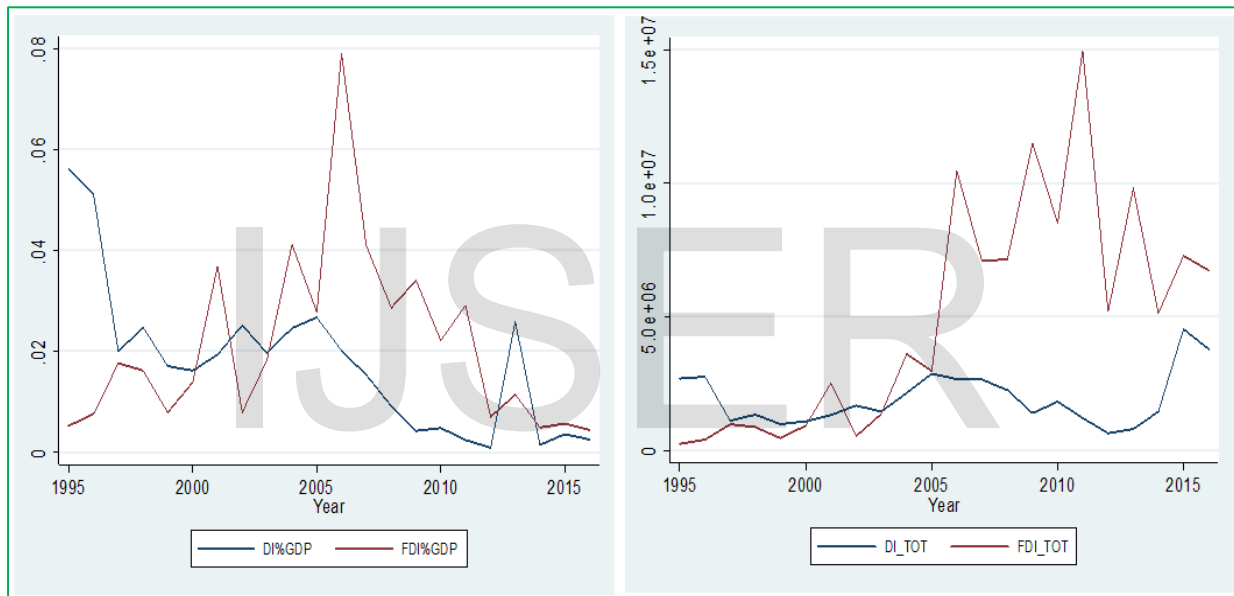
Notes: DI%GDP: DI as a Percentage of GDP,
FDI%GDP: FDI as a Percentage of GDP,
DI_TOT: Total DI, and FDI_TOT: Total FDI
Figure 3: Trends on FDI and DI
Source: Own graphical presentation of DI and FDI.

Despite the efforts made by the government to encourage investment and foreign investors, the flows of FDI were quite low until the millennium. The average annual FDI flows to Ethiopia from 2003 to 2006 were only $399 million, which is only 1.56% of FDI flows into Africa. FDI as a percentage of GDP of Ethiopia was 8.1% in 2006, compared with 1.6% for African countries as a group (UNCTAD, 2007).

As it is presented in the above , both the percentages of domestic and foreign direct investments to GDP were fallen until the millennium, though the government endeavor in

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promotion of investment was meant to bring some positive results the political instability and the Ethio-Eritrean war during 1998 to 2000 seems to have an attribution for the significant decline of both domestic and foreign investments.

In absolute terms, FDI flows to Ethiopia has increased in absolute terms from an annual average of 693 million in 1995-1997 to 4.77 billion in 1998-2001 although there are fluctuations. The unstable political environment of the country may be one of the reasons for the fluctuations. As we can see from above, during the Ethio-Eritrea war (1998-2000) the inflow of FDI had fallen to a large extent. Besides, in 2005, during the country's' election crisis time, the FDI flows declined to 2.9 billion from 3.6 billion in the preceding year of 2004.

Domestic investment is higher than the flow of foreign direct investment until the millennium. After exhibiting some fluctuation persisted within the five years after the millennium, a large sum of FDI has flown in and starts to superimpose itself on top of the DI. As is depicted in the above the shift began around 2003, then after, FDI has shown a sharp increase and even it reached its record level at about 2011. However, the greater rate of GDP growth has resulted in the percentage of FDI to GDP to decline sharply from 2005 to 2012. Then after both the FDI and DI decreased, though the FDI still set itself above DI.

As it is stated in the preamble of the 2012 proclamation was issued with the intent of encouragement and expansion of investment, especially in the manufacturing sector, strengthening the domestic production capacity and further increase the inflow of capital and speed up the transfer of technology. Moreover, the proclamation has presented the consideration that the establishment of an industrial development zone was given, by creating enabling and competitive conditions, to interrelate manufacturing sectors based on value creation as well as to attract and expand investment.

Though the political instability and insecurity issues dominated during and after 2013 seem to dominate and negatively affect the government's endeavor in creating an enabling environment and promoting investment in the country. As it is depicted in above, both the percentage of FDI and DI to GDP has significantly decreased, though it showed a fluctuation in absolute term. The proclamation 849/2014 has made some amendments to

its precursor 2012 investment proclamation and it re-established the agency as Ethiopian Investment Commission.

4.2.1. FDI AND DOMESTIC INVESTMENT: SECTORAL DISTRIBUTION

Looking into the trends of domestic and foreign direct investment at a sectoral level, some degree of variation was observed on the trends of sectoral investments. As it is presented in below, until the millennium, the agricultural sector domestic and foreign direct investments have shown a steady trend and the domestic investment was higher than the foreign direct investment. However, after the millennium, the FDI starts to set itself above the DI, and a significant increment was observed after 2002; this phenomenon might be associated with the incentives provided in the 2002s' investment proclamation.

Concerning the service sector FDI it looks that, among other confounding factors, the sector-specific incentives of the 2012 proclamation seem to favor the agricultural and manufacturing sectors might discourage those foreign investors who have a plan to invest in the service sector.


