

**FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH IN UGANDA (1986-
2016)**

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DECLARATION

This Thesis is my original work and has not been presented for a Degree or any academic award in any University or Institution of Learning.

Signature _____

Date: _____

APPROVAL

I confirm that work reported in this thesis was carried out by the candidate under my supervision.

Supervisor's Name

Signature

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Date:

DEDICATION

I dedicate this research thesis to my parents my dear mom RUQIA YUSUF ABDULLE and my father MOHAMED ABDI ASIS and my brother ALI MOHAMED whose resources I used in my studies.

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All praise is to Allah Almighty, the most Compassionate/sympathetic and the Merciful, Who bestowed and granted on me the potential and ability to complete this thesis work. I would also like to send and pay my homage, honor and sweet sensation of respect to my loving and caring parents whose love, prayers and encouragement kept me steadfast, dedicated and enabled me to attain this target and complete my studies successfully. Words are unlimited to pay special thanks to my father Mohamed Abdi Asis that helped me financially during my studies.

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Needless to say that for any errors and omissions which might still be there in this thesis, the researcher is solely responsible for the same.

TABLE OF CONTENTS

DECLARATION	i
APPROVAL.....	ii
DEDICATION	iii
ACKNOWLEDGMENTS.....	iv
ABSTRACT	viii
CHAPTER ONE.....	1
INTRODUCTION.....	1
1.0 Introduction	1
1.1 Background of the Study.....	1
1.1.1 Historical Perspective.....	1
1.1.2 Theoretical Perspective	3
1.1.3 Conceptual Perspective	4
1.1.4 Contextual Perspective.....	6
1.2 Problem Statement	7
1.3 Objective of the Study.....	8
1.6 Hypothesis of the Study	8
1.7 Significance and Motivation of the Study.....	8
1.8 Scope of the Study.....	9
1.9 Organization of the Thesis	9
CHAPTER TWO	10
LITERATURE REVIEW.....	10
2.0 Introduction	10
2.1 Theoretical Literature.....	10

2.1.1 The basic conceptual framework	11
2.2 Empirical Literature	17
2.2.1 Trends of FDI Inflow to Uganda.....	25
2.3 Research gaps.....	28
CHAPTER THREE	30
METHODOLOGY	30
3.0. Introduction	30
3.1 Research design.....	30
3.2 Model Specification	30
3.2.1 Jarque -Bera Tests	31
3.2.2 Unit roots test	32
3.2.3 The Augmented Dickey-Fuller Tests.....	32
3.2.4 Phillip Perron Unit test.....	32
3.2.5 Co-integration Analysis	32
3.2.6 Johansen Co-Integration.....	32
3.3. Diagnostic Tests	33
3.3.1 Normality Test	33
CHAPTER FOUR	34
PRESENTATION, INTERPRETATION AND ANALYSIS OF THE DATA	34
4.0 Introduction	34
4.1 Descriptive Statistics.....	34
4.2 Time Series Property of Data.....	35
4.3 Long run relationship between FDI and GDP growth	41
CHAPTER FIVE	44
DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	44
5.0 Introduction	44

5.1 Discussion of Findings	44
5.2 Conclusions	45
5.3 Recommendations	46
5.4 Contribution to knowledge.....	47
5.5 Areas for Further Research	48
REFERENCES	49
APPENDIX I: DATA	57

ABSTRACT

Study used multivariate vector autoregressive model (VAR) to investigate the impact of foreign direct investment (FDI) on economic growth, and assess the determinants of FDI inflows in Uganda for the periods between 1986 and 2016. Interpretations of results are based on Granger-Causality and innovation accounting (variance decomposition and impulse response functions). The study finds that international capital flows are of great importance in stimulating economic growth in Uganda. Results further revealed that the determinants of economic growth are foreign direct investment(FDI), human capital, infrastructure, trade openness The study detected three different channels through which FDI inflows impacts on economic growth in Uganda. The first one is direct transmissions from FDI to GDP growth. The second channel is indirectly through domestic investments and by multiplier process, higher level of economic growth is generated. The third channel is through exports thereby yielding export-led growth. Macroeconomic stability through proper policies among others all these will attract FDI's. The government should however put in place measures to limit FDI's from coming along with experts from their home countries but rather employ the local people this will reduce problems of retrenchment or lay off some workforce that comes along with privatization. This will also will also solve the problem of limited skills and lead to skills improvement among the people as well as reduce unemployment. There is adequately need for an adequate policy on the development and management of the FDIs in order to avoid the negative effect of some trade of FDI nature, regulations and monitoring is adequately needed to ensure proper form of the foreign businesses in the country together with enhancing the management situation for the management of the business for economic growth.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter covers the background of the study, problem statement, purpose of the study, objectives of the study, research questions, and scope of the study and significance of the study.

1.1 Background of the Study

This section focused on historical perspective, theoretical perspective, conceptual perspective and contextual perspective.

1.1.1 Historical Perspective

Historically, foreign companies across the globe tend to establish branches in countries that import their products to escape import tax. For example, importing and exporting products within the European Union (EU) has been subsidized for member countries (Alfaro & Charlton, 2009). Foreign firms outside EU therefore tend to establish branches in one or more of the member countries to take advantage of the local subsidies especially when the products are targeted to markets within the EU. In the face of inadequate resources to finance long-term development across the globe and with poverty reduction looking increasingly bleak, attracting FDI has assumed a prominent place in the strategies of most countries. The experience of a small number of fast-growing East Asian newly industrialized economies has strengthened the belief that attracting FDI could bridge the resource gap of low-income countries and avoid further build-up of debt while directly tackling the causes of poverty (UNCTAD 2004).

In Africa, a number of scholars such as Akinlo (2004) examined the importance of FDI on growth for several periods and the channel through which it boosts the export growth since it also improves on the exchange rate in most African countries. In the literature there exists a direct positive link between FDI and export growth. Since the trend in export can further be traced down to the level of investment which in most cases can be domestic or foreign investment in those countries. Uganda is one of the countries that attract the most FDI in East Africa. FDI stocks have increased steadily since 2000. However, after reaching a record level of USD 1.2 billion in 2012, FDI flows declined to USD 541 million in 2016, according to

UNCTAD. Nevertheless, thanks the discovery of oil reserves, new investors might be interested in the country in the future. Uganda ranked 115th out of 190 in the World Bank's 2017 Doing Business report, gaining one place compared to the previous year, after having already gained 27 places between 2015 and 2016. The most important advances have been made in terms of electricity connection and cross-border trade.

The five-year programme (National Development Plan - NDP), established by the Government in 2010, has begun to bear fruit. The plan, which aims to expand the country's agriculture sector and infrastructure, has allowed the country to increase the budget allocated to the energy sector three-fold. It also aims to provide the country with hydro-electrical power stations and an oil refinery connected to a large distribution network. An increase in the rate of investments, in particular in the construction sector, is to be expected with the planned construction of a pipeline to the coast of Kenya. These projects should allow Uganda to double its energy production by 2017. However, in the meantime, critical infrastructure problems remain and 15% of the population lacks access to electricity. In addition, weak education systems as well as a weak communication network are obstacles to the improvement of the investment climate. Uganda is rich in natural resources; FDI mainly goes to the coffee and mining sectors.

The main export commodities in Uganda include: coffee, fish and fish products, tea, cotton, flowers, horticultural products and gold, while the main agricultural products are: coffee, tea, cotton, tobacco, cassava (tapioca), potatoes, corn, millet, pulses, cut flowers; beef, goat meat, milk and poultry (CIA 2011). Lately substantial reserves of oil were discovered and this is expected to stimulate the economic growth further. The agricultural sector remains the major employer (82 percent), providing raw materials for multinational companies operating in the country. The country has a real GDP growth rate of 5, 2 percent (CIA, 2011).

Most African governments have been putting a lot of measures (sometimes called "sweeteners") to ensure that their economies remain attractive to FDI. This has been through liberalisation of the economy, offering fiscal incentives, easing restrictions on foreign investment and permitting profit repatriation (Graham and Spaulding, 2004). In addition, African countries have restored and maintained macroeconomic stability through devaluation of overvalued currencies, and

reduction of inflation and budget deficits (UNCTAD, 1998). To boost investor's confidence, they have established Investment Promotion Agencies (IPAs) and affiliated to multilateral agencies such as World Association of Investment Promotion Agencies (WAIPA) among others, some of which are widely respected as successful agencies that adopt state-of –the-art practices in all areas of promotion (Tillett, 1996). Though several efforts have been made to attract foreign investors, the flows of FDI to some African states have been found to be decreasing (Asiedu, 2002 and UNCTAD, 2011). At USD 55 billion, the share to Africa in the total global FDI inflows decreased to 4.4 percent in 2010, from 5.1 percent in 2009, which is about 9 percent decrease. However, it should be noted that, whereas, anti-trade oriented FDI inflows to Africa is decreasing, natural resource- oriented (greenfield) and tradeoriented

FDI has continued to dominate the continent, especially in the oil industry (UNCTAD, 2011).

Whereas other African countries have been experiencing huge declines in FDI inflows, Uganda hit a record level of USD 202 million in 2002 and since then, the flow has been on the rise (UNCTAD, 2004). It is not crystal clear whether FDI being attracted into different sectors of Uganda's economy have the greatest multiplier effects in promoting sustained economic growth and indirectly alleviating poverty. It is further not clear whether the benefits from spillover effects of FDI on domestic firms have been realized as put forth by Borensztein et al (1997). There is also need to examine some of the macroeconomic and institutional characteristics of Uganda's economy which makes it peculiar from other African economies in attracting FDI. It is therefore of great importance to understand for policy purpose, the short and long term impact of FDI on Uganda's economic growth and the factors that influence its inflows to Uganda.

1.1.2 Theoretical Perspective

This study was based on gravity model. This model is based on an analogy of Newton's Law of Gravity, which has been applied most often to analyze bilateral trade (Bergstrand, 2007; Feenstra et al., 2001; Silva and Tenreyro, 2006; Siliverstovs and Schumacher, 2009). Tinbergen (1962) and Pöyhönen (1963) first employed a gravity model to study international trade. The first theoretical foundation for the gravity model to analyze trade was derived by Anderson (1979) and was based on a constant elasticity of substitution (CES) utility function. Later, Bergstrand (1985) also derived the gravity model based on CES utility. Deardorff (1995) derived a gravity

model using CES utility and the Heckscher-Ohlin theory of international trade. The theoretical foundations of the gravity model explaining trade flows (e.g., Anderson, 1979; Helpman, 1987; Leamer, 1974; Deardorff, 1995; Bergstrand, 1985) have been well documented. According to the gravity model of trade, transportation costs and trade barriers tend to discourage trade flows and the market size of both the host and home country tend to encourage trade.

The use of the gravity model as an explanation of FDI has increased in recent years. It has become the most popular and widely used method in analyzing the importance of countries' attractive location factors for FDI (Brainard, 1997; Grosse and Trevino, 1996; Lipsey and Weiss, 1981; Lipsey and Weiss, 1984). Recent work has had relatively little success in the derivation and establishment of theoretical aspects of the gravity model as it relates to FDI (Bergstrand and Egger, 2007; Helpman and Yeaple, 2004; Keller and Yeaple, 2009; Kleinert and Toubal, 2010). Helpman and Yeaple (2004) derived a theoretical foundation based on the interaction between exports and foreign affiliates' sales, in which a firm either chooses to export or stream FDI. Kleinert and Toubal (2010) extended the work of Helpman and Yeaple (2004), allowing for a fixed set up cost that increases with an increase in distance. The traditional gravity model for FDI suggests that market size (home and host country) and the corresponding distance between two countries have positive relationships with FDI. The gravity theory of international trade uses the distance decay theory. However, the FDI gravity framework uses the distance incentive theory. As the distance between two participating country increases, transportation costs also increase. Thus, it will be preferable to produce in the host country rather than export from the home country (Brainard 1993, Markusen and Venables, 2000).

In this study, the theoretical gravity model for FDI is derived by following the method outlined in Kleinert and Toubal (2010), which draws from the proximity concentration theory. First, the theoretical model is derived for foreign production with domestic inputs.

1.1.3 Conceptual Perspective

A foreign direct investment (FDI) is an investment in the form of a controlling ownership in a business in one country by an entity based in another country. It is thus distinguished from foreign portfolio investment by a notion of direct control. The origin of the investment does not

impact the definition as an FDI: the investment may be made either "inorganically" by buying a company in the target country or "organically" by expanding operations of an existing business in that country. (Ott, Mack, 2002). Broadly, foreign direct investment includes "mergers and acquisitions, building new facilities, reinvesting profits earned from overseas operations and intra company loans". In a narrow sense, foreign direct investment refers just to building new facility, a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. FDI is the sum of equity capital, other long-term capital, and short-term capital as shown the balance of payments. FDI usually involves participation in management, joint-venture, transfer of technology and expertise. Stock of FDI is the net (i.e., outward FDI minus inward FDI) cumulative FDI for any given period. Direct investment excludes investment through purchase of shares. Foreign direct investment was expected to affect exports positively through various ways such as increased access to foreign capital, technological transfer, better marketing knowledge & others. It was measured in terms of its accumulated capital stock. This type of measurement was preferred due to the fact that it takes into account the value of previous and current FDI and it is mostly used by previous researchers (Slaughter May, 2012).

