NEAR EAST UNIVERSITY

THE GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS

DOES FOREIGN DIRECT INVESTMENT PROMOTES ECONOMIC GROWTH
MEASURING AND ANALYZING THE IMPACT OF FOREIGN DIRECT INVESTMENT ON ECONOMIC GROWTH: EVIDENCE FROM BRAZIL

IN ACCORDANCE WITH THE REGULATIONS OF THE GRADUATE SCHOOL OF SOCIAL SCIENCES

MASTER THESIS

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DECLARATION

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ÖZET

Bu çalışma doğrudan yabancı yatırımların Brezilyada (1980-2013) ekonomik büyüme üzerindeki etkisini araştırmaktadır. Uygulanan yaklaşım ve model zaman dizileri üzerine veriler kullanarak elde yapılan eşbütünleşim methodu ile Vektor hata düzeltme modelidir. İstatistiksel özellikler durağanlık durumunu ve uzun surely Johansen eşbütünleşim ilişkisini test etmek üzere ele alınmıştır. Nedenselliğin yönünü belirlemek için ise Gragner nedensellik test yöntemi kullanılmıştır. Elde edilen sonuçlar tüm dizilerin I(1) şeklinde I(0) noktasında durağanlık göstererek bütünleştiğini gözler önüne sermektedir. Burada (ADF) ve (PP) yöntemleri uygulanmıştır.

Johansen eşbütünleşim tarama sonuçları değişkenler arasında uzun surely periyotlarda bir ilişkinin var olduğunu ve etkileşimli olduklarını ortaya çıkarmaktadır. Izleme istatistikleri iki eşbütünleşim eşitliği olduğunu gösterirken öte yandan özdeğerlik istatistikleri maksimum oranda iken önem seviyesi (%5) olan tek bir eşitlik olduğunu göstermektedir. (VAR) system modeli uzun vadede doğrudan yabancı yatırımların brüt sabit sermaye oluşumunun ve ithalatların ekonomik gelişim üzerinde önem seviyesi (%5) ve (%1) olan etkileri olduğunu işaret etmektedir. Bu çalışma ayrıca FDI'in gecikmeli eki değişkeninin RGDP'yi tanımlamada büyük önemi olduğunu göstermiştir ve uzun vadeli denklik seviyesi (%37) olarak görülmüştür.

Granger testi iki adet çift yönlü nedenselliğin varlığını ortaya çıkarmıştır. Bunlardan birincisi FDI den GDP ye, ikincisi ise FDI den EXPT'e şeklindedir. Sapma olguları tüm değişkenlerin kendilerini büyük oranda tanımlar şekilde olduklarını göstermektedir. Tüm bu sonuçlardan da görüleceği gibi doğrudan yabancı yatırımların ekonomik büyüme getiren bir ana etken gibi alıgılanmaktadır.

Anahtar kelimeler: doğrudan yabancı yatırımlar, ekonomik büyüme, eşbütünleşim, Vektor hata düzeltme modeli , Granger nedensellik testi.

ABSTRACT

This study examines the impact of foreign direct investments on economic growth in Brazil (1980-2013). The estimation approach employed is Cointegration and Vector Error Correction Model, using time series data. The statistical properties of the series were tested for unit root for Stationarity and Johansen Cointegration of long run relationship. While Granger Causality test was used to determine the direction of Causality. The results indicate that all the series were integrated of order one (first difference) that is I(1) by using Augmented Dickey Fuller (ADF) and Phillips Perron (PP) meaning that the data are stationary at I(0).

The Johansen Cointegration results show that the variables are cointegrated meaning that there are long run relationship among the variables meaning that they have long run associationship . The trace statistic shows that there are two Cointegration equations while maximum Engenvalue statistic shows one Cointegration equation at (5%) level of significance. The estimated model under (VAR) system shows that foreign direct investment; gross fixed capital formation and exports are positive and statistically significant determinants of economic growth with the test at (5%) and (1%) level of significance in the long run. Also this study found that the two lagged variables of FDI are jointly significant to explain the RGDP in the short run, and the speed of adjustment toward the long run equilibrium level was approximately (37%).

The Granger Causality test suggests two bi-directional Causalities running from FDI to GDP and from FDI to EXPT. The variance decomposition shows that all the variables largely explained themselves. Foreign direct investment can be seen from this findings as an integral part of an open and effective international economic system which constitutes a major catalyst to development.

Keywords: Foreign Direct Investment, Economic Growth, Co-integration, Vector Error Correction Model, Granger Causality.

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LIST OF ABBREVIATIONS

ADF	Augmented Dickey-Fuller test
AIC	Akaike Information Criteria
ECT	Error Correction Term
EXPT	Exports
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GNI	Gross National Income
IMF	Internal Monetary Fund
ERCOSUR	Southern Common Market of Argentina, Brazil, Paraguay, Uruguay And Venezuela
MNE	Multinational Enterprises
OECD	Organization for Economic Cooperation and Development
PP Test	Phillips-Peron test
RGDP	Real Gross Domestic Product
TNCs	Trans-national Corporations
SIC	Schwartz Information Criterion
UNCTAD	United Nation Cooperation for Trade and Development
VAR	Vector Auto Regressive
WDI	World Development Indicators
WTO	World Trade Organization

CHAPTER ONE

GENERAL INTRODUCTION

1.1 Background of the Study

The main obstacles that developing countries are considered to economic growth is the capital, therefor developing countries try to attract the foreign capital (foreign direct investment) that can reduce the gap between savings and investment. FDI has a major starring character in the process of economic growth of countries. Growth process in tern of production capabilities is tottery dependant on power of economic, technology, liberalization of trade regimes and foreign capitals. In this perspective, the consideration about globalization that can suggests unprecedented chances for emerging countries to realize more rapidly rates of growth via investment and trade development cross-border investments, especially for transactional corporations and companies (Hailu, 2010).

The Brazilian economy at the period of (1970s) was categorized by huge inflows of FDI. The core elements of wealth in the stock of FDI remained connected to the orientation of economic growth and consolidation of non-discriminatory foreign capital stocks. At (1980s) distinguished as change in the direction of capital flows because of distrust on non-compliance foreign commitments regarded with instability of economic performances all of that led to increase in risks with uncertainty about acting to reduce inflation through specific plans. in the early years of (1990s) decade Brazilian economy experiences recovery of foreign direct investment inflows stocks was resulted from integrating financial markets and Brazilian open economy with privatization which help to capture opportunities that could enhance growth process (Pereira, 2013). The decade of (1990s) was characterized by high growth of yield curve of foreign direct investment. Thus there were optimistic expectations about FDI could take the advantages of the new

engine to modernize the Brazilian economy and business structure. But in the other hand foreign capitals failed to keep growth capacity feeding sustainable which made countries to have doubts about the possibilities for attraction more foreign capital from abroad (Calegario, 2013).

According to Borensztein, there are three essential channels which foreign direct investment can effects economic growth: first one is foreign capitals increase the domestic saving through accumulation of capitals, second the spillover effects on bringing new technologies to host counties that utilize the natural resources through increasing productivity and efficiency, third FDI lead to increase foreign demand (exports) for local production due to the enlargement in the production capacities and increasing the competitiveness of domestic firms. However this association ship most probably dependant on countries absorptive capacity in term of the nature of trade regimes, degree of openness and the development of local labour force which refer to human capital (Borensztein, 1998).

Many studies and researcher went further like (Ruxanda and Muraru, 2010), to concern about what governments should offer like incentives or making investment environment more stable to foreign companies to attract them to invest in their countries, this step came after huge number of studies and researches in micro and macro analysis that supporting positive spillover effects of foreign direct investment to host countries.

(Adelegan, 2000), during the decade of (1970s) the growth rate of international trade was more than the growth rate of foreign capitals thus as soon as became the most important activity of economy till middle of (1980s) when the index of world foreign direct investments started to growth again more than international trade because of the importance of transmitting tools launching marketing obtaining networks for efficient production and sales internationally through FDI. Thus foreign companies could subsidy from the utilization of assets and using their resources more efficiently while host

countries can benefit through achieving new technology levels and raising the domestic firms' productivity in the global trade competition.

According to Khan, whose declared that in recent two decades foreign direct investment became a major part of countries capital formation and significant tool or factor which enhance developing countries to achieve high level of prosperity and economic growth rate, that is why we see now growing countries trying to attract more foreign capitals which help them to put future strategies for development. Also he emphasize that FDI in globalization and regional integration era could affect the amount of FDI in host countries since in could reduce the costs of trade, as FDI is understood by way of a combination of funds, technology, marketing and management (Khan, 2007).