Figure 4: Comparison of FDI and DI: Agricultural, Manufacturing and Service sectors
Source: Own Calculation; graphical presentation of sectoral FDI and DI.

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With all the incentives that the government has provided, both the domestic and foreign direct investments made in the agricultural sector had not grown significantly. As it is depicted in   below, an astonishing variation was observed between the domestic and foreign investors in investing in manufacturing and service sectors; domestic investors tend to invest in service sectors while the foreign direct investors preferred the manufacturing sectors. The growth of FDI inflow in the manufacturing sector may have resulted from the policy incentives and other efforts the government has been made to attract the FDI inflow in the manufacturing sector. (i.e. the establishment of Industry parks in different regional states of Ethiopia)
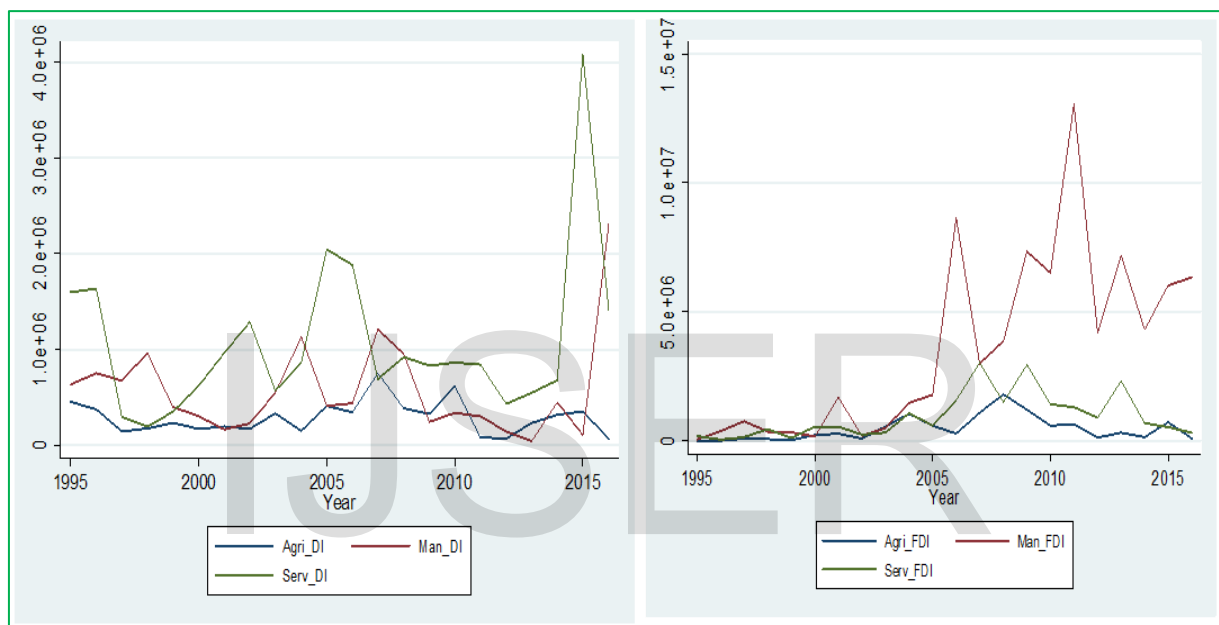
Figure 5: Comparison of Agricultural, Manufacturing and Service sectors FDI and DI
Source: Own Calculation; graphical presentation of sectoral FDI and DI.

As it been depicted in the models specified in the third chapter, FDI per GDP was used for the model specified both at the aggregate and sectoral levels. In light of this, the researcher has tried to have a closer look at the trend of the variables in the model. From the graphical presentation of the variables depicted in *Figure 6* below, one can anticipate the possibility of structural breaks. This will help us to identify the period at which the variables potentially exhibit break, and take appropriate decisions on the method to be used for the unit root test on the variable.

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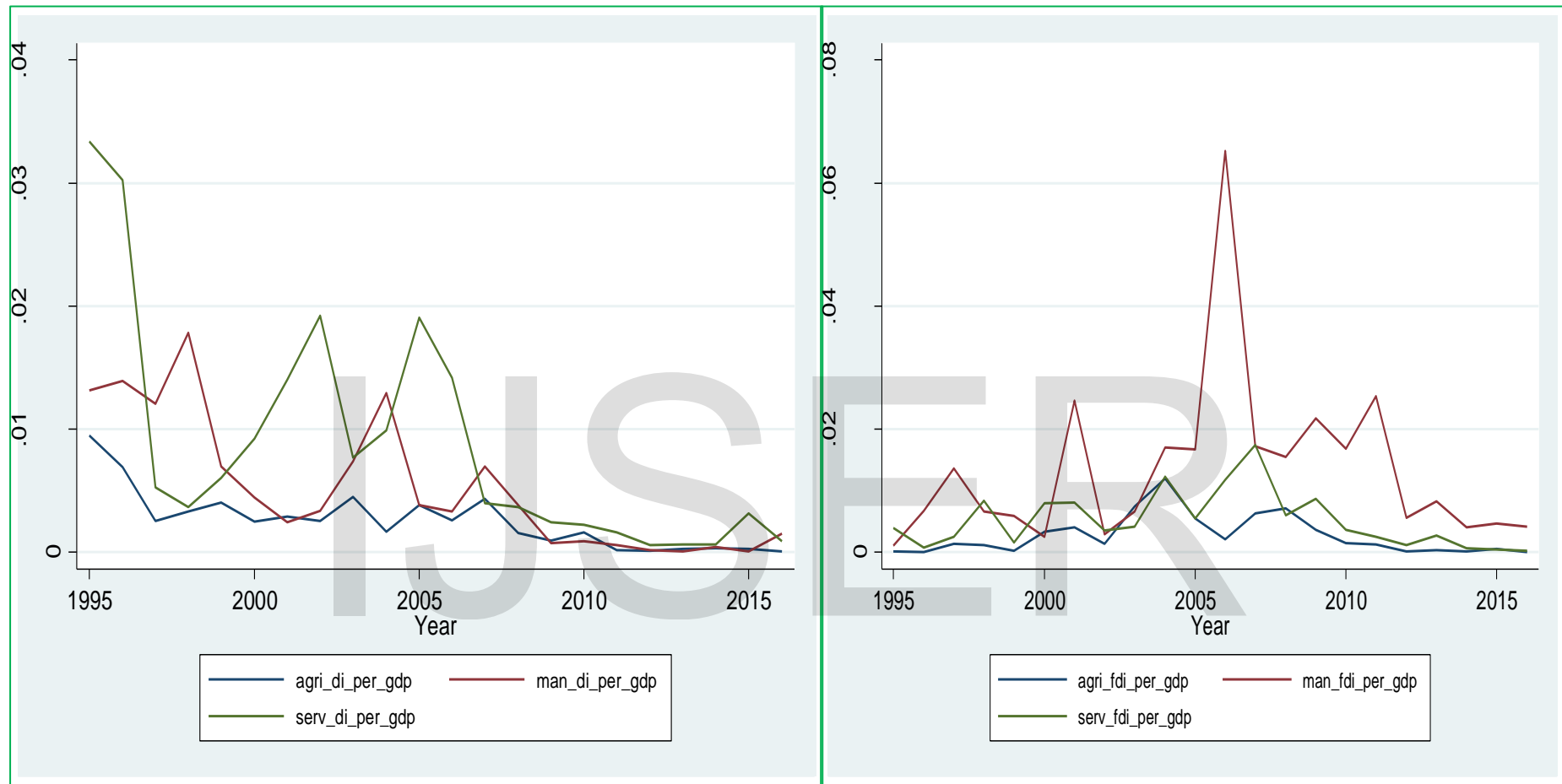
Figure 6: Comparison of Agricultural, Manufacturing and Service sectors FDI and DI per GDP
Source: Own graphical presentation of sectoral DI and FDI.