Economic growth is the increase in the inflation-adjusted market value of the goods and services produced by an economy over time. It is conventionally measured as the percent rate of increase in real gross domestic product, or real GDP.

Growth is usually calculated in *real* terms - i.e., inflation-adjusted terms – to eliminate the distorting effect of inflation on the price of goods produced. Measurement of economic growth uses national income accounting. Since economic growth is measured as the annual percent change of gross domestic product (GDP), it has all the advantages and drawbacks of that measure. The economic growth rates of nations are commonly compared using the ratio of the GDP to population or per-capita income.

The "rate of economic growth" refers to the geometric annual rate of growth in GDP between the first and the last year over a period of time. This growth rate is the trend in the average level of

An increase in economic growth caused by more efficient use of inputs (increased productivity of labor, physical capital, energy or materials) is referred to as *intensive growth*. GDP growth

caused only by increases in the amount of inputs available for use (increased population, new territory) is called *extensive growth*. The economic growth rate is calculated from data on GDP estimated by countries' statistical agencies. The rate of growth of GDP *per capita* is calculated from data on GDP and people for the initial and final periods included in the analysis of the analyst.

1.1.4 Contextual Perspective

The underdeveloped nature of the Ugandan economy that essentially hindered the pace of her economic development has necessitated the demand for Foreign Direct Investment into the country. Aremu (1997), noted that Uganda as one of the developing countries of the world, has adopted a number of measures aimed at accelerating growth and development in the domestic economy, one of which is attracting foreign direct investment (FDI) into the country. According to World Bank (1996), FDI is an investment made to acquire a lasting management interest (normally 10% of voting stock) in a firm or an enterprise operating in a country other than that of the investor defined according to residency. However, Foreign Direct Investment (FDI) is often seen as an important determinant for export growth in the developing countries because it affects the export growth by stimulating domestic investment, increase in capital formation and also, facilitating the technology transfer in the host countries. (Falki, 2016).

The Ugandan government is primarily concerned with how to promote and improve economic development and reduce the rate of poverty in the country. Owing to this objective, the government always attempt to woo or attract inflow of FDI. Uganda economy has been experiencing growth for some years, but how FDI influences export growth suggests an empirical investigation. The main objective of this study is to explore foreign direct investment, exchange rate and export growth of Uganda between 2012 and 2015.

In Uganda, exporting firms are offered incentives to help them cope with the country's infrastructure shortfalls as well as the expenses of bureaucratic indolence. Furthermore, the export incentives are also targeted at developing a level and favorable playing field to enhance the competitiveness of the economy's exports. For example, foreign exchange has been liberalized allowing the exporting firms to keep all their earnings from exports. VAT and duty

are not charged for export goods unlike Kenya where the exporters have to pay tax on exports. Moreover, exporters are allowed to claim compensation of the VAT charged on the inputs used in the production of export goods. The compensation also applies to the duty paid on imported inputs for export products (Uganda Export Promotion Board, 2010).

Access to the Ugandan market has been made easy through Uganda's government policy of global economic integration. It is aimed at increasing the amount of trade thereby offering economic prospects to foreign investors. Bilateral agreements such as COMESA and the EAC allow better tariff rates for Uganda's products in foreign markets. The Cotonou accord as well as AGOA initiative allows entry of Uganda's exports to the EU market as well as the USA duty free. This encourages foreign investors to establish in Uganda (Lutwama, 2010).

1.2 Problem Statement

The role of FDI in the growth process of an economy has long been a topic of discussion in several countries (Moran 2002, Blomstrom et al 1994, Lensink and Morrissey 2006, Kerr et al 1995, Obwona 1999 and Kokko, 1996). These discussions have provided immense insights into the relationship between FDI and growth but the empirical evidence are rather mixed, with some finding a positive and others a negative relationship between FDI and economic growth. After a very impressive period of nearly twenty years, economic growth in Uganda has been decelerating. During the 20 year period from 1990 to 2010, the economy was growing at an average of 7% per annum. It then slowed down to an average of 4.5% per annum during the period of 2014 to 2017; this recent decline is due to a combination of both internal and external factors (UBOS, 2017). Yet Uganda has been consistently attracting the highest foreign direct investment (FDI) in East Africa and the Red Sea region reaching a record level of USD 1.2 billion in 2012, though the FDI flows declined to USD 541 million in 2016(UNCTAD, 2017).

For the case of Uganda, FDI is assumed to have contributed towards her average growth rate of 5% for the last 20 years. Given the trend of FDI inflows, we would theoretically expect economic growth to move in the same direction, but this is not the case for Uganda given the statistics available. The question then is: Does FDI impact positively on growth? Specifically does Uganda benefit from FDI inflows? The little theoretical and empirical studies have not

been able to generate consistent evidence. This study therefore, examined the significance of FDI inflows to Uganda's economy.

1.3 Objective of the Study

The objective of the study is to identify the relationship between FDI and economic growth in Uganda from 1986 to 2016.

1.4 Specific objectives

1. To examine the causal relationship between FDI and GDP growth in Uganda
2. To determine whether there is a short run relationship of FDI on GDP growth in Uganda
3. To find out whether there is a long run relationship between FDI and GDP growth in Uganda

1.5 Research Questions

1. Is there causal relationship between FDI and economic growth in Uganda?
2. Is there a short run relationship of FDI and economic growth in Uganda?
3. Is there a long run relationship between FDI and economic growth?

1.6 Hypothesis of the Study

H_{01} : There is no causal relationship between FDI and GDP growth

H_{02} : There is no short runrelationship of FDI on GDP growth

H_{01} : There is no long run relationship between FDI and GDP growth

1.7 Significance and Motivation of the Study

An in-depth and comprehensive analysis of the impact of FDI in Uganda with special focus on economic growth by researchers is limited. The understanding of the linkage between FDI net inflows and its impact on economic growth is important for the following reason; the quantity of FDI in a capital and technology scarce economy like that of Uganda, necessitates the understanding of the relationship between FDI and economic growth essentially for two reasons:

First, it is believed that FDI plays an ever-increasing role in economic development and growth, the understanding of how to encourage greater quantum of FDI, how and when capital inflows might substitute for other forms of capital and how that capital might best be linked to desirable development outcomes will be a critical public question for Uganda.

Second, consensus in the literature, supported by empirical evidence stipulates that FDI forms an important part of economic growth of nations. For that reason, the results of the study provide the much-needed empirical evidence of the impact of FDI on the economic growth of Uganda.

1.8 Scope of the Study

The study focused on the relationship between FDI and economic growth in Uganda covering the period 1986 to 2016. Secondary annual time series data were obtained from the WDIs CD ROM (2008), African Development Indicators, selected statistics for African Countries and BOU, UBOS, UIA and other local sources depending on data availability.

1.9 Organization of the Thesis

The study is divided into five chapters. Following the current introductory chapter is chapter two which presents a review of the related literature and theoretical framework. In chapter three the methodology is presented. The empirical analysis is presented in Chapter four while chapter five captures the discussion of the findings; conclusions and recommendations drawn.

CHAPTER TWO LITERATURE REVIEW

2.0 Introduction

The FDI inflow differential and economic growth disparity among countries have created much research interest among economists. There is a large body of theoretical and empirical literature on the impact of FDI on economic growth. The existing evidence is however mixed with some showing positive spillovers while others reporting limited or no evidence. In this chapter, the researcher presents a review of the existing theoretical, conceptual and empirical research studies that have been undertaken to ascertain the relationship between FDI and economic growth. The chapter highlights the arguments and findings that have been advanced by the different scholars

2.1 Theoretical Literature

Economic theory provides conflicting predictions about the effects of FDI on growth. According to Kokko (1996), spillovers occur when the entrance or presence of Multinational Enterprises (MNEs) affiliates leads to productivity or efficiency benefits in the host country's local firms and the MNEs are not able to internalize the full value of these benefits. Similarly, negative externalities exist when the entrance or operations of FDI lead to productivity or efficiency loss among domestic firms and foreign affiliates do not have to compensate domestic firms for their loss (Mutenyo, 2008). For that matter, FDI in presence of pre-existing trade, price, financial and other distortions will hurt resource allocation and slow growth.

Foreign firms are expected to compete favorably especially with more informed large domestic firms because former are assumed to possess non-tangible productive assets such as technological know-how, marketing and managerial skills, export contacts, coordinated relationship with suppliers and customers and reputation (Aitken and Harrison 1999). Such knowledge is easily transferred from parental firms abroad to a host country through their affiliates which leads to increase in the productivity of domestic firms. However, there is growing controversy about technological spillover of FDI although the general consensus is that multinational corporations have more advanced technology, such that when they enter a new market (economy) through Direct Investment (DI), they carry along the advanced technology and superior managerial practice in order to compete with local firms that are familiar with

consumer preferences. The repercussions are two-fold, either local firms are crowded out or they benefit hence increase their productivity.

Specifically it is assumed that some of the technology may diffuse to the local indigenous firms of the host economies through demonstration and imitation effect (Aitken and Harrison 1999). Secondly, interaction with these foreign firms may provide learning opportunities for the domestic firms hence reduce their innovation costs thus improve total factor productivity. The third mechanism is through a combination of human capital accumulation and labour turnover: For instance workers employed by foreign firms accumulate knowledge but as they leave for domestic firms or form their own, they go along with the accumulated human capital that raises the productivity of the domestic firms. Alternatively, firms' productivity may increase when domestic firms are exposed to new products, production and marketing techniques or receive technical skills through upstream and downstream foreign firms. All these channels which bring domestic firms closer to their foreign counterparts end up enhancing the productivity of domestic firms. In light of the foregoing theoretical overview, consensus in the literature supported by theoretical evidence seems to be that foreign firms through FDI do transfer technology to their affiliates; a process which can equally allow spillovers to unaffiliated firms in the host economy which in turn increases growth through productivity and efficiency gains by local firms.

2.1.1 The basic conceptual framework

Within the framework of the neo-classical models that follow Solow (1956), the impact of FDI on the growth rate of output is constrained by diminishing returns to physical capital. Therefore, FDI can only exert a level effect on the output per capita not a rate effect. In other words, FDI cannot alter the growth rate of output in the long run. With this as the framework, FDI cannot be considered seriously as an engine of growth. In the context of the new theory of economic growth, however, FDI can affect not only the level of output per capita but also its rate of economic growth. This literature has posed various hypotheses that explain why FDI may potentially enhance the growth rate of per capita income in the host country. First, FDI can be considered as one of the main transmission vehicles of advanced technology to developing countries (Borensztein et al., 1998). Generally speaking, Less Developing Countries (LDCs) lack the necessary background in terms of capital, educated population, infrastructure, liberalized

markets, economic and social stability and so forth in order to be able to innovate and generate new discoveries and designs. Accordingly, they will have to benefit from the diffusion of technology that originates elsewhere. The technological diffusion from the leader countries to LDCs can take place through FDI. Technological advances implemented by multinationals may spill over to the rest of the economy, giving rise to beneficial externalities and encouraging domestic private activity.

However, there are prerequisites for host countries to benefit from FDI. Abramowitz, (1986) maintains that a minimal degree of social capacity is required. Social capacity, in turn, is related to an adequate level of human capital, economic and political stability, liberalization of markets and sufficient infrastructure. With regard to infrastructure, Sanchez (1998) empirically explored the correlation among public infrastructure and economic growth in Latin America in the period 1970-1985 and found a positive and significant impact of FDI on the economic growth of the countries of this area.

In view of the above, Benhabib and Spiegel (1994) argue that the ability of an LDC to absorb and make sound use of the flows of foreign investment increases with the level of human capital of the host country. Some studies underlining these features of FDI are Duttaray (2001), Hsiao and Hsiao (2004) and Hyun (2006) among others. In contrast, other studies argue that, in supporting its own interests, FDI may discourage competition and even corrupt the development path of a country. Abdulhamid et al (2003) opine that in theory, FDI is expected to benefit the host country by transferring resources, increasing employment opportunities, improving the balance of payments and transferring technology. These resources have the potential to be diffused into indigenous firms thereby creating more innovation and productivity growth.