1.2 Statement of the Problem

Capital formation is considered as one of the major economic constraint of developing countries to finance the needed investment for economic growth. Foreign direct investment is widely regarded as a window to fill the gap. The preference for foreign direct investment stems from its acknowledged advantages (Sjoholm, 1999) and. The effort by emerging and developing countries to improve their business climate stems from the desire to attract foreign direct investment. While the FDI-growth linkage is ambiguous, most macroeconomic studies nevertheless support the notion of a positive role of FDI within particular economic conditions. There are three main channels through which FDI can bring about economic growth. First is to augments domestic savings in the process of capital accumulation. Second, technology spill overs for increase factor productivity and efficient utilization of resources. Third, increase exports as a result of increased capacity and competitiveness in domestic production. However, this linkage is often said to depend on absorptive capacity, which includes the level of human capital development, type of trade regimes and degree of openness (Ajayi, 2006) and (Borensztein, 1998).

There are various studies on the impact of FDI on economic growth. Some studies are based on regional (Bashir, 2012; Al-Ahdulrazag and Bataineh, 2007; Blonigen and Wang, 2005; Li and Liu, 2005), others are country specific (Antwi, et al., 2014; Peirera, 2013; Saqib et al., 2013; Ruxanda and Muraru, 2010). Also, there are some studies that are specifically on Nigeria (Olusanya, 2014; Umo et al., 2013; Oyatoye et al., 2011; Oyeyide, 2005; Akinlo, 2004; Otepola, 2002). However, recent evidence affirms that the relationship between foreign direct investment and growth depend on country's conditions and period specific (Basem and Aber, 2012; Asiedu, 2001; De Mello, 1997). They argued that the relationship between FDI in one region may not be the same for other regions also, in countries within a region may be different from one another and from one period to another. The results of studies on FDI-growth linkage are thus mixed.

There is also an increasing resistance to further liberalization within the economy that limits the options available to the government to source FDI. In addition to the perception of FDI as parasitic and retarding the development of domestic industries for export promotion had engendered hostility to multi-national companies and their direct investments in many countries. This seems to limit the impact FDI may exert on economic growth.

1.3 Objective of the Study

The focal objective of the study is to explore the role of foreign direct investment in promoting economic growth in Brazil.

The second objective is to discover the causal relationship between foreign direct investment and economic growth in Brazil.

Furthermore, to develop an appropriate modelling technique in estimating the relationship between foreign direct investment and economic growth in Brazil.

1.4 Research Questions

This study tries to answer two fundamental questions which are:

(i) Does foreign direct investment promote economic growth in Brazil?

(ii) Is there a causal relationship between foreign direct investment and economic growth in Brazil?

1.5 Research Hypotheses

The hypotheses that the study seeks to investigate are stated below for empirical investigation:

(i) H_1: Foreign direct investment does not promote economic growth in Brazil.

(ii) H_2: There is no causal relationship between foreign direct investment and economic growth in Brazil.

(iii) H_3: Foreign direct investment has no causal effect on economic growth in Brazil.

1.6 Scope and Limitation of the Study

The concentration of the paper is to examine whether foreign direct investment promote economic growth in Brazil. The study will however be limited to explore the impact and causal effect of foreign direct investment on the growth of Brazilian economy. The scope of this research is based on geographical, time and conceptual scope. Geographically the study area is Brazil, the Latin's most populous country. Furthermore, this study covers the period of thirty two years (1980 to 2013).

The limitations of the study are concerned with the problems of time constraints, money constraints and lack of some requirements (for example lack of quarterly series of some variables) for in-depth research investigation about the study.

1.7 Significance of the Study

Brazil has meaningfully improved the functioning of its market economy, in the other hand decisive steps towards macroeconomic stability and structural reforms are also enhancing the attractiveness of foreign investments. This study recognizes the growing confirmations from cross-country and country specific studies that the association between foreign direct investment and economic growth has generated.

Successful and sustainable economic growth requires continued improvement in investment and productivity, and therefore a study of the impact of FDI on growth and development is important not only to researchers interested in economic development but also to people responsible for formulating development policy.

Hence, the findings and empirical results of this study will provide empirical evidence and tries to contribute to the policy debate on the linkage foreign direct investment for policy, research purposes. More so the outcome of this research work is hoped to be of assistance to other student researchers who might be interested in the same or similar subject. Besides, it is also hoped that the research findings will add to the examined literatures and knowledge on the subject matter.

1.8 Organization of the Study

This study is organized into six chapters. Chapter one is general introduction and includes background to the study, research hypothesis of the study, objectives of the study and limitation of the study. Chapter two is literature review and theoretical framework. It provides empirical and theoretical reviews in addition to theoretical framework of the study. Chapter three is General overview about FDI and economic growth in Brazil. This part discusses conceptual issue, definition about foreign direct investment, FDI trends and economic outlook of Brazil economic performance. Chapter four is research methodology. This part discusses various methods and techniques for analysing data. Chapter five is empirical analysis and discussion of findings. Chapter six is conclusion of major summary findings, and recommendations.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Theoretical Literature Review

During (20_{th}) century the debate is still going on in the relationship between foreign direct investment and economic growth in developing countries. The old economics schools argument pointed to the significant role of foreign capital in economic growth procedure this is most probably due to the significant role of FDI in term of main channels of technological diffusion among countries with regard growth of human capital and productivity. The overview of endogenous growth theory concentrated on main transition channels of FDI toward economic growth in the long run, according to this model the growth in national income, per capita income in long term is near to zero or equal to technical improvement rate which is exogenously determined out of this model for growth. This theory proposed that the influences of foreign capitals can only observed in the short run which are via technologies, productivity, and human capital stated that because of diminishing of capital returns capital marginal productivity in long run thus these foreign capital have no longer influence in economic growth process in host countries. According to this model the long run growth of economy generate from labour force, capital growth with regard to economic policies of international trade with rest of world that could promote FDI (Martin, 1995).

The main crucial idea of neoliberal school is foreign capital might promote economic growth through concentrating capital to industrial sector declared that Multinational Corporations is a good example as a main source that will provide FDI that could be the engine of growth process for developing countries. Another advantage that local firms and host countries gain from FDI is the wealth and economic control transfer to foreign

power which lead to economic modernizations and development since foreign companies have more managerial experiences than local companies, from that prospective neoliberals claim that foreign direct investment affords massive advantages to local companies and recipient economies of transnational corporations members (Chenery, 1961).

Furthermore the classical theory of growth stated that multinational companies with foreign direct investment have very vital or crucial role in economic growth process in host countries which proposed main channels including, technological progressing tools, labour force skills and abilities and capital transactions which can enhance current account deficit, expansion of the income taxation base and foreign exchange earnings, foundation of employment, infrastructural progress (Augustine, 2006).

Economists of neoclassical growth theory share to debate of FDI and economic growth arguing and explaining that contribution of foreign capital to growth happen only in short run because the diminishing return of capital that cannot stimulate growth in the long run, but effecting some variables for example research human capital and development and researches (D&R) (Romer, 1992).

FDI and economic growth are positively correlated to each other's in host countries, if host countries want benefits from FDI inflows in long term growth experience they should achieve at least minimum level of human capital, having specific policies for macro stability and liberalized markets (Bengoa, 2003).

(Feenstra and Markusen, 1994), advocate that foreign direct investments promote technology transferring from foreign counties to host developing countries, he declared that FDI as a main source of local firms productivity as FDI increase the store (stocks) of knowledge, and adaptation of new management skills and experiences with advanced training systems and technical assistance all these factors spur economic growth through the increasing efficiency and productivity of labour force (human capital) as an external factor in endogenous growth model. In term of domestic firms these external factors can

have varies impacts on private and public investment performance because of decreasing in capital marginal returns, thus these forms of external factors (labour force and technology) growth preclude marginal returns of capital to decrease in long run from this point of view FDI considered as a facilitator for technical progress and domestic investment growth.

According to Markussen, who agreed with ideas that support role of FDI on enhancing technological diffusion that spur economy to growth which is quite observable in host countries declared that because of focusing multinational companies in industrial sector with very high ratio of development and researches to sales and with professional management skills that make their work perfect (Markussen, 1998).