4.2.2. FDI AND DOMESTIC INVESTMENT: REGIONAL DISTRIBUTION

The 2012 proclamation has stated that one of the objectives of the proclamation was to enhance and promote the equitable distribution of investments among regions and benefit the society by ensuring competitiveness among investments made by investors. However, the data obtained from the Ethiopian investment commission has shown that there is a higher disparity in regional distribution of FDI.

Looking at *Figure 7* below, it can be seen that Addis Ababa, Oromia; the most populous region and Amhara regions take the largest share of FDI inflows to Ethiopia. For the period from July 1992 to July 2018, in terms of planned capital, Oromia, Addis Ababa and Amhara regions have attracted 39.78, 37.18%, and 9.80% of the total FDI inflows to Ethiopia respectively. In other words, these three regions accounted for 86.5% of FDI flows to the country. Conversely, Gambella, Afar, Somali and Benishangul-Gumuz performance in attracting FDI is very poor. Benishangul-Gumuz Region, for instance, has not attracted any foreign investment since 2011.

	Addis Ababa	Afar	Amhara	B.Gumze	Dire Dawa	Gambella	Harari	Multiregional	Oromia	SNNPR	Somali	Tigray
■ Series1	37.18%	0.32%	9.50%	0.15%	1.63%	0.89%	0.00%	3.24%	39.79%	4.88%	0.17%	2.25%
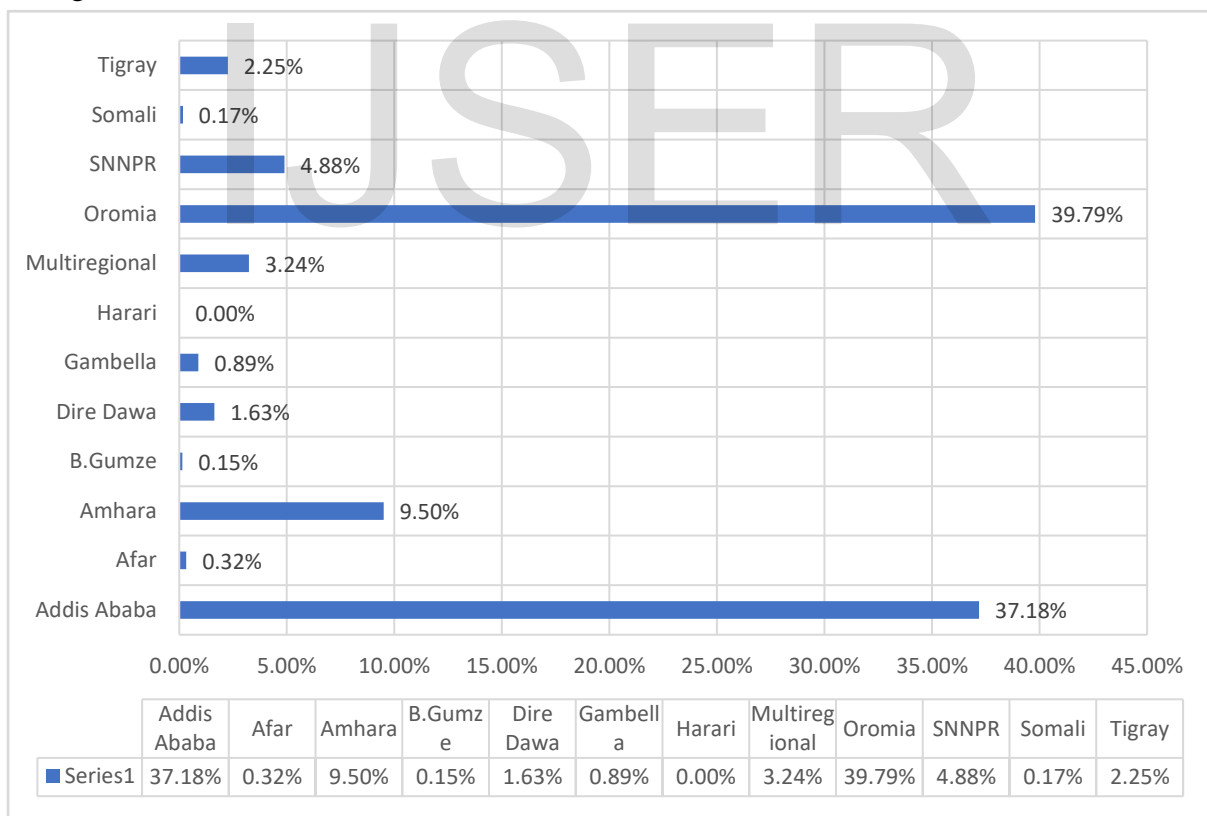
Figure 7: Regional distribution of FDI
Source: own calculation.