Originally, FDI had been seen as “parasitic” and retarding the development of domestic industries for export promotion. However, Bende and Ford (1998) submit that the wide externalities in respect of technology transfer, the development of human capital and the opening up of the economy to international forces, among other factors, have served to change the former image. In this regard, Caves (1996) affirms that the rationale for increased efforts to attract more FDI stems from the belief that FDI has several positive effects. Among these are productivity

gains, technology transfers, introduction of new processes, managerial skills and know-how in the domestic market, employee training, international production networks, and access to markets. Borensztein et al. (1998) see FDI as an important vehicle for the transfer of technology, contributing to growth in larger measure than domestic investment.

On the basis of these assertions governments have often provided special incentives to foreign firms to set up companies in their countries. Carkovic and Levine (2002) note that the economic rationale for offering special incentives to attract FDI frequently derives from the belief that foreign investment produces externalities in the form of technology transfers and spillovers. Recognizing the importance of FDI to their growth, many countries are using specific incentives to attract FDI to flow in. Tax breaks and rebates are examples of such incentives (Tung and Cho, 2001) although the effectiveness of such incentives has been questioned (Guisinger, 1992).

Today, a lot of research has been conducted on the relationship between FDI and economic growth, although most of such work is not situated in Africa. The focus of the research work on FDI and economic growth can be broadly classified into two. First, FDI is considered to have direct impact on trade through which the growth process is assured. Second, FDI is assumed to augment domestic capital thereby stimulating the productivity of domestic investments. These two arguments are in conformity with endogenous growth theories (Romer, 1990) and cross country models on industrialization in which the quantity and quality of factors of production as well as the transformation of the production processes are ingredients in developing a competitive advantage.

Blomstrom et al. (1994) report that FDI exerts a positive effect on economic growth, but they also note that there is a threshold level of income above which FDI has positive effect on economic growth and below which it does not. According to Blomstrom et al. (1994), the explanation is that only those countries that have reached a certain income level can absorb new technologies and benefit from technology diffusion, and thus reap the extra advantages that FDI can offer. From this assertion De Mello infers that the extent to which FDI is growth-enhancing depends on the degree of complementarity between FDI and domestic investment, in line with

the eclectic approach. The degree of substitutability between foreign and domestic capital stocks appears to be greater in technologically advanced countries than in developing countries.

Developing countries may have difficulty in using and diffusing new technologies of MNEs. Findings of Xu (2001) for United States FDI in 40 countries for the period 1966-94 also support the finding of De Mello (1999) that technology transfer from FDI contributes to productivity growth in developed countries but not in developing countries, which he attributes to lack of adequate human capital. Previous works suggest human capital as one of the reasons for the differential response to FDI at different levels of income. This is because it takes a well-educated population to understand and spread the benefits of new innovations to the whole economy. Accordingly, Bengos and Sanchez (2003) assert that even though FDI is positively correlated with economic growth, host countries require minimum human capital, economic stability and liberalized markets in order to benefit from long-term FDI inflows. In view of this, after finding out a positive correlation between FDI and economic growth, Marta et al (2003) recommended that for the host country to benefit from long-term capital flows, the country requires adequate human capital, economic stability and liberalized markets. This recommendation is in perfect alignment with Abdulhamid et al's (2003) study which examined the effect of FDI on economic growth in Sub-Saharan African countries. In particular, domestic economic conditions such as macroeconomic policy, openness, and domestic investment had a significant positive effect on economic growth.

UNCTAD (1999) submits that FDI has either a positive or negative impact on output depending on the variables that are entered alongside it in the test equation. These variables include the initial per capita GDP, education attainment, domestic investment ratio, political climate, terms of trade, black market exchange rate premiums, and the state of financial development. Examining other variables that could explain the interaction between FDI and growth, Olofsdotter (1998) reports that the beneficiary effects of FDI are stronger in those countries with a higher level of infrastructure capability. He therefore emphasized the importance of bureaucratic efficiency in enabling FDI effects.

Up to now, there is conflicting evidence in the literature regarding the question as to how, and to what extent, FDI affects economic growth. According to Mahmoud and Fatima (2007), FDI may affect economic growth directly because it contributes to capital accumulation, and the transfer of new technologies to the recipient country. To this debate, Findlay, (1978) asserts that FDI increases technical progress in the host country by means of a contagion effect, which eases the adoption of advanced managerial procedures by the local firms. In addition, FDI enhances economic growth indirectly where the direct transfer of technology augments the stock of knowledge in the recipient country through labor training and skill acquisition, new management practices and organizational arrangements (De Mello, 1999).

Theoretically, however, in the context of either neo-classical or endogenous growth models, the effects of FDI on the economic growth of the receiving country differ in the recent growth models from their conventional counterparts. The conventional economic growth theories are being augmented by discussing growth in the context of an open rather than a closed economy, and the emergence of externality-based growth models. Even with the inclusion of FDI in the model of economic growth, traditional growth theories confine the possible impact of FDI to the short-run level of income, when actually recent research has increasingly uncovered an endogenous long-run role of FDI in economic growth determination (De Mello, 1997). According to the neo-classical models, FDI can only affect growth in the short run because of diminishing returns of capital in the long run.

Nevertheless, most studies generally indicate that the effect of FDI on growth depends on other factors such as the degree of complementarity and substitution between domestic investment and FDI, and other country-specific characteristics. Buckley et al, (2002) argue that the extent to which FDI contributes to growth depends on the economic and social conditions in the recipient country. Countries with high rate of savings, open trade regime and high technological levels would benefit from increase in FDI to their economies. However, FDI may have negative effect on the growth prospects of the recipient economy if they result in a substantial reverse flows in the form of remittances of profits, and dividends and/or if the multinational corporations (MNCs) obtain substantial or other concessions from the host country. Bengoa and Sanchez (2003) argue that in order to benefit from long-term capital flows, the host country requires adequate human

capital, sufficient infrastructure, economic stability and liberalized markets. The view that FDI fosters economic growth in the host country, provided that the host country is able to take advantage of its spillovers is supported by empirical findings in De Mello (1999) and Obwona (2001).

According to Seetanah and Khadaroo (2005), FDI is a particularly key ingredient of successful economic growth in developing countries because the very essence of economic development is the rapid and efficient transfer and cross border adoption of best practices, be it managerial and technical best practice or deployment of technology from abroad. Proximity and better access to large market is also well known to attract FDI that in turn implies often accelerated technology transfer. As such, better worker training dispensed by foreign investors has often been argued to raise the level of productivity. FDI can thus speed up the structural shift of the economy by acting as a catalyst for inward investment by complementing local resources and providing a signal of confidence in investment opportunities (Agosin and Mayer, 2000). New FDI projects may invite complementary local private investments that provide inputs to, or use outputs of the foreign firm.

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

The importance of economic growth to attracting FDI is closely linked to the fact that FDI tends to be an important component of investing firms' strategic decisions. In fact Brewer (1993) suggests three hypotheses in explaining strategic FDI projects namely, efficiency seeking hypothesis, resource seeking hypothesis and market seeking or market size hypothesis.

Pfefferman and Madarassy (1992) state that market size is one of the most important considerations in making investment location decisions for three reasons: larger potential for local sales, the greater profitability of local sales than export sales and the relatively diverse resources which make local sourcing more feasible. In other words, the market size hypothesis predicts that markets with large populations and/or rapid economic growths (as measured by real GDP per capita or its growth) tend to give multinational firms more opportunities to generate greater sales and profits and thus become more attractive to their investments.

However, FDI may have negative effects on the growth prospects of the recipient economy if they give rise to a substantial reverse flows in the form of remittances of profits, and dividends and/or if the Transnational Corporations (TNCs) obtain substantial or other concessions from the host country. FDI may not lead to growth rate because MNCs tend to operate in imperfectly competitive sectors (with high barriers to entry or a high degree of concentration). As a result, FDI may crowd out domestic savings and investment. For instance, Agosin and Mayer, (2000) analyzed the effect of lagged values of FDI inflows on investment rates in host countries to examine whether FDI crowds-in or crowds-out domestic investment over the 1970-95 period. They conclude that FDI crowds-in domestic investment in Asian countries crowds-out in Latin American countries while in Africa their relationship is neutral (or one-to-one between FDI and total investment). Therefore, they conclude that effects of FDI have by no means always favourable and simplistic policies are unlikely to be optimal. Moreover, FDI may have a negative impact on the external balance because profit repatriation will tend to affect the capital account negatively. It is also at times associated with enclave investment, sweatshop employment, income inequality and high external dependency (Ramirez, 2000).

2.2 Empirical Literature

This section reviews the recent empirical evidence on the effect of FDI on growth hypothesis. According to Seetanah, et al (2005) the economic impact of FDI remains more contentious in empirical than in theoretical studies. While many studies observe positive impacts of FDI on economic growth, others also reported a negative relationship and among the main reasons for this controversy remain data insufficiency and methodological flaws. Curiously, the empirical evidence of these benefits both at the firm level and at the national level remains ambiguous. The

majority of studies, however, conclude that FDI contributes to total productivity and economic growth.

Among the popular and influential work features Borensztein et al (1998) who tested the effect of FDI on economic growth in a framework of cross-country regressions for 69 developing countries. Their results suggested that FDI was in fact an important vehicle for the transfer of technology, contributing to growth in larger measure than domestic investment. Analyzing whether FDI stimulate economic growth in Sub-Saharan Africa, Mutenyo (2008), found that FDI has a positive impact on economic growth but its significance reduced when he controlled for private investment. De Gregorio (2003), while contributing to the debate on the importance of FDI, notes that FDI allows a country to bring in technologies and knowledge that are not readily available to domestic investors, and in this way increases productivity growth throughout the economy. Earlier works by De Gregorio (1992) which analyzed a panel of 12 Latin American countries in the period 1950-1985, the results suggested a positive and significant impact of FDI on economic growth. In addition the study showed that the productivity of FDI was higher than the productivity of domestic investment.

Similarly, Campos and Kinoshita (2002) investigated the effects of FDI on 25 transitional economies of the former Soviet Bloc. Their results concurred with those of Borensztein et al (1998), indicating that FDI is a significant factor in economic growth. Dees (1998) submits that FDI has been important in explaining China's economic growth, while De Mello (1997) presents a positive correlation for selected Latin American countries. Nyatepe-Coo (1998) also assessed the contributions of FDI to economic growth in selected countries in Southeast Asia, Latin America and Sub-Saharan Africa covering the period 1963-1992 following the work of Borensztein et al., (1998). The authors reported that FDI did promote economic growth in the majority of the 12 countries examined. Using Thailand annual macroeconomic data for the 1970-1999 periods and adding export openness, Kohpaiboon (2003) showed that FDI is positively correlated with GDP growth in Thailand. Similarly, Marwah and Tavakoli (2004) examined Indonesia, Malaysia, Philippines, and Thailand separately. Their results showed that FDI has a positive impact on GDP growth for all four countries.

De Mello (1999) attempted to find support for an FDI-led growth hypothesis with time series analysis and panel data estimation for a sample of 32 OECD and non-OECD countries covering the period 1970-1990. His work estimated the impact of FDI on capital accumulation and output growth in the recipient economy. In the same vein, Wang (2002) used data from 12 Asian economies over the period of 1987-1997 and found that total FDI inflows significantly affect economic growth. Disaggregating the types of flows entering these economies, she found that only FDI in the manufacturing sector has a significant and positive impact on economic growth and attributes this positive contribution to FDI's spillover effects.

Li and Liu (2005) also investigated the hypothesis in both developed and developing countries using a large cross-country sample for the period 1970 to 1999. FDI and economic growth were reported to become significantly complementary to each other and form an increasingly endogenous relationship only from the mid-1980s. Li and Liu found that there was a strong complementary connection between FDI and economic growth in both developed and developing countries. They furthermore reported that FDI not only directly promoted economic growth by itself but also indirectly did so via human capital hence facilitating in the improvement of the knowhow and managerial skills of local firms (the learning by watching effect). Moreover FDI stimulates the development and propagation of technological skills through multinational corporations, internal transfers and through linkages and spillovers among firms (Borensztein et al, 1998). Besides, Borensztein et al., (1998) found a strong complementary effect between FDI and human capital, that is, the contribution of FDI to economic growth was enhanced by its interaction with the level of human capital in the host country. Earlier works by De Gregorio (1992) for a panel of 12 Latin American countries and Blomstrom et al (1994). Bende-Nabende, Ford, Sen and Slater (2000) also found that less advanced countries' output responded more to among other variables FDI and human capital than that of advanced countries.

Balasubramanian et al. (1996) report positive interaction between human capital and FDI. They had earlier found significant results supporting the assumption that FDI is more important for economic growth in export-promoting than import-substituting countries. This implies that the

impact of FDI varies across countries and that trade policy can affect the role of FDI in economic growth.