(Soyohalom, 1999), Multinational Corporations are major channel for transferring technology to developing countries which could help domestic investment to become more productive through imitating technologies and advanced management experiences of foreign firms.

From this important point of view Soyohalom, concentrate on the intervention of government need to be considered through some actions in order local firms to get benefits from foreign direct investment like providing special incentives to foreign firms in order to attract more capital to build up physical accumulation be reducing the gap between saving and investment.

(Borensztein, 1998), indicates that foreign direct investment contributes to growth and it is an important way of transportation for the transfer of technology. It is found by Borensztein that there is an interaction between foreign direct investment and human capital which affects economic growth positively.

(Caves, 1971), foreign direct investment has several positive effects like increasing productivity, technology transferring of technical tools, managerial skill new programs

and knowing how to do in the domestic market. These encourage investors to make much more investments on FDI.

(De Mello, 1997), Observed that domestic firm's capabilities for competing with global foreign companies play significant role, meaning that efficiency of local companies considered the most dependable factor which can reflect the impacts of FDI on economic growth in positive way. Recommend that long term economic growth progress is dependent on productivity level of domestic capital.

(Blomstrom, 1994), some countries are more successful in coming up with foreign direct investment because they have well educated population who can understand and obtain advantages of new innovations to the whole economy which is a very important factor in order to succeed in FDI. Therefore, such countries have better economic growth while some others have none or less level or growth.

(Arogundade, 2011), indicates that such countries get much more positive results and benefits provided by FDI as they possess a higher level of institutional capability. In this sense, Arogundade emphasizes the importance of bureaucratic ideas in providing and applying foreign direct investment techniques.

Foreign direct investment is very important in obtaining economic growth. Capital formation can be defined as a vital economic constrain most widely used specially by developing countries in order to finance investments that result in economic growth (Sjoholm, 1999).

Both globalization and integration of the world economy have remarkable effects on foreign direct investment. This is caused by the fact that the innovating countries can simply employ cheap factors of producing from other countries that are less developed parallel to the aim of globalization, which is to break trade barriers. The more a country innovates in the light of globalization the better foreign direct investment is executed by it resulting in a higher level of economic growth (Durban, 2004).

FDI in spite of having huge advantage in the hot economy it may also have negative affect on economic growth; many economists considered that foreign capitals that typically directed to investment are usually dangerous or risky as the political condition countries may change in an immediate. The shareholders think that their assets or stocks in dramatic threat because of instable political conditions, so the risk feature is at all times really high, these dramatic changes may cause to expropriation, which mean as a scenario where the government can take control of a firm's property and assets of foreign shareholders, In case it feels that the enterprise is a threat to national security (Rahul, 2011).

IMF Magazine of Finance & Development states that some time foreign direct investment creates Negative external factors in labour markets in the countries whose receiving foreign capital. Because these firms (MNCs) they are seeking for profit maximization in first place and to achieve this purpose they are trying to reducing costs, also declared that these companies enters for specific strategies plans in order to achieve high return on investment, by showing evidences that transnational companies pay insignificant superior above the domestic wages this slightly paying may increase the purchasing power of labours but it has negative impacts on distribution of domestic labour force cause when the price level increases this lead supply to increase in the same time the demand will decrease similarly as price of labour goes up also supply of labour goes up to and this could generate a distortion in other world there will be disequilibrium in the labour market and this may create unemployment.

According to Al Saffar, foreign companies often import input of production from outside which is important to keep the project and its usually from their home countries which is compared with host countries that make local production inputs less dependence and making damages its abilities of taking the advantages of natural local resources and lead saving level to go up, otherwise this could harm the interests of host countries rather than it could such as trade deficit (Al Saffar, 2010).

(Apergis, 2006), explained that domestic firms must take the consideration of implementing and adopting that the technology offer to them in order to increase or at least keep the productivity which can compete the foreign firms and keeping the market shares of them , he state that if the market is imperfect competition and if the gap of using technologies is large between foreign and local firms regarding that FDI might be able to raise the cost of production such as prices and wage levels of local input supplies that will lead foreign firms to full control the market shares. That could lead to increasing in unemployment rate due to crowding out domestic firms that made them to cut production.

2.2 Empirical Literature Review

There are lot of experimental, empirical studies and researches concerned with associationship between foreign direct investment and economic growth. The previous analyses confirm that the argument on the influence of FDI on development process is not definite or inclusive. Foreign direct investment enhancement effects are commonly determined by the nature of host countries, it may be negative, insignificant or it can be positive regarded with the economic macro stability, technological capabilities besides institutional circumstances of recipient countries. Initial empirical researches related to foreign direct investment and economic development Interconnection was adapted and familiarized by Solow. Solow's methodology defines the augmented Solow growth model regarding with technology, capital, labour, foreign capital inflows in addition to the vector of supplementary variables as the volume of imports and exports. Behind this theory, too many practical works that relate to the impact of foreign capitals concentrated on its impact on production and productivity, besides the collaboration between foreign direct investment and human capital and the level of technological transferring (Noy and Vu, 2009).

Nevertheless, recent experimental work by (Mankiw, 1992), and others have been done, pioneered that adding education as a new variable to the standard equation for the growth as representing of human resources alternatively.

(Blomstrom, 1994), foreign capital has a positive effect on growth in term of precipitant countries, declared that the host countries should have reached specific standard scales of growth rate that may supports it acquire the assistances of higher productivity. Unlike (De Mello, 1997), who found relationship concerning foreign direct investment with local investment is negative in industrialized countries which are develop countries, on the other hand proposed positive effects of foreign investment on economic growth in both developed and developing countries, then he make sure that long-run process of development in recipient countries derived by spillovers effects of transferring technological information to host countries.

(Durham, 2004), spillover effects of FDI are largely dependent on the power or ability of domestic financial markets in recipients countries, depicting that host countries whose are more efficient about banking and financial systems or well developed financial stabilities will gain more than other countries whose do not have stable financial system. Besides the strength of institutional conditions and authorized rights with establishing friendly environments for foreign shareholders have better chances towards advantage starting with foreign capital inflows.

A panel data study of (12) countries was carried out by (De Gregorio, 2003), the results of this study suggested significant and positive impact of foreign direct investment on economic growth, additional result were shown that the productivity in domestic investment is lower than the FDI productivity.

(Fry, 1992), attempted to test the role of foreign direct investment is stimulating domestic investment by using macro model as a framework of data of (16) growing countries he found that the role of FDI to spur the domestic investment was not very strong as the coefficient of FDI was not statistically significant, but for Pacific basin countries he found that foreign direct investments have positive effects on domestic investment in other words foreign direct investment have crowded-in domestic investment.

(Blomstrom, 1994), investigated the effects of FDI inflows in per capita income growth rate sample was contained (23) developed and (78) developing countries. They found positive and significant effects of FDI on per capita income for over all sample, after that they went further when they divided the developing in to two groups regarding the level of per capita they found that the impact of FDI was no statically significant from zero but still have positive sign confirmed that local firms of host countries are not adopting new technologies to reduce the technological gap in term of productivity and skilled labour force between them and (MNCs), claimed that less growth countries are learning not too much of Multinational Corporations experiences (MNCs).

(Borensztein, 1998), used (69) countries as a sample of an empirical study tried to investigate the impacts of FDI on economic growth in recipient countries, the empirical results shows that development process in recipient countries is largely dependent on stocks of human resources, extrapolate from that diffusion of technologies between countries through foreign capitals potentially lead spur economic growth, further more they postulate foreign direct investment lead to increasing in domestic investment in host countries.

(Okodua, 2009), test the cause and effects of foreign direct investment to economic growth the case study was Nigeria using the Cointegration methodology under (VAR) system, he captured long run equilibrium associationship between economic growth and foreign capital, he went by asserting unidirectional or both side feedback relation between foreign direct investment and economic growth

(Vu and Noy, 2009), conduct empirical study to investigate the impact of FDI by sector on economic growth in well growth countries. They argued that the impact of foreign capital carry positive effects to economic growth but declared that the impact was not statistically significant, the impacts.

(Ruxanda and Muraru, 2010), used simultaneous equation methodology in order to test the endogenous causal relationship between foreign direct investment and economic

growth in Romania, empirical results showed that there is bi-directional Causality or two side feedback association ship between economic development and foreign capital inflows meaning that foreign capital lead to economic growth in the same time more stable economic conditions lead to attracts more capital inflows.