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In general, FDI flows to Ethiopia have been unevenly distributed among the regions. Even though the incentive system encourages foreign investors to invest in the least developed regions (Gambella, Afar, Somali, and Benishangul-Gumuz) of the country by providing special benefits including provision of land free of any charge, their performance in attracting FDI is very poor (EIA, 2008). Addis Ababa is the major destination for FDI flows to Ethiopia, as it has better infrastructure, a stable political environment and a better supply of trained manpower. Oromia Region has attracted a sizable amount of FDI due to its proximity to Addis Ababa, availability of natural resources (arable land) and market. (Woldemeskel, 2008)

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5. CHAPTER FIVE: DATA ANALYSIS AND INTERPRETATION

In this part of the paper, data obtained from different data sources on the key variables will be described, analyzed and interpreted. The econometric analysis was made at two levels; first, the study sought the effect of FDI on domestic investment at the aggregate level, then the analysis is made to see the effect at a sectoral level. Accordingly, as it is presented in the methodology part of this paper, two different econometric models were used for the aggregate and sectoral levels.

The Metadata collected on the key variables; FDI, Domestic Investment and GDP were obtained from two different sources. The FDI and Domestic Investment data were taken from the Ethiopian Investment Commission. The commission has taken the local current currency as a measuring unit and data were basically organized on the bases of information the commission collected from local and foreign investors who have applied and got the legal license and entered into operation. To be consistent with the measuring unit the researcher preferred to take the GDP data from the World Bank indicator which is measured in current local currency.

5.1. STRUCTURAL BREAK TEST

A structural break is an abrupt change of a time series at a point in time. This change could involve a change in mean or a change in the other parameters of the process that produce the series. Being able to detect when the structure of the time series changes can give us insights into the problem we are studying. Structural break tests help us to determine when and whether there is a significant change in our data. Besides, it helps the researchers to find out whether the macro-economic time series is stationary or non-stationary in levels. Using the common methods to test the stationarity of variables with structural breaks may lead to a wrong decision; specifically, the ADF test may result in wrong acceptance of the null hypothesis; the existence of unit root. (Hailegiorgis, 2018)

Accordingly, the researcher has gone through a structural break test to understand the behaviour of the time series variables in the model. The result from the Bai-Perron tests of multiple breakpoint tests have shown that total FDI per GDP, and two of the sectoral FDI per GDP; Agricultural and Manufacturing have shown no structural break during the period of the study; 1995 to 2016. On the other hand, the inflation rate, GDP growth rate and total investment per GDP have exhibited a structural break in the year, 2003, 2004 and 2010

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respectively, while service sector FDI has shown multiple periods structural break in 2004 and 2010. (please see the result table in annex 1).

5.2. STATIONARY TEST

There are several ways of testing for the presence of a unit root, the Augmented Dickey-Fuller (ADF) and the Phillips-Peron tests are among the widely used methods to determine the existence of a unit root. The researcher has applied the commonly applied Augmented Dickey Fuller (ADF) tests for testing the stationarity of a time series variable by directly testing the null of the unit root (non-stationarity). However, the unit root with break test; the modified version of the Augmented Dickey-Fuller test is used for those variables that exhibited structural break.

The method used and the results obtained from the unit root tests conducted on all of the variables in the models are summarized and presented in the tables *Table 3* and **Error! Reference source not found.** below. As it is depicted in *Table 3* below, the unit root test conducted at the level of the variables have shown that two of the variables; GDP growth rate and service sector FDI have were found to be stationary at their level; hence, they are integrated of level 0 (I_0). While the rest of the variables were not stationary at their level.

The variables with the unit root problem were gone through a similar test at their first difference, the result obtained from the test is presented in the following **Error! Reference source not found.**. The result from the test has shown that all the variables are stationary at their first difference, and hence they are integrated of their first difference.

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Table 3: Summary of the stationarity of the variables under investigation at their base

| S.N | Variable | The method used for the unit root test | Test Statistics | Critical Values at | | | Decision |
				1% Critical	5% Critical	10% Critical	
1	Agri_FDI_per_GDP	Augmented Dickey-Fuller	-1.549	-4.533	-3.674	-3.277	Not Stationary
2	FDI_GDP	Augmented Dickey-Fuller	-2.665	-4.533	-3.674	-3.277	Not Stationary
3	GDP_GR	ADF with break test	-6.742	-4.949	-4.444	-4.194	Stationary
4	Invgdp	ADF with break test	-4.288	-4.949	-4.444	-4.194	Not Stationary
5	IR	ADF with break test	-4.196	-4.949	-4.444	-4.194	Not Stationary
6	Manf_FDI_per_GDP	Augmented Dickey-Fuller	-3.572	-4.533	-3.674	-3.277	Not Stationary
7	Serv_FDI_per_GDP	ADF with break test	-3.678	-4.533	-3.674	-3.277	Stationary

FDI_GDP: Total FDI per GDP

Source: Own calculation, EViews result for unit root test for the variables at their base.

Table 4: Summary of the stationarity of the variables under investigation at their first difference

| S.N | Variable | The method used for the unit root test | Test Statistics | Critical Values at | | | Decision |
				1% Critical	5% Critical	10% Critical	
1	Agri_FDI_per_GDP	Augmented Dickey-Fuller	-7.491	-4.533	-3.674	-3.277	Stationary
2	FDI_GDP	Augmented Dickey-Fuller	-7.365	-4.533	-3.674	-3.277	Stationary
3	Invgdp	ADF with break test	-8.236	-4.949	-4.444	-4.194	Stationary
4	IR	ADF with break test	-7.757	-4.949	-4.444	-4.194	Stationary
5	Manf_FDI_per_GDP	Augmented Dickey-Fuller	-4.114	-4.533	-3.674	-3.277	Stationary

FDI_GDP: Total FDI per GDP

Source: Own calculation, EViews result for unit root test for the variables at their base.