In the same line, another study was conducted by Borensztein, et. al, (1995) which included 69 developing countries in their sample. The study found that the effect of FDI on host country growth is dependent on stock of human capital. They infer from it that flow of advanced technology brought along by FDI can increase the growth rate only by interacting with country's absorptive capability. They also find FDI to be stimulating total fixed investment more than proportionately. In other words, FDI crowds-in domestic investment. However, the results are not robust across specifications.

Higher level of development allows countries to reap the benefits of productivity fostered by foreign investment. For similar reasons, Borensztein et al. (1995) found significant relations between FDI flows and economic growth to be dependent on the level of human capital. Host countries with better endowment of human capital are believed to benefit more from FDI induced technology transfer as spillover-effects than others with less human capital. They therefore suggest that the differences in both human and the technological absorptive ability may explain the variation in growth effects of FDI across countries and consequently GDP. They suggest further that countries may need a minimum threshold stock of human capital in order to experience positive effects of FDI.

It should however be noted that although FDI contributes positively to economic growth, Adeolu (2007) study revealed that openness to trade and available human capital, are not FDI inducing. The importance of education to economic growth is proxied by the ratio of secondary and tertiary institution enrolment in the population. Barro and Lee (1994) and Akinlo (2004) included this variable in their growth equation and found a direct relationship. Borensztein et al. (1998), however, found a conditional relationship, where the relationship was indirect below some threshold and positive thereafter.

Bende and Ford (1998) found an indirect relationship between human capital and growth in Taiwan. In Adeolu's (2007) study which investigated FDI and Nigeria's economic growth, human

capital had no statistically significant relationship to overall economic growth and according to him this suggested that there is a shortage of skilled labour in the country. However, it had been posited that efficiency seeking FDI will tend to locate in those destinations that are able to supply skilled and disciplined labour force. In fact, in the work of Fung et al (2000) it was found out that although labour quality is an important determinant of FDI, low labour costs were insignificant determinants of FDI. Owing to this, Otepolo (2002) concluded that for any significant contribution of human capital to economic growth, there is a need for conscious development in a new and innovative way.

One of the conditions for location of efficiency-seeking FDI is that there is an ample supply of skilled and disciplined labour. Obwona (2004) notes that although labour appears to be cheap in Africa, there is nonetheless an overall shortage of skilled labour on the continent. He adds that the lack of middle or senior level entrepreneurial experience has increased the existing skill gap, and many foreign companies have resorted to employment of expatriate managers (Bhinda et al., 1999). This is the situation in Uganda, where foreign companies and many conglomerates prefer expatriates as their senior managers. The companies only hire Ugandans on the condition of retraining and mostly this training is done outside the country.

However it should be pointed out that some studies have not established any positive relationship between FDI and growth. Even when the relation is positive, the effects tend to be weak. For instance Carkovic and Levine (2002) used a mix of countries and analyzed a data sample of 72 countries, ranging from the United States to Rwanda that included aggregate FDI flows to each of the countries. Employing both panel and crosssection data to investigate the issue using both OLS and Generalized Method of Moments (GMM) methods of estimation, the results of their analyses indicated that the exogenous component of FDI had no effect on growth.

Hein (1992) avers that FDI may have negative effect on the growth prospect of the recipient economy if they give rise to a substantial reverse flows in the form of remittances of profits, particularly if resources are remitted through transfer pricing and dividends and/or if the transnational corporations (TNCs) obtain substantial or other concessions from the host country. For instance, Singh, (1998) found FDI penetration variable to have a little or no consequences

for economic or industrial growth in a sample of 73 developing countries. In the same way (Hein, 1992) reported an insignificant effect of FDI inflows on medium term economic growth of per capita income for a sample of 41 developing countries.

Fry (1992) examined the role of FDI in promoting growth by using the framework of a macro-model for a pooled time series cross section data of 16 developing countries for the period 1966-1988. The countries included in the sample are Argentina, Brazil, Chile, Egypt, India, Mexico, Nigeria, Pakistan, Sri Lanka, Turkey, Venezuela, and 5 Pacific basin countries viz. Indonesia, Korea, Malaysia, Philippines, Thailand. For his sample as a whole he did not find FDI to exert a significantly different effect from domestically financed investment on the rate of economic growth, as the coefficient of FDI after controlling for gross investment rate was not significantly different from zero in statistical terms. In fact, FDI had a significant negative effect on domestic investment suggesting that it crowds-out domestic investment.

Durham (2004) also failed to identify a positive relationship between FDI and economic growth, but instead suggests that the effects of FDI are contingent on the absorptive capability of host countries. Aitken and Harrison (1999) argue that there is no significant positive relation between FDI and economic growth.

Balasubramanyam et.al, (1996) carried out a study on FDI and economic growth. Export-oriented strategy and the effect of FDI on average economic growth rate for the period 1970-85 for the cross-section of 46 countries as well as the sub-sample of countries that are deemed to pursue export-oriented strategy was found to be positive and significant and sometimes negative for the sub-set of countries pursuing inward-oriented strategy.

On his part, Alfaro (2003) used cross-country data for the period 1981 to 1999 and examined the impact of FDI on growth in the primary; manufacturing and services sectors. The findings showed that the benefits of FDI vary greatly across sectors. In particular, FDI in the primary sector had a negative effect on growth while this relationship was positive for the manufacturing sector, and ambiguous in the service sector. Lensink and Morrissey (2006), using a cross-section panel data and instrumental variable technique found that FDI has a positive impact on growth

but their findings were conditional on the level of human capital development in the host country.

Furthermore, albeit FDI inflows had a significant positive effect on the average growth rate of per capita income for a sample of 78 developing and 23 developed countries as found by Blomstrom et.al (1994), when the sample of developing countries was split between two groups based on level of per capita income, the effect of FDI on growth of lower income developing countries was not statistically significant although still with a positive sign. They argue that least developed countries learn very little from MNEs because domestic enterprises are too far behind in their technological levels to be either imitators or suppliers to MNEs.

Durham's (2004) study, the outcomes of the findings revealed that FDI only has a positive effect on growth in countries with strong financial systems. Additionally, he found out that only countries with high quality governance, as evidenced by strong institutional development and investor-friendly legal environment, enjoy positive effects of FDI on growth. Also using data on developing countries, Hsiao et al (2003) found that institutional strength and high levels of urbanization are conditions for positive effects of

FDI on growth. Chakraborty and Basu (2002) found that GDP growth in India is not influenced by FDI. Instead, the causality they found was from GDP growth to FDI, with trade liberalization weakly increasing the flows of inward FDI.

Studies investigating the role of infrastructure in FDI in the African context have been very scarce and among the rare ones feature Asiedu (2002) who analysed 34 countries Africa over the period 1980-2000. Using the number of telephones per 1000 population to measure infrastructure development and controlling for classical FDI determinants she concluded that countries that improved their infrastructure were rewarded with more investments. In fact a one unit increase in infrastructure was estimated to lead to a 1.12 percent increase in FDI/GDP in the 1980s. While some studies found the importance of infrastructure for FDI, there are also other studies which failed to validate the hypothesis. For instance Quazi (2005) could not establish positive and

significant relationship between infrastructure (measured as the number of telephones per 1,000 people) and FDI using panel data from 1995-2000 for a sample of seven East Asian countries.

Therefore, despite the adduced evidence presented in recent studies, there are several theoretical arguments why developing countries may not gain from FDI. Krugman (1998) argues that the transfer of control from domestic to foreign firms may not always be beneficial to the host countries because of the adverse selection problem. FDI undertaken within a crisis situation under “Fire Sale” may transfer ownership of firms from domestic to foreign firms that are less efficient. This concern is particularly important to the developing countries where, as part of privatization, state owned enterprises are sold to foreign firms simply because foreign firms have more available funds than domestic ones. As pointed out by Salz (1992), FDI may also “crowd out” domestic firms through unfair competition. There is also a concern that the enclave nature of many foreign owned firms and their minimal linkage to the rest of the economy could reduce the potential spillover contribution to the national economy. Moreover, the potential subsequent outflow of foreign firms' subsidiary earnings to their parent companies could also cause deterioration in the balance of payments. It is also argued that foreign corporations tend to produce inappropriate goods that are tailored to satisfy the wealthy portion of the host country's consumers, thereby increasing inequality and engaging in transfer pricing (Abdulhamid et al, 2003).

Therefore, growth enhancing effect of FDI is not, automatic, but depends on various country specific factors. UNCTAD (1999) indicates that the positive effect of FDI is stronger the higher the level of development of a host country. Higher level of development allows countries to reap the benefits of productivity fostered by foreign investment. For similar reasons, Borensztein et al. (1998) have found that significant relations between FDI flows and economic growth depend on the level of human capital.

Host countries with better endowment of human capital are believed to benefit more from FDI induced technology transfer as spillover-effects than others with less human capital. Evidence adduced from the preceding review shows that most of the empirical research that has been undertaken in this area (such as Mutenyu, 2008, David N, 2007) settled for a number of countries

(SSA) to establish the relationships between FDI and economic growth. There is therefore limited exhaustive country specific research studies on Uganda to establish the relationship and interaction between FDI and economic growth. Chowdhury and Mavrotas (2005) proposed that individual country studies be carried out to ascertain the impact of FDI on economic growth. This provided a major incentive for this study especially for Uganda where there are virtually few studies undertaken to ascertain the influence of FDI on economic growth and for a country specific analysis, time series method of data analysis is appropriate.

2.2.1 Trends of FDI Inflow to Uganda

Until 1990s, factors that influenced FDI in Uganda included macroeconomic and political instability; complex administrative bureaucracies; undeveloped physical, human and financial assets; high global market competition; narrow markets most of which in their nascent stages; credibility of the bilateral relations with foreign states; and negative investor perceptions. In fact, like other African nations political leaders in Uganda had hostile policies regarding private sector development and FDI in particular. There was a widespread concern about the loss of control over major enterprises especially if foreigners are involved. Aside from the lack of macroeconomic stability and economic growth, there were many other structural rigidities and institutional factors that kept FDI away from Uganda. It was not until the second half of the 1990s that large scale privatization programs were initiated.

Since the liberalization of Uganda's economy in the early 1990s, Uganda has made considerable efforts to improve its investment climate by liberalizing its investment regulations and offering incentives to foreign investors (UNCTAD, 1998). More importantly, the country has initiated economic reforms aimed at increasing the role of the private sector, for example, through the privatization of state owned enterprises and other programmes to encourage commercial activity. In addition, steps have been taken to among other things improve infrastructure facilities, restore and maintain macroeconomic stability through the devaluation of overvalued national currencies, the reduction of inflation rates and budget deficits. For example a joint survey by the BOU, UIA and UBOS (2006) on firm level investment: determinants and constraints, the analysis revealed that turnover, profit and credit are significant determinants of firm level investment. On the basis of the study findings, a number of strategies were suggested one which among other factors

involved improvement in the infrastructure services to reduce transactions costs that affect investors in the Ugandan economy.

Specifically, the survey showed that power supply is the most recognized critical and daunting constraint to investment and the growth of firms. The share of production lost due to power outages and fluctuations average 6.3 percent in manufacturing. It was therefore recommended that the government needs to fast track policies to increase power generation, transmission and distribution as a matter of urgency. Other key services such as water and sanitation, telecommunications and transportation and storage were also seen as constraints to the operation and growth of firms. In particular, the quality and price of these services was emphasized as key factors hampering profitability and expansion of existing firms. Thus, once transactions costs are reduced productivity at firm level will rise and it would be possible to unleash a new growth spurt that the economy needs. In the same way, the survey recommended that the poor ratings of Uganda's investment climate at the global level need to improve to reduce the costs of doing business, reflecting administrative procedures, licensing, lack of transparency and predictability of tax and other regulatory obligations which were perceived as being high. It should be recalled that in the 1990s, Uganda took a major economic stride to remove exchange controls and freed both the current and capital accounts thus, fully liberalizing both the domestic and external sectors of the economy. This resulted into increased influx of private investment to take advantage of the economic stability and growth. Since the liberalisation of the economy in the 1990s, the growth of private sector investment in Uganda has been driven by foreign inflows in the form of either FDIs or portfolio investments (BOU, UIA and UBOS 2008). Uganda has actively promoted the private sector as an engine of economic growth and development. This sector continues to benefit from the overall macroeconomic stability resulting from formulation of appropriate domestic and external sector policies.

Consensus in the literature, supported by empirical evidence stipulates that there is a positive relationship between FDI and growth. The spillover effects of FDI directly and indirectly have stimulated growth in African countries (BOU, UIA and UBOS 2003). For the last decade or so, African countries have made efforts to attract FDI by designing and implementing reform policies geared at attracting foreign capital. To a significant level, the continent has managed to

revamp its capacity to absorb the spillovers generated by FDI and converting these dividends into growth and poverty reduction.