(Li and Liu, 2005), investigated the nexus between economic growth and foreign direct investment conducting simultaneous equation as a framework for an empirical panel analysis study for (84) growing countries covered from (1970 – 1999). Results suggest positive relation between economic progress and FDI considering human resources in growing countries; in the other hand they suggest negative impressions of FDI on economic growth when there a technology gap between host countries and foreign countries.

Haile & Assefa in (2006) tried to examine the nature and factors that attracting FDI in Ethiopia as a case study of their empirical research concentrating on theoretical relation between economic growth and foreign direct investment in a edition to policy regimes, results of this study concluded implicated that the growth rate of real gross domestic products bedsides free trade with exports promotions have positive effects on attracting foreign capitals rather than non-stable macro level regard with lack of infrastructure capabilities seems to have negative impacts on attracting foreign direct investment in Ethiopia (Haile & Assefa, 2006).

(Basem and Abeer, 2012), adopted time series techniques for an empirical study in order to investigate the role of foreign capital flows in economic growth using Cointegration approach to capture two side feedback Causality based on FDI-led growth hypothesis, the time of the study covered from (1990-2009) in Jordan case study. An empirical results indicated that foreign direct investment do not spur economic growth directly in addition to positive impacts of FDI and exports on real GDP.

Another study on Jordan was performed by (Al–Ahdulrazaq and Bataineh, 2007), they employed Autoregressive Integrated Moving Average (ARIMA) model Box-Jenkins

methodology in order to predict FDI inflows into Jordan for period (2004-2005). Empirical outcomes expected that FDI inflows observed an increasing tendency. Furthermore, it estimated a positive influence of FDI inflows on the different macroeconomic variables in the economy of Jordan.

(Bashir, 2012), explored the impact of foreign capital flows on gross domestic product regarding with of South Asian countries. The relationship was tested by adopting techniques of multiple regressions. Result indicated that the general model is significant. They found a positive and significant association between gross domestic product and capital inflows.

Soltani in (2012) studied the influence of foreign direct investment on economic growth in Tunisia in place of a host country. The techniques of econometric time series analysis were employed. The experimental outcomes of empirical study suggested that foreign capital inflows can support to improve the process of long-term growth. Asserting that during the past eras, the worldwide economy has been entirely sophisticated free trade, free movement of capital flows and goods; and investment has become important for developing countries (Soltani, 2012).

(Saqib, 2013), investigated the influence of FDI on Pakistan's economy as case study, the data covered from (1981- 2010). Besides FDI, four other variables were included which are: debt, trade, inflation and domestic investment. An Ordinary least square estimation technique was employed. The findings indicated that FDI had negative impacts on Pakistan's economy decides negative influence of national debts, inflation rate, trade on gross domestic product only results of local investment showed that domestic investment can spur economic growth.

Both single-equation and simultaneous equation models were modified as empirical approach for specific study tried to examine the linkage between non extractive foreign capital and economic growth in the same time tried to investigate determinants of attracting FDI inflows to Nigerian economy. The results supposed that foreign direct

investment and economic growth are positively correlated to each other in Nigeria further results indicated that the main determinants of foreign capital to the economy are the size of markets regarded with development in infrastructure macro stability (Ayanwale, 2007).

Oyatoye in (2011) studied the possible impact and association between FDI and development of economy in Nigeria. The scope covers a period of (20) years (1987 – 2006). Empirical results indicated that FDI contribute in positive way to growth in GDP (Oyatoye, 2011).

The Causality feedback test for FDI and growth rate yearly series data from(1980-2009) has been examined by (Ugochukwu, 2013), by using OLS estimation techniques to establish the linkage between foreign investment and progression rate, the study used three independent variables which are gross fixed capital formation, exchange rate and interest rate. Furthermore, Granger Causality test was applied to test for the direction of Causality, the study found a positive and insignificant affect from foreign direct investment to growth rate for the Nigerian economy. Gross fixed capital formation and exchange rate found to have a positive and significant effect on economic growth, while Interest rate found to have positive but insignificant effect on economic growth.

(Umoh, 2013), for the case of Nigeria using time series data covering from (1970-2010) examining the association between foreign capital economic growth rate of GDP, the study proposed bi-directional Causality between FDI and economic growth. A single and simultaneous equation system was applied to test if there are two ways causation between FDI and growth rate. The empirical results shows that foreign investment and growth rate are jointly determined and the results show a positive feedback runs from FDI to growth rate and from growth rate to foreign direct investment.

Pereira and Calegario in (2013) examined the effects of FDI inflows policies on Brazil's current account balance. Estimated result indicate that foreign direct investment stimulate, results proposed that FDI flows encourages exports to increase in edition lead

to increase imports, particularly for those corporations involved in market-seeking strategy. Furthermore Causality results suggested that FDI flows Granger cause exports in both short and long run while causing imports only in short term, meaning that attracting foreign capital strategies looks like automatically indicate to positive externalities on current account balance (Calegario, 2013).

(Olusanya, 2014), examined the effect of FDI inflow on growth rate for the period of (1970-2011) for the Nigerian economy in pre and post deregulated economy, applying Granger Causality test technique, the analysis categorized the economy into three periods, first form (1970) to (1986), second from (1986) to (2011) and third from (1970 – 2010) to test for the causation between FDI and growth. The study results shows that there is a causal linkage in the pre-deregulation period that is (1970-1986) which runs from economic growth to FDI, but for the post-deregulation period which is (1986-2010) found no Causality between FDI and economic growth, however, for the period of (1970 – 2010) two way Causality has been found between FDI and economic growth in Nigerian economy. Granger Causality test results suggest that economic growth is the cause of FDI in pre-deregulation period, which suggests that there is a causal relationship runs from growth to FDI. But in the post deregulation period they found no Causality between Growth and FDI. However, in the whole period (1970-2010) economic growth is the cause of FDI. Meaning that, there is a one-way Causality runs from growth rate to foreign direct investment**.**

2.3 Theoretical Framework

Studies have used Outward-Oriented growth hypothesis essentially to motivate an empirical exercise on the likely impact of FDI inflow on growth. The theoretical rationale for this hypothesis hinges on a number of arguments which include the following: first, that the foreign capital may generate positive externalities through more efficient management styles and improved production techniques and exports. Second foreign capital expansion will increase productivity by offering potential for scale economies. Third, foreign capital is likely to alleviate foreign exchange constraints

and can thereby provide greater access to international markets (Esfahani, 1991). These arguments have recently been extended by the literature on (endogenous) growth theory which emphasizes the role of foreign capital on long-run growth via a higher rate of technological innovation and dynamic learning from abroad (Lucas, 1990).

From an aggregate production function point of view, each of these essential effects may contribute to the transformation of a given amount of savings and investment inputs into a larger amount of output through both a capital accumulation channel and technological change channel (Solow, 1957).

For the sake of this study, we employ Solow neoclassical growth model as a basic framework for our analysis. The aggregate production function $\boldsymbol{Y = f(K, L)}$ is assumed characterized by constant return to scale which Solow presented in a special form of Cobb-Douglas production function as:

$$Y_{(t)} = K_{(t)}^{\alpha} A_{(t)} L_{(t)}^{1-\alpha} \quad \text{……..……..….2.1}$$

Where ***Y*** is gross domestic product, ***K*** is the stock of capital, ***L*** is labour and ***A*** represents the productivity of labour which grows overtime at an exogenous rate; and ***t*** represents time specification.

With constant return to scale, any change in ***K, L*** will imply the same rate of change in ***Y*** in equation (2.2).

$$\Delta Y = F(\Delta K, \Delta L) \quad \text{……...…….……..…… 2.2}$$

Solow's model emphasized that output per worker is a function that depends on the amount of capital per worker. The more capital with which each worker has to work, the more output can be produce. The labour force grows at rate ***n*** per year. The total capital stock grows when savings rate are greater than depreciation.

The Solow equation (2.3) gives the growth of the capital-labour ratio ***k*** (also known as capital deepening) and shows that the growth of ***k*** depends on *savings* ***sf(k)*** after making provision for depreciation, ***φk*** and capital widening ***nk***, that is:

$$\Delta k = sf(k) - (\varphi - n)k \quad \text{……...……...……..…… 2.3}$$

Since we assume that ***A*** is constant, there will be a state at which output and capital per worker are no longer changing known as the steady state. To find the steady state, set $\Delta \boldsymbol{k} = \boldsymbol{0}$, and we have;

$$sf(k^*) = (\varphi - n)k^* \quad \text{……..…….....2.4}$$

Equation (2.4) signifies equilibrium in a steady state economy where ***k**** is the level of capital per worker. It is instructive to note that output can increase as we increase ***k*** by raising the rate of savings ***s***.