5.3.   CO-INTEGRATION TEST

The Engle-Granger co-integration test was deployed to test whether the aggregate level variables used in the model were co-integrated. In doing so, the error term from the regression analysis is predicted and tested for stationary. The result obtained from the test is presented the following *Table 5*.

Table 5: The result of Co-integration test for aggregate level variables

Null Hypothesis: RESID_AGG has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.922089	0.0001
Test critical values:	1% level		-3.808546	
	5% level		-3.020686	
	10% level		-2.650413	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(RESID_AGG)				
Method: Least Squares				
Sample (adjusted): 1997 2016				
Included observations: 20 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID_AGG(-1)	-1.280898	0.216292	-5.922089	0.0000
C	-0.000371	0.001361	-0.272740	0.7882
R-squared	0.660833	Mean dependent var		-0.000551
Adjusted R-squared	0.641990	S.D. dependent var		0.010166
S.E. of regression	0.006083	Akaike info criterion		-7.272002
Sum squared resid	0.000666	Schwarz criterion		-7.172429
Log likelihood	74.72002	Hannan-Quinn criter.		-7.252564
F-statistic	35.07114	Durbin-Watson stat		1.921354
Prob(F-statistic)	0.000013			

Source: Own calculation, Eveiwes result for Cointegration test for aggregate level variables.

As depicted in *Table 5* above, the error term from the aggregate model is stationary at its base implying that the variables in the aggregate model are co-integrated implying the long-run relationship between total investment and FDI.

A similar cointegration test was conducted using the sectoral FDI, and the result obtained from the test has shown that the sectoral level FDI and variables used in the model have exhibited long-run relationship, the result obtained from the test is presented in

Table *6* below.

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Table 6: The result of Co-integration test for sectoral FDI

Null Hypothesis: RESID_SECTORAL has a unit root Exogenous: Constant Lag Length: 0 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.975935	0.0001
Test critical values:	1% level		-3.808546	
	5% level		-3.020686	
	10% level		-2.650413	
*MacKinnon (1996) one-sided p-values. Augmented Dickey-Fuller Test Equation Dependent Variable: D(RESID_SECTORAL) Method: Least Squares Sample (adjusted): 1997 2016 Included observations: 20 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID_SECTORAL (-1)	-1.319079	0.220732	-5.975935	0.0000
C	-0.000183	0.001166	-0.156659	0.8773
R-squared	0.664878	Mean dependent var		-0.000400
Adjusted R-squared	0.646260	S.D. dependent var		0.008762
S.E. of regression	0.005211	Akaike info criterion		-7.581437
Sum squared resid	0.000489	Schwarz criterion		-7.481864
Log likelihood	77.81437	Hannan-Quinn criter.		-7.561999
F-statistic	35.71180	Durbin-Watson stat		1.872634
Prob(F-statistic)	0.000012			

Source: Own calculation, Eveiwes result for Cointegration test for Sectoral FDI.

5.3.1. ESTIMATION TO THE AGGREGATE ECONOMY

Before going into the sectoral analysis, the study tried to see the effect of FDI on the Domestic investment at the aggregate level. The model specified by (Kasule Twaha Ahmeda.et.al, 2014), was used to see whether FDI has a displacement or complementary effect on DI.

The aggregate level estimation is conducted using the crowed in/out model specified in equation (7), besides, following estimation of the model, the joint significance test is conducted and the coefficients of investment and FDI are used to see the displacement effect of FDI on DI using the following criteria.

$$\rho = \frac{\beta_2 + \beta_3}{1 - \beta_1}$$

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To deal with the endogeneity problem GMM was used for the estimation. The result of the estimation and the effect of FDI on DI is presented in *Table 7* below.

Table 7: The result of aggregate level regression analysis

Dependent Variable: INVGDP
Method: Generalized Method of Moments
Sample (adjusted): 1996 2016
Included observations: 21 after adjustments
Linear estimation with 1 weight update
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed bandwidth = 3.0000)
Standard errors & covariance computed using estimation weighting matrix
No d.f. adjustment for standard errors & covariance
Instrument specification: L_INVGDP FDI_GDP L_FDI_GDP GDP_GR L_GDP_GR IR L_IR D1 D2 D3 D4 D5
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
L_INVGDP	-0.044895	0.160960	-0.278918	0.7866
FDI_GDP	0.795245	0.088897	8.945739	0.0000
L_FDI_GDP	-0.073299	0.134480	-0.545059	0.5990
GDP_GR	0.000941	0.000444	2.118597	0.0632
L_GDP_GR	9.22E-05	0.000240	0.384561	0.7095
IR	-3.97E-05	0.000171	-0.231680	0.8220
L_IR	0.000188	0.000133	1.411107	0.1918
D1	0.033055	0.006258	5.281606	0.0005
D2	0.020506	0.004959	4.135228	0.0025
D3	0.024604	0.005154	4.773594	0.0010
D4	0.001036	0.004759	0.217740	0.8325
D5	-0.002709	0.005129	-0.528186	0.6101

R-squared	0.920325	Mean dependent var		0.037875
Adjusted R-squared	0.822945	S.D. dependent var		0.022395
S.E. of regression	0.009424	Sum squared resid		0.000799
Durbin-Watson stat	2.464695	J-statistic		3.14E-43
Instrument rank	12			

Source: Own calculation, EViews result from the aggregate level regression analysis.

From the result presented in *Table 7* above, in the short run, FDI has a positive significant effect; with a coefficient ***0.795***.*** Despite the fact that FDI has a positive significant effect in the short, the crowed in/out effect of FDI on domestic investment should be verified using the wald test conducted on the coefficient of FDI to GDP ratio. The EViews result obtained from the wald test is presented below.