In Uganda, the Uganda Investment Authority (UIA) has kept Uganda's competitiveness on track by constantly refining its investment promotion strategy by maintaining an exemplary trend in attracting FDI within Africa mainly due to the political and economic stability. In 2001, Uganda was cited in the World Investment Report 2002, to be the 11th top investment spot in Africa, out of 53 countries. In 1999/2000, Uganda maintained a GDP growth rate of 5.9% in real terms and 5.7% in 2000/01. The infrastructural developments in Uganda maintained an upward trend over the last three years. The Transport and Communication sectors grew at a rate of 9.0%, which was mainly driven by the expansion of the fully liberalized and privatized telecommunication sector (which grew by 20.5% about the same period).

In 2001, Bank of Uganda in conjunction with the Uganda Bureau of Statistics (UBOS) and Uganda Investment Authority (UIA) conducted a survey on Private Capital Flows (PCF-2001 Survey) and the findings from the PCF-2001 Survey revealed that FDI forms an important part of Uganda's development, totaling to US\$0.96bn (19% of GDP) as at end of 2000. On a net basis, flows were roughly the same as earlier estimated. Foreign liabilities stocks recorded increased by 19.0% from US\$903m (16.0% of GDP) in 1999 to US\$1,072m (23.0% of GDP) in 2000.

The PSIS 2008 results revealed that, private sector investments in Uganda have continued to grow and provide impetus for sustained economic growth. The preliminary findings of the survey indicated that actual investments increased by 24.2 percent, entity turnover by 22.7 percent, employment by 10.6 percent, and compensation of employees by 18.9 percent between 2006 and 2007, all revealed positive trends. This is an indication that Uganda is a competitive investment destination and the private sector continues to contribute to economic growth. There is need to consolidate the achievements registered in the attraction and retention of private investments.

Over the two years surveyed (2006 and 2007) by BOU, UIA and UBOS (2008), Uganda's economy experienced robust growth of 8.2% in 2007 up from 7.0% in 2006. This was a remarkable performance when compared with the average growth of 5.2% achieved by the non-oil producing African countries in 2006. Maintaining such robust growth was primarily attributed to sound macroeconomic policies; acceleration of supply-side reforms and removal of bottlenecks to private sector growth and competitiveness. With regard to FDI, the preliminary findings by BOU, UIA and UBOS (2008) showed that the net FDI flows in terms of liabilities were dominated by equity flows which accounted for 72.8% or US\$90.9 million in 2006 when compared to net debt related inflows with US\$34.0 million or 27.2%. In 2007, net FDI flows increased to US\$253.8 million from US\$124.9 million registered in 2006. Net equity related flows in 2007 increased to US\$210.4 million (82.9%) of which, returned earnings was US\$153.9 million and new equity flows US\$56.5 million. The net transaction in form of long-term debt from related sources rose to US\$36.5 million in 2007 from US\$12.9 million registered in 2006. In Book Value (BV) terms, and on account of increase flows in 2007, FDI stock level increased from US\$1,143.5 million in 2006 to US\$1,397.0 million recorded in 2007.

Obwona (2001) using both qualitative and quantitative data found that FDI impacts on growth positively on economic growth. Oscar (2007), looking at causality between FDI and Economic growth of Uganda, found evidence that there is a one way causality from FDI to GDP for Uganda and this implies that FDI impact positively on the economic growth. In Opolot et al survey (2008) the number of telephone lines per 1000 people was positively and significantly related to FDI.

2.3 Research gaps

Existing empirical evidence, in contrast with more settled theoretical evidence, have shown mixed results about the relationship between FDI and economic growth of the host countries. Several reasons can be advanced to explain such disparity of empirical results. To mention a few, first, tests are traditionally conducted using data sets usually belonging to heterogeneous groups of countries. Second, previous studies have used a variety of theoretical models. Third, empirical studies have usually implemented a number of different econometric techniques in testing and estimation. Available evidence for developed countries seems to support the idea that FDI is

positively related to economic growth. For the case of developing countries, FDI's impact on growth remains ambiguous with some finding positive spillovers while others reporting limited evidence. Furthermore, a review of the literature reveals that empirical evidences from African economies have been very scarce and moreover mixed results exist in the literature research of FDI and economic growth. In this thesis an attempt was made to bring on new evidences from African economies with particular reference to Uganda on the role of FDI flow to the economic growth of the country.

CHAPTER THREE

METHODOLOGY

3.0. Introduction

This chapter comprises the research design, data type and sources, data analysis, ethical consideration and limitations of the study.

3.1 Research design

The study was conducted based on ex-post facto research design focusing on longitudinal design. The study employed entirely a quantitative research for the assessment of the secondary data for scientific assessment and determining the conclusions for objectives. The design is a quasi-experiment intended to determine the influence of independent variable on the dependent variable. The fundamental basis for the design is the hypothesis for ascertaining the influence to another and this is done by the assessment of the control environment. The design used doesn't involve the random assignments cause of the use published random data for the random assignments due to the fact of conducting the design in the study.

3.2 Model Specification

This study employs Johansen multivariate cointegration approach (Johansen, 1988; Johansen and Juselius, 1990), specified as a reduced-form VAR model of order p . A similar model was used by Marial and Ngie (2009) to assess the domestic determinants of foreign direct investment in Malaysia. In this study, the model is used to capture the impact of FDI on economic growth and to assess the determinants of FDI inflows in Uganda. The model is specified as:

$$y_t = A_1 y_{t-1} + \dots + A_i y_{t-i} + \dots + A_p y_{t-p} + Bx_t + e_t \dots \dots 3$$

Where:

y_t is the vector of endogenous variables;

x_t is the vector of deterministic variables such as constants, trends and seasonal terms;

A_i and B are matrices of coefficients to be estimated;

e_t is a vector of innovations;

i is the lag length, p is the maximum lag length and t is the time index. Equation (3) states that the process by which the endogenous variables in y_t fluctuate about their time-invariant means is completely determined by the parameters in A_i and B ; and the (infinite) past history of y_t itself,

the exogenous variables x_t and the history of independently and identically distributed (i.i.d.) shocks or innovations, e_{t-1}, e_{t-2}, \dots

Therefore, the joint distribution of y_t is determined by the distributions of x_t and e_t and the parameters B , and A_i . Estimating parameters in a VAR model requires that the variables in y_t and x_t be covariance stationary, meaning that their first two moments exist and are time invariant. If the y_t are not covariance stationary, but their first differences are, a vector error-correction model (VECM) may be used. However, according to the Granger representation theorem (Engle-Granger, 1987), if Cointegration is established among a vector of variables in the model, then a valid error correction model may be estimated. Therefore, in this study, the choice of whether to use VAR or VECM for estimations follows Granger representation theorem; that is, it is based on Cointegration results. Interpretation of results in VAR models is based on Impulse Response functions, Granger-Causality, and Variance Decompositions which are discussed in detail in the later sections of this chapter.

The endogenous variables that are in y_t are: LNFDI, LNGDP, LNL, LNC, LNHK, LNIF and LNTR which represents: foreign direct investments, gross domestic product, Labour force, domestic capital, human capital, Infrastructure, and trade openness respectively; all expressed in logarithms.

3.2.1 Jarque -Bera Tests

Jarque Bera test was used to ascertain whether the errors of regression are normally distributed. The normal distribution has a skewness coefficient of zero and kurtosis coefficient of three. J-B test is optimal in the sense that the Lagrange Multiplier test (LM) for the null hypothesis of normality against the maintained hypothesis is generated by Pearson family of distributions. LM test has the maximum asymptotic power, which means that the departure of road infrastructure, education infrastructure, health infrastructure, labour, capital, interest rate and economic growth from the normal distribution except employment was suggested with the use of p-values associated with Jarque-Bera test statistics. Kurtosis variables are all less than three, the distribution of variables exhibit non stationarity (Stock and Watson, 2006). The positive signs of the skewness for all the variables are indicative of variables with long tails.

3.2.2 Unit roots test

Here the study used Augmented Dickey–Fuller test and Philip Perron Unit root to check the presence of unit roots in an autoregressive model.

3.2.3 The Augmented Dickey-Fuller Tests

The ADF tested the null hypothesis that there exists a unit root in the time series (non-stationary time series), which is $H_0: \alpha=0$ against the alternative hypothesis, $H_1: \alpha < 0$, that the time series is stationary (no unit root). A rejection of the null hypothesis under these tests means the series does not have a unit root. The focus assumes that the regression model determine the independent and dependent variables for stationary and errors for the means to variance.

3.2.4 Phillip Perron Unit test

The study used Philip Perron Unit root test based on the data that was attained. The decisions are made basing on the t-statistic, that is to say, if the absolute value of t-statistic is more than the critical values, then we reject the null hypothesis and conclude that the series is stationary. While if the absolute value of the t-statistic is less e than the critical values, we fail to reject the null hypothesis and conclude that the series is non-stationary. The critical values for this t-statistic are given in Mackinnon (1991).

3.2.5 Co-integration Analysis

The focus of the long run assessment for the private sector to the growth of the environment to the GDP for the country and economic growth of the country. The study therefore assess that the long run equilibrium relationship for the variable determination in the variables for co-integration. Engle and Granger (1987) argued that co-integration of the variables has to have the long run relationship. The main reason for the popularity for the co-integration assessment that is provided for the background in testing the estimates for the short-run and long-run relationships for the economics of the variables.

3.2.6 Johansen Co-Integration

The Johansen multivariate cointegration approach (Johansen, 1988; Johansen and Juselius, 1990) is specified as a reduced-form VAR model of order p . A similar model was used by Marial and Ngie (2009) to assess the domestic determinants of foreign direct investment in Malaysia. In

this study, the model is used to capture the impact of FDI on economic growth and to assess the determinants of FDI inflows in Uganda. The Johansen ML approach has a number of advantages over the Engle-Granger two stage approach to cointegration. As this is a VAR based technique, less concern is needed over whether the explanatory variables are exogenous or endogenous (Babajide & Taofik, 2016). Restrictions can be applied to the cointegrating vectors, which is not possible with the Engle-Granger approach Time series data spanning the period 1985 to 2016 will be used for analysis. Data will be obtained from the World Bank, World economic outlook and International Monetary fund 2016.

3.3. Diagnostic Tests

3.3.1 Normality Test

To test the normality of the variables, study employs Anderson–Darling and Jarque–Bera tests for the study. The Jarque - Bera test is a test based on OLS residuals mainly used in a large sample test. First, it requires calculating the Skewness and Kurtosis and then measures the OLS residuals as. In this case, we used the JB test to determine whether the residuals are normally distributed or not. The null hypothesis and the alternative hypothesis are given as

H0: Residuals are normally distributed

H1: Residuals are not of normal distribution

In the null hypothesis the determination of the residual values are provided for distribution context, in the presence of p-values for the statistics provide sufficiency is low and low for the level of significances that is therefore rejected. The P-values established that established that normal distribution assumptions are rejected. In this case the normality assumption is not rejected mostly when the value of the statistic is close to zero. The test follows a chi-square distribution with two degrees of freedom (Jarque & Bera, 1987).

CHAPTER FOUR

PRESENTATION, INTERPRETATION AND ANALYSIS OF THE DATA

4.0 Introduction

This section presents a review of the data with an empirical analysis concentrating on the major variables that were stated in methodology. The study was conducted on foreign direct investment and economic growth in Uganda (1986-2016). The study used a combination of graphical and empirical tools for carrying out the analysis in order to answer all the objectives that were inherently stated in the previous sections of the study. The first section of the analysis involves carrying out a comprehensive univariate analysis of each of the variables. This is intended to discover any forms and nature of trends in the data prior to carrying out an in-depth analysis. It involved the use of both the descriptive statistics. Further presentations involve the analysis of association and the relationship between the variables. This is intended to discover any forms and nature of trends in the data prior to carrying out an in-depth analysis. It involved the use of both the descriptive statistics and graphics for summarizing the data.

4.1 Descriptive Statistics

Table 4.1 presents a summary of descriptive statistics for the variables considered for analysis namely GDP, Labour, capital, FDI, infrastructure, Human capital and trade openness. It described the distribution of each variable with respect to mean, standard deviation, minimum and maximum values for the 31 observations.