CHAPTER THREE

GENERAL OVERVIEW ABOUT FOREIGN DIRECT INVESTMENT INFLOWS AND ECONOMIC GROWTH IN BRAZILL

3.1 Foreign Direct Investment Definition and Conceptual Issue

Todaro and Smith express that foreign direct investments are overseas out of Home Counties borders investments done by private Multinational Corporations (Todaro and Smith, 2003). This association ship that connects FDI and Multinational Corporations together is very essential to understand the concept of foreign direct investment the stated definition about FDI is quite acceptable in many academics and business agencies like Organization for Economic Co-operation and Development (OECD). The United Nations Centre for Transnational Corporations (UNCTC) and by many national governments (Otto, 2004).

FDI also defined by World Bank as well as process of investment in which long-term management interest is acquired within a firm in a different country in general is about (10% of voting stock) than that of the investor's countries, besides FDI considered as an international business activities opposite of foreign indirect investments since in the shape of indirect investment abroad shareholders are actually there in the host countries within their managerial staffs that engaged in direct activities in more than countries an addition to controlling on their resources of investment in the other hand FDI usually are multinational private enterprises. Nevertheless, (Falki, 2009), claims that FDI is believed to be an important factor enabling countries to growth in the developing countries as it has positive effects on economic growth through domestic investment motivated, capital formation increased and bringing technology transfer in the host countries.

Foreign direct investment could take several characters first, includes obtaining equity capital from mother companies as shares. Second foreign companies earning that directed to renew investing again in host countries that lead to increase in short term investment as share of RGDP that make gross domestic products to grow faster. Organization for Economic Co-operation and Development (OECD) depict foreign direct investment as resident entity invests in an enterprise of foreign countries in order to gain permanent benefits for long term gaining. Besides direct investors through this long or short period he control over his assets, stocks and managerial experiences that he have created during his investing abroad but that is not mean essentially total control rather they have such an effective vote in management decision making in enterprises which could simply participating or influence companies policies (Kumar, 2007).

According to European Union foreign direct investment yearbook (2008) foreign direct investment is the category of international investment in which an enterprise resident in one country (the direct investor) acquires an interest of at least (10 %) in an enterprise resident in another country (the direct investment enterprise). Subsequent transactions between affiliated enterprises are also direct investment transactions. Foreign direct investment could take the shape of imports of capital representing as a subsidiary from foreign firms, also it come in the shape of formation of foreign companies when they share holding equities and some fixes assets together (Obadan, 2004).

(Oyinlola, 1995), conceptualized FDI in larger framework to include external loans with foreign capital and exports earning through spillover effects of FDI on technologies, local firm productivity, also suggest that foreign direct investment can be seen as an engine that works economic growth well in the host country keeping it continued, increasing economy in order to produce goods and services which are necessary to improve the conditions in the country in a way that citizens have a better life. There are both direct and indirect benefits of foreign direct investment. Some of the positive effects can be described as: creating employment, increasing the rate of growth, increased amount of technology and FDI is a source of capital itself having access to

new technology resulting in knowledge of marketing networks. It is possible to identify the direct effects of foreign direct investment as they have remarkable and measurable effects. When all these considered it is seen that foreign direct investment has a huge effect on host country and success of FDI depends on the government's policies to control the appropriate amount of FDI by means of managerial, capital and technological resources carefully in the desired way to get positive outcome.

An investment that is financed with foreign money but operated by domestic residents is named foreign portfolio investment. Portfolio investments refer to the purchase by individuals or institutions of foreign paper assets, either equities or bonds. Portfolio investment does not imply taking managerial control over a foreign company, or control over its physical assets (Mankiw, 1992). In host country when company manufactures the similar products as in home country. It is called (horizontal FDI) which is predicted to use the similar activities in host country. The value and number of horizontal FDI increase because the investment through export costs higher as a reason of high transportation costs and barriers in the trade. (Vertical FDI) International companies fractionate the production series in different geographical regions by outsourcing the segments in foreign countries. The aim of the fragmentation of production is showing that the production segments with various inputs, and every input cost varies depending on the host country, the companies might profit to fragment the production chain.

Based on literature of FDI we can define foreign direct investment as consist of external resources which consist of in first place technology diffusion from developed countries to developing countries, new knowledge of management and marketing skills further more to consists of developing human resources through high level training and practices programs.

As we see these different definitions it is clear to understand, the definitions acquire a different character from the view of the person that handles the subject but this paper is not going to work about the variable definitions of FDI.

All above factors combined together to have ambiguous effect on local firms productivities that lead to increasing in competitiveness and competing that lead to spur economy. All these generate a considerable impact on host nation's productive capabilities. At the current level of gross domestic product, the success of government's policies of stimulating the productive base of the economy depends largely on her ability to control adequate amount of Foreign Direct Investments comprising of managerial, capital and technological resources to boost the existing production capabilities.

The role of Foreign Investment has been more fundamental over the last decades for the nation's global economy if we look at the increasing of investments and their statistics. According to an average human being in any country, FDI shows its influence with by decreasing pressure of trade barriers, which means that it becomes easier to deliver products and services from other countries compared to the past decades. Therefore the growth in foreign direct investments is a fundamental indicator of the globalization (Cartwright, 2004).

3.2 Theories of Foreign Direct Investment

There are lots of theories that explain the motive for Foreign Direct Investment across the globe. The early works on FDI theory can be traced to the work of (MacDougall, 1958) who established his model based on the assumptions of perfectly competitive market. By assuming a two-country model and prices of capital being equal to its marginal productivity, MacDougall stated that when there was free movement of capital from an investing country to a host country, the marginal productivity of capital tended to be equalized between the two countries. However, the world is characterized by imperfect competition as pointed out by (Hymer 1960), who developed FDI theory based on an imperfect market structure. Some of the Theories are discussed below.

3.2.1 Industrial Organization Theory

Hymer was one of the pioneers who established a systematic framework in the study of FDI. His was supported by Kindleberger, (1969), Knickerbocker (1973), (Caves, (1971), Dunning (1979) and Cohen, (1975) among others (Hymer, 1976). Hymer's theory posits that firms operating abroad have to compete with domestic firms that are in an advantageous position in terms of culture, language, legal system and consumer's preference. Furthermore, foreign firms are also exposed to foreign exchange risk. These disadvantages must be offset by some form of market power in order to make international investment profitable. The sources of market power – the firm-specific advantage in Hymer's terms or monopolistic advantage in Kindleberger's terms are in the form of patent-protected superior technology, brand names, marketing and management skills, economies of scale and cheaper sources of finance. According to Hymer, technological superiority is the most important advantage as it facilitates the introduction of new products with new features. Moreover the possession of knowledge helps in developing other skills such as marketing and improved production process. A significant feature of this theory is that it articulates the point that the advantages are transmitted effectively from one unit of a firm to another unit of that firm, irrespective of the fact that they are either located in one country or in more than one country (Caves, 1971).

The foregone description converts FDI theory from neoclassical trade theories into the industrial organization theory. Nonetheless, Hymer's proposition does not form a wide-ranging clarification for FDI because it fails to explicate where and when FDI takes place. This has been endeavoured by Internalization theory by Buckley and Casson (1976); and the Eclectic theory of Dunning (1979 and 1988) among others.

3.2.2 Internalization Theory

The Internalization theory was founded consepualized by Buckley and (Casson, 1976) which explains how multinational companies developed and became so strong and how they manage their goals in Foreign direct investment, this theory asserts that MNCs are

consolidating their interior accomplishments so as to develop specific advantages, which then to be exploited. (Casson, 1976), developed the theory by focusing on two kinds of integration which are vertical and horizontal integration. In this theory, multinational companies work globally having foreign operations and transactions with other firms located abroad by means of a governance structure with contracting.

It occurs in two different cases. First, when there isn't any market that can provide th basic products the multinational companies need and the second reason is that the external or foreign market which can supply such products isn't effective and fails to supply the goods needed by such multinational companies. Global competitive advantages can be developed by means of internalization by forming international economies of scale and scope. Resource flows are of great importance in obtaining advantages both in location- specific and global business and (Casson, 1976).