Wald Test:			
Equation: AGGREGATE			
Test Statistic	Value	df	Probability
t-statistic	-1.507862	9	0.1659
F-statistic	2.273649	(1, 9)	0.1659
Chi-square	2.273649	1	0.1316
Null Hypothesis: C(2)=1			
Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
-1 + C(2)		-0.204755	0.135792

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As it is depicted in the wald test result presented above, we can't reject the null hypothesis that states $\beta_1 = 1$. As a result, in aggregate, foreign direct investment has neither crowed in nor crowed out effect on domestic investment in the short run.

A joint significant wald test was conducted to see the long-run effect of FDI on DI. The result obtained from the test can't reject the null hypothesis $\boldsymbol{\rho} = \frac{\beta_2 + \beta_3}{1 - \beta_1} = \mathbf{1}$. Therefore, we can infer that in the long run, FDI has a neutral effect on DI.

Wald Test: Equation: AGGREGATE			
Test Statistic	Value	df	Probability
t-statistic	0.857629	9	0.4134
F-statistic	0.735527	(1, 9)	0.4134
Chi-square	0.735527	1	0.3911
Null Hypothesis: (C(2)+C(3))/(1-C(2))=1 Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
-1 + (C(2) + C(3))/(1 - C(2))		2.525897	2.945210
Delta method computed using analytic derivatives.			

Generally, at the aggregate level, FDI has neither crowed in nor crowed out effect on domestic investment, both in the short run and long run. This is to mean that, keeping other things constant, one-birr investment by foreign investors (FDI), increase the total investment only by about one birr.

The coefficient of policy variable incorporated in the model has shown that the proclamations and amendments made in *1996, 1999, and 2003* have a significant positive effect on total investment.

The value of R^2; 0.9203, has shown that the model is fitted well and 92% of the variation on total investment is explained by the variation of variables in the model.

5.3.2. ESTIMATION TO THE SECTORAL ECONOMY
5.3.3. ESTIMATION TO THE SECTORAL CROWD IN/OUT MODEL

The main objective of this study is to see the sectoral effect of FDI on domestic investment, accordingly, the sectoral crowed in/crowed out model specified in equation (8) is used to see the sectoral effect of FDI on domestic investment.

To resolve the anticipated endogeneity problem GMM was used for the estimation, and the result of the estimation is presented in *Table 8* below.

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Table 8: The result of regression analysis at the sectoral level

Dependent Variable: INVGDP
Method: Generalized Method of Moments
Sample (adjusted): 1996 2016
Included observations: 21 after adjustments
Linear estimation with 1 weight update
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed bandwidth = 3.0000)
Standard errors & covariance computed using estimation weighting matrix
Instrument specification: L_INVGDP AGRI_FDI_PER_GDP
  L_AGRI_FDI_PER_GDP MANF_FDI_PER_GDP L_MANF_FDI_PER_G
  DP SERV_FDI_PER_GDP L_SERV_FDI_PER_GDP GDP_GR
  L_GDP_GR IR L_IR D1 D2 D3 D4 D5
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
L_INVGDP	-0.317347	0.335046	-0.947175	0.3870
AGRI_FDI_PER_GDP	0.814892	2.036958	0.400054	0.7056
L_AGRI_FDI_PER_GDP	-0.861639	1.716481	-0.501980	0.6370
MANF_FDI_PER_GDP	0.908086	0.343452	2.643997	0.0458
L_MANF_FDI_PER_GDP	0.014295	0.494021	0.028936	0.9780
SERV_FDI_PER_GDP	0.046028	1.673433	0.027505	0.9791
L_SERV_FDI_PER_GDP	1.755947	1.660396	1.057547	0.3387
GDP_GR	0.000759	0.000637	1.192510	0.2866
L_GDP_GR	0.000332	0.000689	0.482122	0.6501
IR	-0.000238	0.000284	-0.840928	0.4387
L_IR	0.000379	0.000284	1.334728	0.2395
D1	0.043007	0.009744	4.413920	0.0069
D2	0.022726	0.007641	2.974138	0.0310
D3	0.034797	0.018140	1.918179	0.1132
D4	-0.000498	0.010039	-0.049602	0.9624
D5	-0.002353	0.008916	-0.263900	0.8024
R-squared	0.943297	Mean dependent var		0.037875
Adjusted R-squared	0.773189	S.D. dependent var		0.022395
S.E. of regression	0.010666	Sum squared resid		0.000569
Durbin-Watson stat	2.569923	J-statistic		0.000000
Instrument rank	16			

Source: Own calculation, EViews result from the sectoral level regression analysis.

From the result presented in *Table 8* above, in the short-run manufacturing and service sectors FDI have a significant positive effect on investment; while the agricultural sector FDI has no significant effect on total investment.

The wald test conducted to see the crowd in/crowed out the effect of sectoral FDI on DI. As it is presented in *Table 9* below the wald test on the sectoral variables shows that we can't reject the null hypothesis that states the coefficients of the manufacturing and service sectors FDI is 1. From this result, we can infer that both manufacturing and service sectors FDI have neither crowed in nor crowed out effect on DI. However, the lag of service sector FDI has a positive and significant effect on DI; with a coefficient of *1.75*. However, the wald test conducted on the lag of service sector FDI confirmed that the null hypothesis that states

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the coefficient of lagged service sector FDI is equal to one is not rejected, and hence the service sector FDI has a neutral effect on DI.