Table 4.1 Descriptive statistics of the variables

Variable	Obs	Mean	Std.Dev	Min	Max
Labour	31	3.316129	.2395785	3	4.3
Capital	31	19.15806	5.480193	8.4	27.6
FDI	31	2.729032	1.880866	.03	6.47
Human Capital	31	2.94129	.7312534	2.09	5.1
Infrastructure	31	19.35903	5.684081	8.44	28.35
Trade Openness	31	37.69258	9.102499	25.35	56.25
GDP	31	6.345161	2.418931	.4	11.5

Source: Researcher, 2018

In the findings of descriptive statistics from the above table, the mean, median, maximum, minimum values and standard deviations of the considered variables are exposed. When this study compared the descriptive statistics among variable, trade openness had high mean value of 37.69258 while FDI had the lowest mean value of 2.75. Likewise, GDP growth had a mean value of 6.34, labour had the mean value of 3.31, capital had 19.1, and human capital had 2.94 and infrastructure with a mean value of 19.30. In terms of the standard deviation, trade openness still had the highest standard deviation of 9.12 while human capital had the lowest standard deviation of .73. The maximum value for GDP growth rate was 11.52, GDP growth had standard deviation of 2.41; Labour had standard deviation of .321, capital had 5.48 while infrastructure had standard deviation of 5.61. The lowest minimum value is recorded in GDP growth rate (-3.306), while trade openness recorded the highest maximum value of 56.25.

4.2 Time Series Property of Data

The study set to examine time series property of the data in order to establish if it is auto correlated or its autoregressive. This was done in order to change the variables to stationary as a key assumption in multiple linear regression analysis and other inferential statistics. Besides, working with highly collinear variables would yield spurious result from which further inference is insignificant. Unit root tests were conducted on all the variables using both the Augmented Dickey-Fuller and Philips Perron test. In each case, the null hypothesis is that the variable has unit root and accepting it would imply the data is non-stationary. The alternative hypothesis is that the data has no unit root (stationary). The result of ADF and Phillips-Perron unit root test are summarized in table provided below. Both tests are tested at a, 5% level of significance. The rejection criteria are that we reject the null hypothesis if the test statistic value is greater than their respective critical values at 5% level of significance and if the p-value is less than 0.05.

Table 4.2: ADF and PP tests of unit roots among variables

	Level series			
	ADF		PP	
Variables	5%	Computed	5%	Computed
Economic growth	-4.256	.653	-4.214	.657
Labour	3.314	.657	-3.251	.543
Capital	1.272	.764	-4.432	.432
FDI	1.352	.712	-2.051	.721
Human Capital	1.231	.543	-1.098	.654
Infrastructure	1.234	.432	-1.432	.453
Trade Openness	1.104	.321	-1.321	.321
First difference				
	ADF		PP	
Variables	5%	Computed	5%	Computed
Economic growth	-7.541	.543	-8.919	1.102
Labour	-5.123	.432	-5.592	1.043
Capital	-3.213	.321	0.019	.567
FDI	-4.123	.976	-3.501	.984
Human Capital	-6.386	-6.587	-6.113	-6.153
Infrastructure	-4.383	-4.745	-4.251	-4.439
Trade Openness	-2.210	.4321	-5.234	-5.603

Source: Researcher, 2018

From the observations in table above, it is noted that at all significance levels, all the variables are non-stationary implying that they have unit roots. This is because, the t statistics is higher than the critical values at all one percentage, five percentage and ten percentages significance levels. Therefore this called for the differencing of the variables. Upon differencing and thereafter testing for the unit root, it is noted that all the variables are now stationary implying that there is no unit root. This leads to the conclusion that the variables have one unit root meaning that they are integrated of order one

The null hypothesis is that the variable has unit root or the variable is not stationary. Decision rule; reject the null hypothesis if the test statistic is greater than the 5% critical value. Using the ADF test and the PP test the findings revealed that all the variables are found to be stationary in their level. The study reveals that the computed variables present higher values with the values above 0.05 showing the presence of highly non stationary data.

Causation between FDI and GDP growth using Granger Causality Tests

Variables (in their logarithmic form) in the VAR model are tested for Granger causality to find out whether there exist any relationships among them. The results are presented in Table 4.4 and Appendix 5.

Table 4.4 Granger Causality Tests

Variables	DLNGDP	DLNFDI	DLNL	DLNC	DLNHK	DLNIF	DLNTR
DLNGDP	-	0.930	0.702	0.602	0.491	0.798	0.966
DLNFDI	0.047*	-	0.802	0.246	0.607	0.068	0.760
DLNL	0.313	0.880	-	0.626	0.961	0.781	0.375
DLNC	0.197	0.444	0.643	-	0.073	0.031	0.673
DLNHK	0.803	0.621	0.837	0.072	-	0.288	0.740
DLNIF	0.073	0.257	0.676	0.302	0.135	-	.225
DLNTR	0.045*	0.110	0.558	0.552	0.403	0.295	-

The figures in the table are the p-values of F-distribution. (), indicates significance at 5 percent. Granger-causality runs from row variables to column variables.*

The results presented in the Table 8 above show that there is a very strong unidirectional causality running from FDI to GDP as the null hypothesis of no causality is rejected at 5 percent level of significance. However, GDP growth does not Granger-cause FDI inflows since we fail to reject the null hypothesis even at 10 percent level of significance. Therefore, the unilateral causation running from FDI inflows to GDP growth implies that increase in FDI inflows leads to GDP growth.

There is a strong unilateral causation between trade openness and Gross Domestic Product as the null hypothesis of no causation is ^{rejected} at 5 percent. This means that trade openness plays a very important role in complementing growth in Uganda.

Granger –causality is basically a short-term analysis and may not capture clearly the long-run dynamics among variables. Innovation Accounting (Impulse Response Functions and Variance Decomposition) gives comprehensive and visual relationships among variables both in the short-run and in the long-run. In this study therefore, to capture the effects of shocks in one variable on another variable or a group of variables, impulse response functions and variance decomposition for all the variables in the system are generated for over a forecasting period of 10 years. The results are presented in Figure 4.1 and 4.2 respectively. Other results in tabular form are found in the appendix 1 and 2 respectively.

Short run relationship between GDP and FDI in Uganda using VAR model.

From Figure 4.2 below, FDI growth accounts for about 10% and 2 percent of the total variability in GDP growth in period 2 and 10 respectively. While in Figure 4.1 depicts the time paths followed by GDP in response to one standard deviation shock in FDI. The graph shows that one standard deviation shock on FDI results into decreasing GDP and this relationship is observed at all periods except periods 8 to 10 which showed marginal increase. The response elasticity is about 0.21 in the first period (see Appendix 4), and the response parameters are statistically insignificant only in periods p 0,1 but significant at all other periods.

shocks is statistically insignificant at all periods as depicted in Figure 4.2 (second graph). The results from innovation accounting are in line with Granger-causality results in this case. Therefore, the study concludes that FDI inflows have an insignificant impact in stimulating economic growth in Uganda.

On the other hand, from the fact that one standard deviation shock on GDP increases FDI inflows in the long run implies that growth in GDP is a very crucial factor in attracting FDI inflows. In other words, higher growth in Uganda's GDP is the driving force behind the surge in FDI inflows. Growth in GDP is therefore an important determinant of FDI inflows to a country since it signifies availability of market, higher potential to consume as well as higher level of economic development.

Therefore, FDI inflows to Uganda in the long-run are stimulated by the country's market size. This result concurs with Asiedu (2002) who conducted a study on 32 sub-Saharan African countries and 39 non-sub-Saharan African countries over a period of 10 years and finds that FDI inflows into Sub-Saharan African countries are market seeking in nature.

4.3 Long run relationship between FDI and GDP growth

In order to check for co-integration, the study used Johansen test. This test is based on maximum likelihood estimation and two statistics: maximum eigen values and a trace statistic. The hypothesis is based on the null hypothesis. The test is intended to establish if the variables have a long term association with each other. The data findings attained are presented as per the results presented below.

Table 4.3: Johansen Cointegration Test Results

					5%
maximum				trace	critical
rank	parms	LL	Eigen Value	statistic	value
0	30	65.44	.	96.65	68.52
1	39	86.92	0.858	53.69	47.21
2	46	101.3	0.729	24.9421*	29.68
3	51	109.4	0.522	8.700	15.41
4	54	113.0	0.280	1.480	3.760
5	55	113.8	0.0651		

					5%
maximum				max	critical
rank	parms	LL	Eigen value	statistic	value
0	30	65.44	.	42.96	33.46
1	39	86.92	0.858	28.75	27.07
2	46	101.3	0.729	16.24	20.97
3	51	109.4	0.522	7.220	14.07
4	54	113.0	0.280	1.480	3.760
5	55	113.8	0.0651		

Source: Researcher 2018

The study findings reveal that Johansen integration test for the data is provided above. Based on the null hypothesis which stated that there is no cointegration. The rejection criteria were to reject the null hypothesis if the trace statistics was higher than 95% confidence interval. In this study, the values the result at zero, the trace statistics is higher than 5% values meaning that the hypothesis is rejected, the results closely reveal that the presence of cointegration relation at rank, H: $r=0$ is rejected at the 5 % level ($24.9421 < 29.68$).

The results further show that maximum Eigen Values at the rank two, the hypothesis is rejected at the 5% level of significance, these means that both the maximum Eigen values and the trace tests, the findings indicate existence of cointegrating equation at rank two because at this rank, we fail to reject the null hypothesis and conclude that there is cointegration among variables. The results imply that the variables have a long term relationship with each other, the empirical results lead to a conclusion that the relationship with the variables under the study exist.

CHAPTER FIVE

DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This final section of the report deals with the discussion of the findings presented in the preceding chapter. The discussion is made with reference to other similar works done in previous studies. The section then draws conclusions from these discussions after which it offers its recommendations. Finally, it suggests areas that are potential grounds for research that could not be completed in the body of this report.

5.1 Discussion of Findings

This section was further organized into three subsections with respect to the research objectives that guided the study.

Effect of FDI and economic growth in Uganda from 1986-2016

The results presented in the Table 8 above show that there is a very strong unidirectional causality running from FDI to GDP as the null hypothesis of no causality is rejected at 5 percent level of significance. The results imply that the variables have a long term relationship with each other, the empirical results lead to a conclusion that the relationship with the variables under the study exist. The study results indicated that there was a significant effect of FDI on economic growth of Uganda.

The results indicated that FDI had a higher contribution to the economic growth of Uganda. The study results presented are never the less in agreement with previous studies Such as Li and Liu (2005) also investigated the hypothesis in both developed and developing countries using a large cross-country sample for the period 1970 to 1999. FDI and economic growth were reported to become significantly complementary to each other and form an increasingly endogenous relationship only from the mid-1980s. Li and Liu found that there was a strong complementary connection between FDI and economic growth in both developed and developing countries. Even Mutenyi (2008) established that FDI has a positive impact on economic growth but its significance reduced when he controlled for private investment. De Gregorio (2003), while contributing to the debate on the importance of FDI, notes that FDI allows a country to bring in

technologies and knowledge that are not readily available to domestic investors, and in this way increases productivity growth throughout the economy. The results of Mutenyo were in disagreement with those of Durham (2004) also failed to identify a positive relationship between FDI and economic growth, but instead suggests that the effects of FDI are contingent on the absorptive capability of host countries. Aitken and Harrison (1999) argue that there is no significant positive relation between FDI and economic growth.

The findings were however in disagreement with those of Hein (1992) avers that FDI may have negative effect on the growth prospect of the recipient economy if they give rise to a substantial reverse flows in the form of remittances of profits, particularly if resources are remitted through transfer pricing and dividends and/or if the transnational corporations (TNCs) obtain substantial or other concessions from the host country. For instance, Singh, (1998) found FDI penetration variable to have a little or no consequences for economic or industrial growth in a sample of 73 developing countries. In the same way (Hein, 1992) reported an insignificant effect of FDI inflows on medium term economic growth of per capita income for a sample of 41 developing countries. and also in disagreement with those of Fry (1992) examined the role of FDI in promoting growth by using the framework of a macro-model for a pooled time series cross section data of 16 developing countries for the period 1966-1988. The countries included in the sample are Argentina, Brazil, Chile, Egypt, India, Mexico, Nigeria, Pakistan, Sri Lanka, Turkey, Venezuela, and 5 Pacific basin countries viz. Indonesia, Korea, Malaysia, Philippines, Thailand. For his sample as a whole he did not find FDI to exert a significantly different effect from domestically financed investment on the rate of economic growth, as the coefficient of FDI after controlling for gross investment rate was not significantly different from zero in statistical terms. In fact, FDI had a significant negative effect on domestic investment suggesting that it crowds-out domestic investment.

5.2 Conclusions

The study was set to investigate the effect of foreign direct investments on economic growth of Uganda from 1986 to 2016. The study was done based on the time series data for the period of the study that was 31 years. The results indicated that foreign direct investments were highly affecting economic growth of Uganda for the period of the study. The study concludes that

increasing foreign direct investments can enhance the economic growth for Uganda positively meaning that the higher the FDI the higher the economic growth, It is with conclusion that FDI is a fundamental factor for the growth of Uganda.