3.2.3 The Eclectic Theory

This theory explains foreign direct investment with three elements which are ownership-specific (O), location-specific (L), and internalization (I). This is called the framework of OLI and all these factors are vital for foreign direct investment as they show the extent and pattern of foreign direct investment. Tangible assets such as natural endowments, manpower, and capital and intangible assets as well, such as technology and information, managerial, marketing, entrepreneurial skills and organizational systems are included in ownership- specific variables that is labelled (O). Factor endowments market structure, government legislation and policies, legal, and cultural environments in which FDI occurs are included in the variables of location- specific (L). Apart from these, the last variable (I), which is Internalization shows flexibility level and capacity of the firm in producing and marketing its own subsidiaries (Dunning, 1979).

One of the features of the eclectic theory is that it makes it to clear the difference between structural and multinational market failure. The eclectic theory offers a better and clear understanding of foreign direct investment when it is compared to the other

theories as it defines all the three variables of (OLI) all togther creating an explanation from which everyone can easily understand how the variables work and form foreign direct investment.

As all other theories, the eclectic theory has several limitations too. First one is that, it does not show how the advantages to be used internationally. For instance, resources and capabilities. Second limitation is that aspects of FDI such as resource commitment, production scale, and investment approaches change often and in different ways so the theory fails to propose further views and suggestions for coming stages of foreign direct investment. In other words, it is a very popular theory explaining how foreign direct investment works but at the same time there are some handicaps such as being unable to suggest further views and there is lack of understanding in expressing elements of FDI which are in different shapes as they change so often (Dunning, 1988).

In summary we can say that it fails to designate the engagements of current (MNEs) with substantial FDI that may skip steps in the model or even reverse the process. Internalization theory states that one of the major reasons for (MNEs) to engage in FDI is to internalize most parts of the production process. This significantly reduces normal business risks and gives the (MNEs) economy-of-scale advantages. The eclectic paradigm restates this concept and integrates it with corporate monopolization and national comparative advantage.

3.3 Foreign Direct Investment Contribution to Economic Growth

The contribution of foreign direct investment to economic growth could take different types it may contribute positively or negatively or the contribution of foreign direct investment could be insignificant. because to large extent it depend on macro stability, political conditions and level of structural institutions of host countries, but in general way foreign direct investment contributes to economic growth in several ways which are:

3.3.1 Human Capital Improvement

The principal spillover special effect of foreign direct investment in host countries is human capital or human resources improvements and this augmentation apparently to give the impression indirectly through the exertions of (MNEs), to huge extend it is dependent on government strategies to fascinate foreign capital looking for growing of human capital. As soon as individuals are employed by (MNEs) Companies, country's human capital may well be improved further through physical and mental activity by progressive programs of training systems that lead to job learning thus increase in experiences. All of these factors and subsidiaries could influence human capital improvement in positive way in term of developing labour productivity. Such enhancement can have additional special effects as labour transfers to other companies and as some employees become entrepreneurs. Thus, the issue of human resources progress is intimately connected with other, wide-ranging development issues. Investment in general education and other common human capital is of the greatest importance in generating an empowering environment for foreign direct investment.

Realizing a certain minimum level of educational accomplishment is vital to a country's ability to attract foreign capital and to take full advantage of the human capital spillovers enhancements from foreign enterprise presence. The minimum level differs between industries and sectors according to other characteristics of the host country's enabling environment. However, where a significant knowledge gap is allowed to persist between foreign entry and the rest of the host economy, no significant spillovers are likely (Aktar & Ozturk, 2009).

3.3.2 Technology Transferences

Another important channel that FDI contributes to economic growth in the host countries is through technology transmissions, which foreign investment could generate and encouraging externalities in the host developing economy. Multinational Corporations considered one of the most and major sources that provide foreign capitals to developing countries in term of Research and Development activity that host

countries could benefit from it, furthermore these Multinational Corporations have a higher level of technology than is available in developing countries, thus they have the potential to generate significant technological spillovers that lead to enlargements of production capacity and capabilities via cumulative in competitiveness and productivity of local firms (Blomstrom, 1994).

Technology diffusion works by means of four structured channels: vertical associations with suppliers on the host countries; horizontal associations with competing or complementary companies in the same sector; movement of skilled labour; and the internationalization of research and development. The evidence of positive spillovers is strongest and most consistent in the case of vertical linkage. (MNEs) commonly are originated to provide technical support, training and other facts to increase the quality of the suppliers' products (Sjöhölm, 1999).

3.3.3 Term of Trade

Despite the fact that impact of FDI on foreign trade of the host country differs significantly between countries and sectors of the economy, agreements, however, nexus between trade-FDI should be considered in a broader context than the direct impact of investment on imports and exports. The fundamental trade advantages from FDI inflows locating on contributing to world integration with the global economies in the long run in term of higher volume of exports and imports with the rest countries (Alici, 2003).

According to (Ucal, 2003), in place of countries develop and approach industrialization position, inward foreign capital subsidizes to their further integration into the worldwide economy by stimulating and boosting foreign trade flows. Apparently, more than a few factors are at play. They consist of the expansion and strengthening of international networks of related enterprises and an increasing importance of foreign subsidiaries in (MNEs) strategies for distribution, sales and marketing. In both cases, this leads to an important policy conclusion, namely that a developing country's ability to attract FDI is influenced significantly by the entrant's subsequent access to engage in importing and

exporting activities. This, in turn, implies that expectantly host countries should consider a policy of openness to international trade as central in their strategies to benefit from FDI, and that, by restricting imports from developing countries, home countries effectively curtail these countries' ability to attract foreign direct investment.

3.3.4 Competition

Foreign direct investment and the existence of multinational enterprises possibly will utilize a substantial encouragement on competition in host-country markets. However, from the time when there is no frequently established way of determining the degree of competition in a specific market, a small number of firms' assumptions might be drawn from empirical confirmation. The presence of overseas enterprises may perhaps significantly support economic growth by prompting domestic competition and thus leading sooner or later to higher productivity, lower prices and more efficient resource allocation. Contrariwise, the entrance of Multinational Corporations also ensures a tendency to increase the levels of concentration in host-country markets, which can affect competition in negative way. This risk is exacerbated by any of several factors: if the host country establishes a separate geographic market, the barriers to entry are high, the host country is small, the entrant has an important international market position, or the host-country competition law framework is weak or weakly enforced (De Gregorio, 2003).

3.4 Factors Influencing Foreign Direct Investment Inflows

Based on ongoing theoretical and empirical debate on exploring the role of foreign direct investment on economic growth, confidences of investors in term of domestic or foreign investment are very sensitive to the fluctuations that happen in host countries economy. Here we characterize specific factors that can reflect impact of FDI on economic growth in positive or negative way, these factors are:

3.4.1 Stability of Macroeconomics

The first consideration that foreign investment takes is political and economic macro stability in host countries, because this conditions make investment much easier and more profitable for foreign companies compare to other countries characterized by unstable macro conditions. For instance foreign investors take into account the expected level of inflation rate in the future in host countries to anticipate their cost and returns where as inflation is out of control thus foreign investors will hold their investment or will not invest at all in such counties with unstable macroeconomics conditions (Kiat, 2008).

3.4.2 Corporate Taxes by Government

Foreign companies or investors main objective is profits in first place and offering services to community come in second place from this point of view the confidences of foreign investors is very sensitive to high government corporate taxes in term of reducing profits. Thus foreign companies will not invest because a large proportion of their profits will be seized by the government; corporate taxes are a cost so they will pass it on to consumers through higher prices which lead to a general rise in price levels so lower corporate taxes will make a country more attractive for investment (Wint & Williams, 2002).

3.4.3 Degree of Openness and Trade Regimes

According to (Crespo & Fontoura, 2007), free trade allows firms foreign companies to transfer capital to all over the place without restrictions and export their products to wherever they want and also import whatever they want. For the sake of this topic, free trade allows firms to freely trade with no restrictions. For example: Imagine a firm in a protectionist country; they can't trade freely due to tariffs, quotas and embargoes. This affect their costs when trying to trade and in some cases, not being able to trade with the world markets means they will have a substantially smaller market to sell their products

which minimizes their profit levels and they won't be abler to achieve economies of scale.

3.4.4 National Debt

If a country has high levels of national debt, this means that the real interest rates are high and if the government doesn't deal with its debts, the investor confidence will fall. Also high levels of taxation will soon follow because the debts will have to be paid of eventually. Now as I mentioned earlier, high taxes are a disincentive to investment and high interest rates will mean lower borrowing which again puts investment off because it costs a lot to borrow so firms will not invest (Fontoura, 2007).