Table 9: Summary of the Result of Wald significant test on the short-run effect of sectoral FDI

Sector	Test Statistic	Value	df	Probability	Decision
Agriculture	t-statistic	-0.090875	5	0.9311	Can't reject the null hypothesis, implying that the coefficient of Agriculture, Manufacturing, and Service sectors FDI doesn't significantly different from one.
Agriculture	F-statistic	0.008258	(1, 5)	0.9311	
Agriculture	Chi-square	0.008258	1	0.9276	
Manufacturing	t-statistic	-0.267619	5	0.7997	
Manufacturing	F-statistic	0.071620	(1, 5)	0.7997	
Manufacturing	Chi-square	0.071620	1	0.7890	
Service	t-statistic	-0.570069	5	0.5933	
Service	F-statistic	0.324979	(1, 5)	0.5933	
Service	Chi-square	0.324979	1	0.5686	

Source: Own calculation, EViews result from Wald test for the short run effect of sectoral FDI

The findings were also supported by the qualitative data taken from organizations working on promotion and service provision to investors. According to the officials of the consulted organizations, though the government is promoting investment focusing on Agro-processing and light industries, most of the domestic investors have kept on investing in service sectors, and the increased inflow of FDI on the manufacturing sector seems to have insignificant effect in encouraging domestic investors.

The government endeavor in creating a conducive environment for local investors and creating the opportunity to have a successful knowledge and technological transfer seems to be ineffective. According to the officials from Industrial Parks Development Corporation (IPDC), most of the investors in industrial parks are foreign investors, as a result, local investors have not in a position to fully utilize the spill-over opportunity they might have through technology and knowledge transfer.

The coefficient of policy variable incorporated in the model has shown that the proclamations and amendments made in *1996, and 1999* have a significant positive effect on total investment.

The value of R^2; 0.9433, has shown that the model is fitted well and 94% of the variation on total investment is explained by the variation of the variables in the model.

The long run sectoral effect is tested by the joint significance of coefficients of sectoral FDIs. The result from the wald test conducted on the joint significance of the coefficients presented in *Table 10* below.

Table 10: Summary of the result of Wald significant test on the long-run effect of sectoral FDI

Sector	Test Statistic	Value	df	Probability	Decision
Agriculture	t-statistic	-0.090875	5	0.9311	Can't reject the null hypothesis, implying that the coefficient of Agriculture, Manufacturing, and Service sectors FDI and their lags are not jointly significantly different from one.
Agriculture	F-statistic	0.008258	(1, 5)	0.9311	
Agriculture	Chi-square	0.008258	1	0.9276	
Manufacturing	t-statistic	-0.424149	5	0.6891	
Manufacturing	F-statistic	0.179902	(1, 5)	0.6891	
Manufacturing	Chi-square	0.179902	1	0.6715	
Service	t-statistic	0.184232	5	0.8611	
Service	F-statistic	0.033942	(1, 5)	0.8611	
Service	Chi-square	0.033942	1	0.8538	

Source: Own calculation, EViews result from Wald test for the long run effect of sectoral FDI

Form the above finding, we can infer that, in the long run, all sectors of FDI under investigation have neither crowed in nor crowed out effect on DI. However, it should be noted here that this study was mainly focused on the spillover effect of FDI on DI, and hence the neutral long-term effect doesn't mean that FDI has no effect on the overall economy of the host country.

Following the result obtained from this study, the researcher has tried to conduct key informant interviews from primary sources so as to verify the result, as the domestic investors are not found to be benefited from the identified priority sectors; agriculture and manufacturing FDI sectors. The key informant interview was conducted with officials of EIC and regional investment commission liaison offices, and IPDC. The key informant interview conducted with the key informants has supported the result obtained from this study.

"*We are promoting investment to attract, and retain investments through policy advocacy, and creating a conducive environment for potential investors, like development of industrial parks, and provision of different incentives for the foreign and domestic investors. More specifically, we are working on 14 priority sectors identified by the government and incorporated in the GTP-II plan. These identified sectors are light manufacturing, textile and garment, leather and so on…, but in my opinion, we need also focus on building the capacity of local investors so as they are able to tap the positive spill-over from the international investors. Besides, Truism, logistics and other services should also be promoted.*" said one of the interviewed officials.

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6. CHAPTER SIX: SUMMARY, CONCLUSION, AND IMPLICATION

6.1. SUMMARY

Apart from the direct impact that foreign direct investment has on the economic growth of the recipient country, FDI has expected to have an indirect spill-over effect on domestic investment. It has been recalled that the main objective of this study was to see the short run and long run crowed in/out effect of foreign direct investment on domestic investment.

The descriptive and other quantitative analysis method was employed to conduct this study. This chapter is devoted to summaries the key findings of the analysis of the data which was analysed and presented in the previous chapter. The findings of the paper are summarized and presented in accordance with the research questions that this paper is intended to answer.

6.1.1. AGGREGATE LEVEL ANALYSIS

The cointegration tests conduct at the aggregate and sectoral level, have shown that there is a long-run relationship between total investment or capital formation and inward FDI and GDP.

The general method of moment (GMM) estimation method and the wald tests have been applied to test both the short run and long run crowed in/out effect of foreign direct investment on domestic investment. The result from the aggregate level analysis has reviled that FDI has a neutral effect on domestic investment. It has neither crowed in nor crowed off effect both in the short and long run.

The coefficient of policy variable incorporated in the model has shown that the proclamations and amendments made in 1996, 1999, and 2003 have a significant positive effect on total investment.

6.1.2. SECTORAL ANALYSIS

The major contribution of this study is that it has tried to look at the sectoral effect of FDI on domestic investment. The result from the sectoral level analysis has evidenced that sectoral FDIs have neutral effects on domestic investment.

FDI in Agriculture, Manufacturing, and Service sectors have neutral effects both in the long run and short run. Service sector FDI has a short run crowed in effect, while it has a neutral effect in the long run.

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6.2.   CONCLUSION AND IMPLICATIONS

The main objectives and reasons for recurrent revision of investment proclamations were to leverages the best of the benefit the county could get from the inflow of foreign direct investment. One of the benefits anticipated from FDI is the technology transfer that the domestic investors can get from their foreign counterparts.

First and foremost, the result obtained from the sectoral analysis has shaded light and calls for policy intervention. The neutral effect of sectoral and aggregate level FDI, both in the short run and long run, might be resulted from the inability of local investors in absorbing the anticipated crowed in effect of FDI. As a result, the government should focus on building the capacity of local investors so as to enable them to benefit from the knowledge and technology transfer of foreign firms.