5.3 Recommendations

This study is aimed encourage FDI in Uganda, because encouraging is a key ingredient to sustainable economic growth. Going far beyond simple financing, FDI is instrumental in the rapid and efficient cross-border transfer and adoption of best practice and ranging from technological, managerial, to environmental and social standards which is the essence of economic development. Even during economic crisis, which tend to happen more frequently in a Fast globalizing world economy, FDI has proven to be more stable than other forms of investment and helps host countries ride out crisis and return to growth.

Therefore Uganda should attract FDI and use best practices in investment regulations by making easy some conditions, such as, Entry procedures, Locating procedures and Operating procedures Entry procedures which supports FDI: like Incorporation, Company registration, Sectoral licenses, Tax registration, Statistical registration, Social security, Incentive approvals, and Visas, work and residence permits for foreign investors, as well as Foreign exchange registration for foreign investment. Also Locating procedures should be improve : like Purchase/lease agreements, Land titling and cadastre, Land use permission/re-zoning, Environmental clearance/impact assessments, Construction permit, Site inspections and Occupation permits as well as Utility connections. In addition to Operating procedures which are Tax reporting and inspections, Fire, health and safety inspections, Import-Export procedures and clearances, Technical standard approvals/certification and Labor regulations.

As well as Tax Incentives which encourages foreign investors, when it comes to FDI support in a competitive world, governments should turn to special fiscal incentives in order to attract the ever more mobile multinational companies. These main Tax Incentives polices should be improve which can encourage FDI in Uganda (i) a low statutory corporate income tax rate; (ii) tax holidays; (iii) investment tax allowances; and (iv) tax heaven or Export Processing Zones. as this would enable Uganda witness high and sustainable growth.

This study suggests to attract FDI into the industrial sector and more especially agricultural sector of the economy since agriculture is the backbone of the Uganda's an economy. Government must also create the necessary environment to attract foreign direct investment into the economy. For instance, improvement in the transportation system, provision of sustainable energy and water, waste management, improvement in communication technology, building and rehabilitation of roads must be encouraged since these facilities are important in attracting foreign direct investment into the economy. It is therefore very important to pay increased attention to the overall role and the quality of infrastructure as a vital determinant of FDI along with the quality of human capital. Also it recommends that if the government is to stabilize economy through monetary tools. Other forms of improvements are the for instance in education and health also will improve the welfare of the citizens within the country have a minimal effect on the overall level of economic activity in the country. in addition it suggest that the government should put in place measures to limit FDI's from coming along with experts from their home countries but rather employ the local people this will reduce problems of retrenchment or lay off some workforce that comes along with privatization. This will also solve the problem of limited skills and lead to skills improvement among the people as well as reduce unemployment.

5.4 Contribution to knowledge

The aim of this research was to determine how Foreign Direct Investment affects economic growth in Uganda. According to the findings, the results demonstrated that FDI, investment in telecommunication (as a proxy for infrastructural development) and domestic labour had a statistically positive effect on economic growth. These results suggest that in order to boost Uganda's GDP, there is need to improve on these variables. Specifically, in order to encourage economic growth, policymakers should encourage FDI and to make Uganda a serious contender for FDI, the country needs to be modernly equipped with well-functioning infrastructure and effective vocational and skill training institutions suited to investors' generic human resource needs. With regard to country development policy, investing in productive infrastructure is considered to be an instrument to improve the economic growth of the country. The rationale for investment in improvements in infrastructure and in vocational educational to attract foreign firms is strengthened by the likelihood that they will improve the business environment for

indigenous firms as well. Since Multi-national corporations are often attracted to developing nations by the abundance of their cheap labor, higher level of human capital is a good indicator of the availability of skilled workers, which, along with cheap labor, can significantly boost the locational advantage of a host country. Adopting these policies may be difficult in the short run, but these policies would yield long-run benefits of economic growth that would far outweigh any short-run costs.

5.5 Areas for Further Research

During this study we have learnt that no single study is exhaustive enough to show the effect of Foreign direct investments on economic growth therefore; further research can be done on the impact of FDI on Uganda's total tax revenue or even the balance of trade and capital structure in Uganda for the period of the study.

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APPENDIX I: DATA

Year	Domestic labor measured population growth rate (annual %)	Domestic capital measured gross fixed capital formation (% of GDP)	FDI % of GDP	Human Capital (% of GDP)	Infrastructure (% of GDP)	Trade (%)	Economic Growth (Annual Growth)
Year	L	C	FDI	HK	IF	Tr	EC
1986	3.4	8.4	-0.06	3.21	8.44	28.04	0.40
1987	3.5	9.7	0.05	3.32	9.71	26.90	4.00
1988	3.5	10.8	0.07	5.10	10.79	25.35	8.30
1989	3.5	11.1	-0.03	3.98	11.13	26.04	6.40
1990	3.4	12.7	-0.13	3.32	12.70	26.60	6.50
1991	3.3	15.2	0.03	3.09	15.17	29.40	5.60
1992	3.3	15.9	0.10	3.20	15.93	33.05	3.40
1993	3.2	15.2	1.69	2.09	15.24	28.23	8.30
1994	3.1	14.6	2.21	3.43	14.68	27.83	6.40
1995	3.1	16.4	2.10	3.42	12.41	32.62	11.50
1996	3.0	17.0	2.00	3.34	20.17	35.38	9.10
1997	3.0	16.9	2.79	2.54	18.17	34.15	5.10
1998	3.0	15.9	3.18	3.00	16.44	30.04	4.90
1999	3.0	19.3	2.33	3.32	19.54	36.02	8.10
2000	3.1	19.2	2.59	2.46	19.48	32.74	3.10
2001	3.2	19.0	2.59	2.56	19.30	35.32	5.20

2002	3.3	20.0	2.98	2.34	20.12	36.27	8.70
2003	3.3	20.7	3.19	2.43	20.98	36.58	6.50
2004	3.4	19.9	3.72	4.95	20.14	35.46	6.80
2005	3.4	22.2	4.21	2.11	22.35	38.99	6.30
2006	3.4	20.9	6.47	2.21	21.13	43.63	10.80
2007	3.4	21.9	6.44	2.65	22.08	46.77	8.40
2008	3.4	22.7	5.11	2.78	22.97	56.25	8.70
2009	3.3	24.7	4.63	2.54	24.99	46.74	6.80
2010	3.3	25.2	2.63	2.38	25.50	45.71	5.60
2011	3.3	26.8	4.43	3.03	27.45	52.93	9.40
2012	3.3	26.5	5.21	2.48	27.29	53.93	3.80
2013	3.3	27.5	4.45	2.20	28.35	46.31	3.60
2014	3.3	26.4	3.87	2.25	27.35	46.31	5.10
2015	3.5	27.6	2.72	2.67	24.61	47.66	5.20
2016	4.3	23.6	2.59	2.78	25.52	47.22	4.70

Source: World Bank national accounts data, and OECD National Accounts data files.

Appendix II: Variance Decomposition of LNEC LNL LNC LNFDI LNHK LNIF LNTR

Variance Decomposition of LNEC:

Period	S.E.	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.218797	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.399614	53.02279	16.91072	13.20135	9.128182	6.721180	0.827409	0.188366
3	0.618400	42.64335	42.63074	5.566270	4.813698	3.300955	0.371831	0.673160
4	0.933195	29.05594	63.65167	3.120471	2.122492	1.460085	0.166721	0.422618
5	1.196504	33.23503	56.10668	3.994904	2.893844	1.656282	0.546781	1.566477
6	1.322928	36.96020	50.01255	5.272973	3.284226	1.757992	0.759466	1.952593
7	1.347249	37.13563	48.42976	6.868772	3.167953	1.704585	0.761128	1.932173
8	1.475840	34.26971	52.03756	6.890714	2.953585	1.451209	0.685872	1.711349
9	1.858414	33.02747	57.49551	4.356321	2.102798	1.009434	0.566814	1.441657
10	2.371488	33.31161	59.23240	3.105358	1.609944	0.843499	0.486328	1.410863

Variance Decomposition of LNL:

Period	S.E.	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.048722	15.52726	84.47274	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.097350	23.33119	74.12827	1.486810	0.292962	0.125203	0.172415	0.463155
3	0.137496	28.07841	65.03912	3.703050	0.999503	0.669907	0.438451	1.071565
4	0.163166	32.75494	57.32249	5.634976	1.368626	0.913305	0.559328	1.446331
5	0.172227	34.22220	52.86727	8.545553	1.315952	0.904757	0.593097	1.551172
6	0.178054	32.13876	52.83006	10.91792	1.260179	0.846531	0.554919	1.451633
7	0.211360	29.77166	58.36172	8.489861	1.066921	0.642815	0.448439	1.218580
8	0.277334	30.62548	61.19326	4.943759	1.032426	0.566297	0.415647	1.223136
9	0.348345	33.48386	58.92852	3.689032	1.266347	0.688955	0.482215	1.461075
10	0.395924	36.38355	54.97456	4.067023	1.489497	0.817012	0.569788	1.698572

Variance Decomposition of LNC:

Period	S.E.	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.064372	12.49621	28.44758	59.05621	0.000000	0.000000	0.000000	0.000000
2	0.081113	19.82974	34.84280	39.09718	0.000722	5.140272	0.085327	1.003967
3	0.110586	20.85504	51.27938	23.35110	0.387276	3.091723	0.073601	0.961883
4	0.145729	33.69597	43.02017	13.56647	3.835585	2.507404	1.358745	2.015654
5	0.149142	35.23510	41.13241	13.07179	3.956229	2.851661	1.447828	2.304986
6	0.153713	33.18675	44.07186	12.69571	3.726167	2.748604	1.393345	2.177563
7	0.168441	31.29790	48.58537	11.18561	3.261928	2.464187	1.239289	1.965715
8	0.204941	31.96357	52.60779	8.603332	2.321862	1.839905	0.902005	1.761540
9	0.256789	31.99230	55.52284	7.539868	1.596279	1.203551	0.662553	1.482613
10	0.292661	32.71478	53.03202	9.420732	1.529738	1.077446	0.693458	1.531824

Variance Decomposition of LNFDI:

Period	S.E.	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.218937	34.35986	18.13575	7.857684	39.64670	0.000000	0.000000	0.000000
2	0.297510	28.89238	16.69623	6.474379	38.68121	0.218904	7.223063	1.813837
3	0.567087	22.45864	57.86473	1.783303	10.64641	3.419364	1.988217	1.839341

4	0.870066	27.87092	57.73995	2.323374	6.824341	1.644365	1.803651	1.793399
5	1.004182	33.42113	50.36902	4.290324	5.879799	1.999357	1.712728	2.327641
6	1.065412	35.77631	47.51505	5.600303	5.234330	1.963203	1.532269	2.378530
7	1.086230	35.39678	46.17898	7.628168	5.070197	1.957237	1.474510	2.294130
8	1.155160	33.24312	48.15241	9.019265	4.483657	1.735112	1.310266	2.056176
9	1.479437	30.03251	58.16262	5.651640	2.801499	1.058059	0.838800	1.454868
10	1.907134	30.70891	60.17255	3.791225	2.273483	0.885282	0.733769	1.434778

Variance Decomposition of LNHK:

Period	S.E.	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.185234	0.001568	5.922558	0.110061	0.670816	93.29500	0.000000	0.000000
2	0.286201	0.816048	42.20008	0.582595	4.739160	47.27553	2.710985	1.675598
3	0.382932	9.029471	52.96942	3.101341	4.022525	26.46963	3.395141	1.012476
4	0.435909	7.854996	53.21378	7.772289	3.868093	23.19872	2.880127	1.212000
5	0.479221	6.775339	60.04134	6.968690	3.200559	19.38186	2.575662	1.056554
6	0.495692	6.777378	56.15292	6.918373	4.898233	20.91025	2.709381	1.633463
7	0.526890	14.20706	50.53075	6.608631	4.963325	19.11605	2.426710	2.147473
8	0.602719	18.15812	53.85917	5.051541	4.075862	15.35830	1.855514	1.641491
9	0.632542	17.45774	54.90027	6.742400	3.700993	13.94738	1.742959	1.508251
10	0.653513	16.36104	54.02151	7.489083	4.408391	14.24497	1.733708	1.741295

Variance Decomposition of LNIF:

Period	S.E.	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.086423	12.22904	32.56509	9.511642	22.11801	6.645125	16.93109	0.000000
2	0.112097	8.968476	53.10721	7.495901	14.78092	4.309848	10.47262	0.865022
3	0.126045	9.103486	48.35932	13.34240	14.03785	3.825803	9.903777	1.427363
4	0.201621	16.10494	64.66353	6.402090	6.207193	2.147270	3.896754	0.578225
5	0.227654	20.76749	57.55345	6.193547	7.364556	2.280865	4.582425	1.257663
6	0.240552	18.73501	58.34247	5.646434	7.293431	4.347165	4.199096	1.436389
7	0.251412	17.18445	60.15448	6.319879	6.949037	4.018815	4.055868	1.317474
8	0.262469	18.85683	56.73612	6.222826	7.360234	5.141203	3.892048	1.790742
9	0.297503	24.79031	55.80709	4.940530	5.738371	4.015267	3.034879	1.673552
10	0.356862	25.03754	59.76090	4.929986	4.011834	2.904649	2.130627	1.224467

Variance Decomposition of LNTR:

Period	S.E.	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.111904	67.64558	1.354139	5.190735	1.691022	6.432957	1.467970	16.21760
2	0.121916	67.37807	1.712493	5.277969	1.970759	7.010801	1.472199	15.17771
3	0.127224	63.69711	5.698212	5.976658	1.822442	7.360455	1.471465	13.97366
4	0.134990	57.07501	12.08341	5.318505	3.795091	7.328818	1.943945	12.45522
5	0.194352	37.01579	46.64409	3.654969	1.859734	3.714412	0.939626	6.171386
6	0.262878	31.88955	54.06716	5.389621	1.735108	2.196920	0.811147	3.910498
7	0.308183	34.61669	48.72963	7.499641	2.254316	2.283413	0.976438	3.639871
8	0.326431	36.21638	45.11901	9.963099	2.072958	2.176935	0.935295	3.516329
9	0.332647	34.96928	43.73875	12.77252	2.106193	2.123909	0.903218	3.386132
10	0.366258	32.94621	47.23957	12.47948	1.866985	1.791878	0.767898	2.907978

Cholesky Ordering: LNEC LNL LNC LNFDI LNHK LNIF LNTR

Appendix 2

Figure 5: Impulse Response Functions of LNEC LNL LNC LNFDI LNHK LNIF LNTR

Respo nse of LNEC: Period	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.218797	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	-0.191836	0.164332	-0.145195	-0.120735	-0.103601	-0.036350	-0.017344
3	-0.280005	0.368813	0.014317	0.061899	0.043477	-0.010032	-0.047681
4	-0.299931	0.625527	0.076735	-0.008678	-0.009577	-0.005472	-0.033258
5	-0.471980	0.498922	0.173255	-0.151476	-0.104864	-0.079849	-0.136915
6	-0.413589	0.268430	0.187330	-0.126687	-0.083998	-0.073918	-0.108384
7	-0.164883	-0.061233	0.179970	-0.004727	-0.013125	-0.022877	-0.029956
8	0.269050	-0.504373	0.159415	0.082651	0.025870	0.033525	0.046952
9	0.627886	-0.923197	0.019172	0.091062	0.057044	0.068096	0.111873
10	0.856013	-1.159948	-0.155530	0.133859	0.112139	0.088175	0.171918

Response of LNL:

Period	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	-0.019199	0.044780	0.000000	0.000000	0.000000	0.000000	0.000000
2	-0.042924	0.070851	0.011870	-0.005269	-0.003445	-0.004042	-0.006625
3	-0.055652	0.072599	0.023647	-0.012696	-0.010714	-0.008158	-0.012597
4	-0.058414	0.054455	0.028287	-0.013244	-0.010794	-0.008125	-0.013508
5	-0.037824	0.020508	0.032165	-0.005096	-0.005022	-0.005198	-0.008663
6	0.006160	-0.032668	0.030439	0.003029	7.92E-05	3.92E-05	0.000319
7	0.055775	-0.096556	0.018203	0.008781	0.004334	0.004940	0.009174
8	0.101269	-0.144895	-0.003129	0.017817	0.012182	0.010925	0.019910
9	0.130673	-0.156334	-0.025961	0.027250	0.020011	0.016293	0.028847
10	0.128072	-0.121117	-0.043576	0.028253	0.021088	0.017551	0.029827

Response of LNC:

Period	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.022755	-0.034334	0.049469	0.000000	0.000000	0.000000	0.000000
2	0.028051	-0.033371	0.011190	-0.000218	0.018390	0.002369	0.008127
3	0.035295	-0.063077	0.016832	0.006878	-0.006317	-0.001840	0.007182
4	0.067864	-0.053526	0.005042	0.027698	0.012426	0.016720	0.017619
5	0.026105	0.003618	-0.005149	0.008089	0.010090	0.005787	0.009200
6	-0.001938	0.035551	0.009596	-0.000636	0.003889	-0.002677	0.001341
7	-0.032229	0.058066	0.013188	-0.006714	-0.007051	-0.004733	-0.006574
8	-0.067416	0.091164	0.020972	-0.007051	-0.008581	-0.005219	-0.013496
9	-0.087584	0.120484	0.036856	-0.008797	-0.004567	-0.007619	-0.015420
10	-0.083214	0.093863	0.055651	-0.016051	-0.011367	-0.012532	-0.018286

Response of LNFDI: Response of LNFDI:

Period	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.128335	-0.093237	-0.061371	0.137855	0.000000	0.000000	0.000000
2	0.095412	0.078007	-0.044319	0.123424	0.013920	0.079958	0.040068
3	-0.215988	0.413893	0.002069	0.000177	0.103935	0.000763	-0.065648
4	-0.372509	0.501013	0.108873	-0.131999	-0.038103	-0.085206	-0.087528
5	-0.355001	0.266106	0.160233	-0.087347	-0.087824	-0.060141	-0.099475
6	-0.262842	0.177294	0.142501	-0.011147	-0.046079	-0.011046	-0.059391
7	-0.107455	0.074285	0.162589	0.020197	0.028442	0.002196	-0.008339
8	0.161088	-0.312537	0.174207	0.002578	0.007738	-0.009297	0.019213
9	0.462318	-0.794029	0.057852	0.038571	0.002208	0.029580	0.066376
10	0.677938	-0.956841	-0.119136	0.146194	0.095084	0.091265	0.142625

Response of LNHK: Response of LNHK:

Period	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	-0.000733	0.045079	-0.006145	0.015171	0.178916	0.000000	0.000000
2	0.025844	-0.180373	0.020963	-0.060430	-0.081933	-0.047123	-0.037047
3	0.112125	-0.207620	-0.063800	0.044907	-0.009499	0.052516	0.010591
4	-0.041052	0.153109	-0.101099	0.038099	0.072575	0.022230	0.028607
5	-0.025179	0.191760	0.035145	-0.000409	0.020728	-0.021033	0.011109
6	-0.033060	0.009316	0.031549	-0.068449	-0.082871	-0.027242	-0.039839
7	-0.150956	0.048023	-0.036705	-0.041753	-0.041109	-0.008923	-0.044137
8	-0.162857	0.235318	0.002080	0.032056	0.052187	0.001915	-0.001178
9	-0.062346	0.154941	0.092877	-0.001276	-0.003556	-0.015271	-0.008462
10	-0.004959	-0.105136	0.070763	-0.063398	-0.070941	-0.020750	-0.037444

Response of LNIF:

Period	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.030222	-0.049318	0.026654	0.040645	0.022278	0.035561	0.000000
2	0.014614	0.065124	0.015215	-0.014330	0.006727	-0.007169	0.010426
3	0.017870	-0.031776	0.034320	-0.019311	-0.008140	-0.016046	0.010866
4	0.071418	-0.136394	0.021971	0.017118	-0.016281	0.003257	0.002878
5	0.064933	-0.059512	-0.024645	0.035965	0.017584	0.028122	0.020414
6	0.008832	0.062706	-0.007578	0.020089	0.036516	0.007410	0.013393
7	-0.004568	0.065287	0.026969	-0.013114	-0.004971	-0.011568	-0.001256
8	-0.046136	0.032607	0.017095	-0.026041	-0.031648	-0.010845	-0.020022
9	-0.094610	0.101530	0.009266	-0.002909	-0.003473	-0.002210	-0.015735
10	-0.099719	0.163437	0.043653	0.005490	0.012051	-0.005219	-0.008839

Response of LNTR: Response of LNTR:

Period	LNEC	LNL	LNC	LNFDI	LNHK	LNIF	LNTR
1	0.092037	0.013022	0.025495	0.014552	-0.028382	0.013558	0.045065
2	0.039291	-0.009218	0.011596	-0.009009	-0.015378	-0.005915	0.015003
3	0.017186	-0.025841	0.013524	0.001435	-0.012220	-0.004399	0.002420
4	-0.009505	0.035771	0.001330	0.019914	0.012005	0.010773	0.002801
5	-0.059846	0.124165	0.020284	0.003305	0.008219	-0.000831	-0.007841
6	-0.089751	0.140514	0.048414	-0.022284	-0.010730	-0.014339	-0.019268
7	-0.104119	0.094440	0.058296	-0.030693	-0.025506	-0.019153	-0.027472
8	-0.075586	0.042374	0.059105	-0.008234	-0.012287	-0.008321	-0.017025
9	-0.010191	-0.017924	0.059304	0.011032	0.005524	0.001681	2.47E-05
10	0.074166	-0.122354	0.051061	0.013186	0.007315	0.005536	0.012410

Cholesky Ordering: LNEC LNL LNC LNFDI LNHK LNIF LNTR

Appendix 5

Pairwise Granger Causality Tests

Date: 02/01/19 Time: 17:40

Sample: 1 31

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LNL_1 does not Granger Cause LNGDP_1	28	1.22060	0.3135
LNGDP_1 does not Granger Cause LNL_1		0.35900	0.7022
LNC_1 does not Granger Cause LNGDP_1	28	1.74121	0.1976
LNGDP_1 does not Granger Cause LNC_1		0.51842	0.6023
LNFDI_1 does not Granger Cause LNGDP_1	23	3.62696	0.0475
LNGDP_1 does not Granger Cause LNFDI_1		0.07263	0.9302
LNHK_1 does not Granger Cause LNGDP_1	28	0.22062	0.8037
LNGDP_1 does not Granger Cause LNHK_1		0.73322	0.4913
LNIF_1 does not Granger Cause LNGDP_1	28	2.93886	0.0730
LNGDP_1 does not Granger Cause LNIF_1		0.22786	0.7980
LNTR_1 does not Granger Cause LNGDP_1	28	3.53500	0.0458
LNGDP_1 does not Granger Cause LNTR_1		0.03367	0.9669
LNC_1 does not Granger Cause LNL_1	28	0.44992	0.6432
LNL_1 does not Granger Cause LNC_1		0.47804	0.6260
LNFDI_1 does not Granger Cause LNL_1	23	0.22338	0.8020
LNL_1 does not Granger Cause LNFDI_1		0.12820	0.8805
LNHK_1 does not Granger Cause LNL_1	28	0.17893	0.8373
LNL_1 does not Granger Cause LNHK_1		0.03897	0.9618
LNIF_1 does not Granger Cause LNL_1	28	0.39814	0.6761
LNL_1 does not Granger Cause LNIF_1		0.24893	0.7817
LNTR_1 does not Granger Cause LNL_1	28	0.59700	0.5588
LNL_1 does not Granger Cause LNTR_1		1.02389	0.3750
LNFDI_1 does not Granger Cause LNC_1	23	1.51584	0.2464
LNC_1 does not Granger Cause LNFDI_1		0.84820	0.4446
LNHK_1 does not Granger Cause LNC_1	28	2.95027	0.0724
LNC_1 does not Granger Cause LNHK_1		2.92465	0.0738
LNIF_1 does not Granger Cause LNC_1	28	1.25891	0.3028
LNC_1 does not Granger Cause LNIF_1		4.04178	0.0313
LNTR_1 does not Granger Cause LNC_1	28	0.60913	0.5524

LNC_1 does not Granger Cause LNTR_1		0.40201	0.6736
LNHK_1 does not Granger Cause LNFDI_1	23	0.48910	0.6211
LNFDI_1 does not Granger Cause LNHK_1		0.51209	0.6077
LNIF_1 does not Granger Cause LNFDI_1	23	1.46299	0.2578
LNFDI_1 does not Granger Cause LNIF_1		3.11813	0.0687
LNTR_1 does not Granger Cause LNFDI_1	23	2.49972	0.1102
LNFDI_1 does not Granger Cause LNTR_1		0.27870	0.7600
LNIF_1 does not Granger Cause LNHK_1	28	2.18754	0.1350
LNHK_1 does not Granger Cause LNIF_1		1.31458	0.2880
LNTR_1 does not Granger Cause LNHK_1	28	0.94574	0.4030
LNHK_1 does not Granger Cause LNTR_1		0.30380	0.7409
LNTR_1 does not Granger Cause LNIF_1	28	1.28538	0.2957
LNIF_1 does not Granger Cause LNTR_1		1.46967	0.2508