So these Factors issues are at the heart of decision making for Foreign Direct Investment. FDI brings jobs, technology, skills, and improved supply side for the economy at the receiving end. FDI is particularly helpful for developing countries.

3.4.5 Growth Rate of Return on Investment

According to (Sahoo, 2006), investment profitability and expected growth rates are the most essential constraints in the procedure of decision making about investment, usually this decision influenced strongly by the return rate on foreign direct investment in host countries. The rate on investment seemingly to higher in those countries which have certain level stocks of capital in term of accumulation of physical capital. Sahoo postulate that if GDP per capita in specific country is low then the return on investment will be high, from this point of view he conclude that there is negative relationship between GDP per capita and investment return ratios.

3.4.6 Business Environment

Rusike in (2007), declared that the attitude of host countries about well coming foreign investors plays significant role in attracting more foreign capital for growth, in another hand this attitude is also valuable for foreign investors to be welcomed in the foreign countries there. These positive ways of behaving lowers the costs of business,

juristically barriers and moderate the general economic relations in the host country (Rusike, 2007).

3.4.6 Skilled Labour and Lower Labour Costs

Low-costs of labor and obtainability of skilled labor are essential factors of foreign direct investment inflow in host countries. Productions with higher payments of labor interest the Efficiency-Seeking FDI to produce efficiently not only for the host countries productivity but also for export. The low-cost of labor possibly will reduce the production costs. But in this point of view skilled labor obtainability problem follows for the reason that if the firm only requirement to reduce the labor expenses it would affect the production efficiency. In the host country, skilled labor can be more expensive than the average; therefore the solution is what kind of an aim the firm in host country has (Sahoo, 2006)

3.4.7 Infrastructure Facilities

Infrastructure facilities in term of availability and the quality considered to be fundamental factors affecting capital inflows in host countries, such as (telecommunications, airports, seaports, transportation, electricity and roads). Countries which have these facilities can interest the FDI flows easily regards with other major determining factor. As a result of this, a positive relation is expected with FDI inflows into the host country (Rusike, 2007).

3.4.8 Government Budget Issues

It is a significant feature which impacts the capital flow. If government of host coutries experiences big deficit, the government possibly raise the taxes that could affect the foreign direct investments inflow in the country in term of increasing cost. If a country wants to attract the foreign investors, government budget conditions and stability has to be granted to a certain level (Sahoo, 2006).

3.4.9 Agglomeration Properties

If the host country has a large FDI stock volume, it would be another reason to make increasing the prospective FDI. Hence the FDI stock size of foreign country is considered by investment decisions phase (Rusike, 2007).

3.4.10 Natural resource Availability

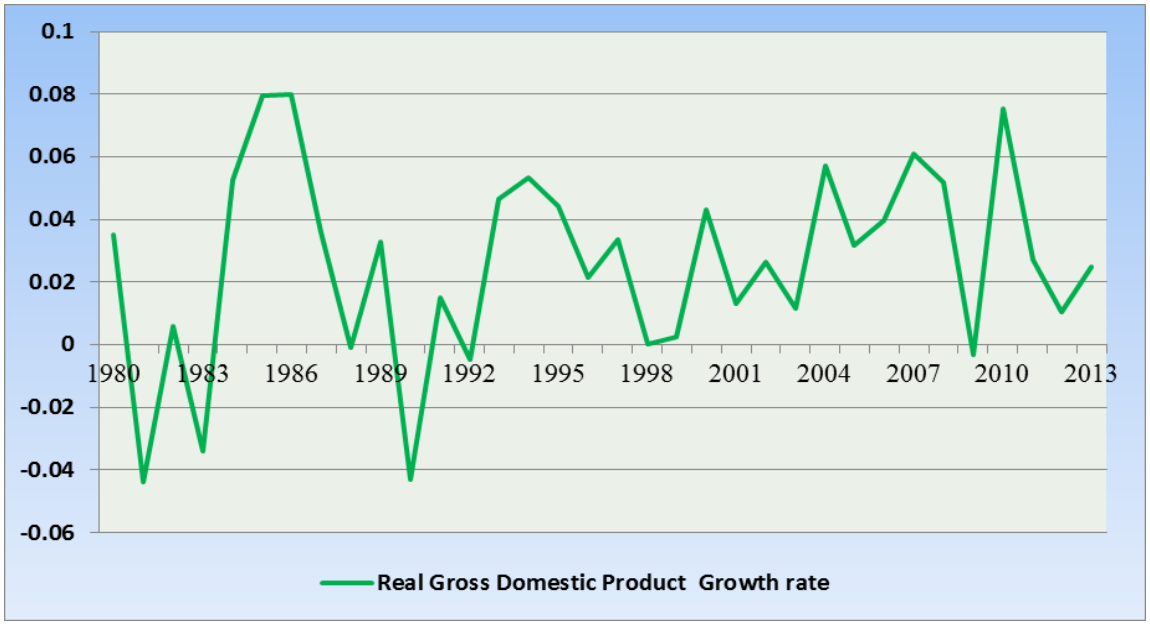
In recent years its observable that many host countries that received large amount of foreign investment and capital inflows by means of the availability of natural resources, if the mandatory of natural resources are not available in the host country, it will reduce the share of foreign capital due to the lack of natural resources (welth). Accordingly if the host country has abundant natural resources, it would attract more foreign investors (Rusike, 2007). A good example is Saudi Arabia which always receives new overseas FDI as a result of its wealthy oil resources.

3.5 Foreign Direct Investment Inflow and Economic Growth Outlook in Brazil

3.5.1 Market Size and Growth Rate

Brazil considered one of the largest countries in Latin America continent regard with the economic performance, size and population. The population in Brazil (170) million people according to the Preliminary data in (2001) which obtained from the Geography and Statistics Institute of Brazilian, the share of the people whose living in urban reached (0.81%) about (130) million citizens. In term of local market Brazil has large scale growth potential but suffering from the unequal distribution of the income among regions. A significant fall in the late of (1988) till the beginning (1990s) the market growth in Brazil was restricted until passing two years of implementation of the Real Plan then a significant rising was observed in the purchasing power of population as a consequence of monetarist stabilization. Economic growth in Brazil was negative in (1988, 1990) and (2009) with the rates at (-4.3% and 0.47%) respectively then it peaked up in (1994). The prospective of the Brazilian economy is expanded through integration of the local marketplace.

Graph 3.1: Real GDP growth rate annual (US $B)



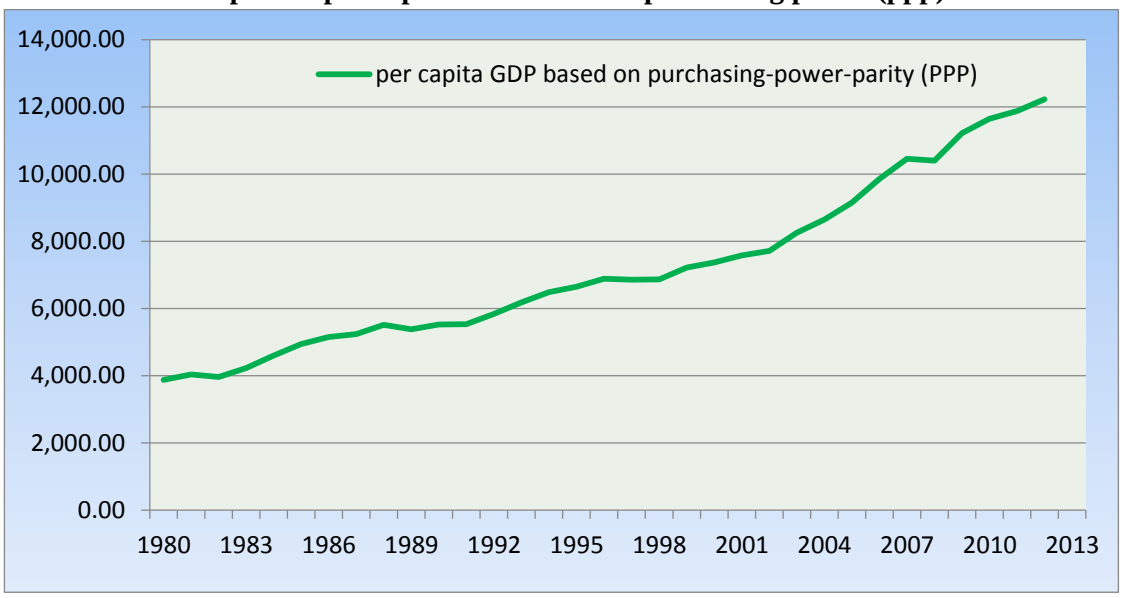
SOURCE: World Bank Data, World Development Indicators, 2013

In (1991) a customs union created as a Mutual Marketplace called (MERCOSUR) region include Argentina, Brazil, Paraguay, and Uruguay. As sequences of this particular mutual market union a significant improvement was expected afterward the depreciation of the Argentinean currency and the restitution of economic growth of Brazil as greatest commercial partner in the continent.