Secondly, from the results of the aggregate and sectoral level analysis, one can clearly see that detailed information can be obtained at the sectoral level. Therefore, the effect of FDI on DI can be better seen by having a closer look and performing critical analysis at the sectoral level. The aggregate analysis is too crude to give a clear insight into the effect of FDI on DI.

Thirdly, this study has been devoted to examine the effect of sectoral FDI on DI, and it didn't consider sectoral disaggregation for domestic investments. Besides, it is observed that foreign direct investment in different sectors has varied effects on domestic investment. As a result, further investigation should be done to identify sectors of domestic investments that have the capacity to absorb the anticipated crowed in benefit from foreign investment.

Lastly but not the least, both the regional and federal government should work together in identifying and resolve sector-specific problems that hampered the domestic investors from leveraging the best of the benefit from the crowed-in effect of FDI, besides, the national government; EIC, IPDC and other partners and stockholders should exert a coordinated effort and create the opportunity to local investors to work together with their foreign counterparts, so as to facilitate the knowledge and technology transfer. In addition, as it is mentioned by Agosin, M. R. and Mayer R, (2000) the government should improve its capability to appropriately direct FDI projects in such a way that they do not result in crowed out effect and displace local firms.

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ANNEXES

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ANNEX 1: RESULTS OF STRUCTURAL BREAK TEST

Variable: GDP Growth Rate

Multiple breakpoint tests
Date: 04/10/20   Time: 02:54
Sample: 1995 2016
Included observations: 22
Breaking variables: C
Break test options: Trimming 0.15, Max. breaks 5, Sig. level 0.05

Sequential F-statistic determined breaks:			1
Break Test	F-statistic	Scaled F-statistic	Critical Value**
0 vs. 1 *	19.53915	19.53915	8.58
1 vs. 2	4.380053	4.380053	10.13

* Significant at the 0.05 level.
** Bai-Perron (Econometric Journal, 2003) critical values.
Break dates:

	Sequential	Repartition
1	2004	2004

Variable: Total Investment Per GDP

Multiple breakpoint tests
Bai-Perron tests of L+1 vs. L sequentially determined breaks
Sample: 1995 2016
Included observations: 22
Breaking variables: C
Break test options: Trimming 0.15, Max. breaks 5, Sig. level 0.05

Sequential F-statistic determined breaks:			1
Break Test	F-statistic	Scaled F-statistic	Critical Value**
0 vs. 1 *	15.12090	15.12090	8.58
1 vs. 2	3.621762	3.621762	10.13

* Significant at the 0.05 level.
** Bai-Perron (Econometric Journal, 2003) critical values.
Break dates:

	Sequential	Repartition
1	2010	2010

Variable: Agricultural sector FDI per GDP

Multiple breakpoint tests
Bai-Perron tests of L+1 vs. L sequentially determined breaks
Sample: 1995 2016
Included observations: 22
Breaking variables: C
Break test options: Trimming 0.15, Max. breaks 5, Sig. level 0.05

Sequential F-statistic determined breaks:			0
Break Test	F-statistic	Scaled F-statistic	Critical Value**
0 vs. 1	5.779212	5.779212	8.58

* Significant at the 0.05 level.
** Bai-Perron (Econometric Journal, 2003) critical values.

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Variable: Inflation Rate

Multiple breakpoint tests
Bai-Perron tests of L+1 vs. L sequentially determined breaks
Sample: 1995 2016
Included observations: 22
Breaking variables: C
Break test options: Trimming 0.15, Max. breaks 5, Sig. level 0.05

Sequential F-statistic determined breaks:			1

Break Test	F-statistic	Scaled F-statistic	Critical Value**
0 vs. 1 *	9.933714	9.933714	8.58
1 vs. 2	2.604309	2.604309	10.13

* Significant at the 0.05 level.
** Bai-Perron (Econometric Journal, 2003) critical values.
Break dates:

	Sequential	Repartition
1	2003	2003

Variable: Service sector FDI per GDP

Multiple breakpoint tests
Bai-Perron tests of L+1 vs. L sequentially determined breaks
Sample: 1995 2016
Included observations: 22
Breaking variables: C
Break test options: Trimming 0.15, Max. breaks 5, Sig. level 0.05

Sequential F-statistic determined breaks:			2

Break Test	F-statistic	Scaled F-statistic	Critical Value**
0 vs. 1 *	8.750861	8.750861	8.58
1 vs. 2 *	12.56828	12.56828	10.13
2 vs. 3	2.373959	2.373959	11.14

* Significant at the 0.05 level.
** Bai-Perron (Econometric Journal, 2003) critical values.
Break dates:

	Sequential	Repartition
1	2010	2004
2	2004	2010

Variable: Manufacturing sector FDI per GDP

Multiple breakpoint tests
Bai-Perron tests of L+1 vs. L sequentially determined breaks
Sample: 1995 2016
Included observations: 22
Breaking variables: C
Break test options: Trimming 0.15, Max. breaks 5, Sig. level 0.05

Sequential F-statistic determined breaks:			0

Break Test	F-statistic	Scaled F-statistic	Critical Value**
0 vs. 1	2.572671	2.572671	8.58

* Significant at the 0.05 level.
** Bai-Perron (Econometric Journal, 2003) critical values.

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ANNEX 2: INTERVIEW QUESTIONS TO KEY INFORMANTS

Name of organization	
Name of person interviewed	
Position of the person interviewed	
Telephone	
Cell phone	

1. In your opinion, what are the key issues that attract investors to Ethiopia?
2. What are the main motives of foreign investors for investment in Ethiopia/this region?
3. Why should a company prefer Ethiopia/this region over another?
4. Which sectors/industries have attracted FDI in Ethiopia in the past decade?
5. Which sectors have the potential to further attract FDI in to the country?
6. Which investment opportunities or industries are the biggest exporters in the country?
7. In which investment opportunities or industries has investment grown the fastest in the country?
8. Which investment opportunities have attracted the most foreign investment in the last ten years?
9. Which investment opportunities have the potential to attract a significant amount of foreign investment in the future?

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