($2.024) trillion was Brazilian gross domestic product in (2009) which make Brazil one of (10) countries concerning with high volume of GDP. At period of one year as overall goods and services in the economy made and valued by markets called (GDP) gross domestic products as shown in (Graph 3.1).

The gross domestic product per capita on Purchasing power parity was increasing significantly at the beginning of (1980s) the per capita GDP was around a little over (4000$) then in (2009) started to increase till it reached (10200$) meaning that gross domestic product divided by the overall count of populations of Brazil (Sarti and Laplane, 2003) as shown in (Graph3.2).

Graph 3.2: per capita GDP based on purchasing power (ppp)

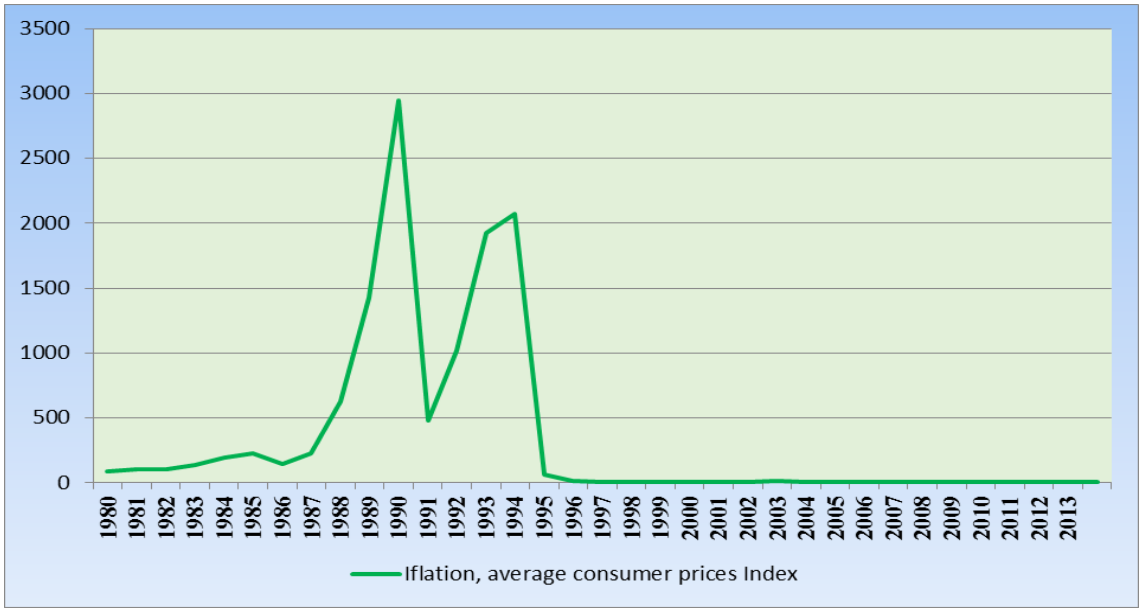


SOURCE: World Bank Data, World Development Indicators, 2013

3.5.2 Macro Stability

Brazil experienced a very high level of inflation rate a Hyperinflation in the beginning of (1990) till (1993) this dramatic level of Hyperinflation was got to an end in (1994) due to application of the Real Plan characterized by wide-ranging on fiscal and monetary improvement including financial liberalization and on-going trade which made the currency of brazil more valuable as soon as the inflation rate (consumer price index) responded which decreased from (2,800) percentage per annum in (1993) it reduced to (15) percentage in (1995) See Graph (3.3). This reforms was followed by consumption booms that helped the sector of industry to grew up, the reversal of the trade surpluses was extra consequence of the restructuring procedure for the first time since the beginning of the (1980s) mainly because of more rapidly growth of exports also this kept the interest rate in stable rate with regard of local exchange valuable led to a fast growth rate of the Brazilian foreign accounts and balance of payments.

Graph 3.3: Inflation Consumer Price Index (CPI)



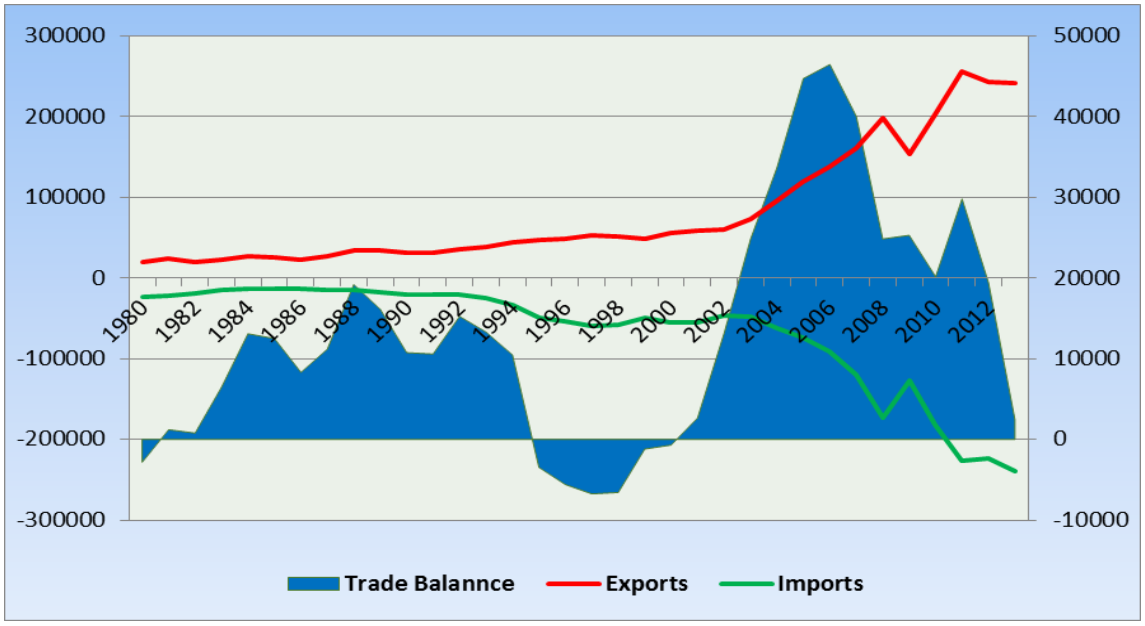
SOURCE: Brazil Central Bank

After this high level of economic recovery a significant growth on import observed because of maintaining in high interest rate over values of local currency in other words

the preserve of high interest rates and currency appreciation led to a fast deterioration of the Brazilian external accounts. The weakness of economy became obvious especially afterward the Mexican crisis, in (1995), and the currency devaluation in (1999).

Foreign trade of Brazilian economy had entirely reformed after period of consolidating an open regime under WTO obligations. Breaking barriers of trade and enhancing foreign sector to be liberal in the late (1980s) considering tariff harmonization with small average level of protection. This policy has turn out to be unambiguous in the Brazilian Manufacturing and External Trade Policy In (1990) which established or programs in order to reduce tariff and non-tariff measures of trade to be followed until (1994). The important objectives of this policy were to remove gradually the substantial protection apparatus inherited from the import substitution regime see (Graph 3.4).

Graph 3.4: External Sector Exports, Imports and Trade Balance (US $B)



SOURCE: Brazil Central Bank

There are total (179) countries listed on the economic index of freedom and Brazil takes the (113_{th}) place. The economic freedom score is (55.6) out of (100). This means that Brazil is mostly not free in economic freedom. Brazil's overall score is below the regional and world average. The state presence in many areas of the economy is heavy,

and the efficiency and overall quality of government services remain poor despite high government spending as a percentage of GDP (WDI, 2013).

3.5.3 Foreign Direct Investment Trends in Brazil

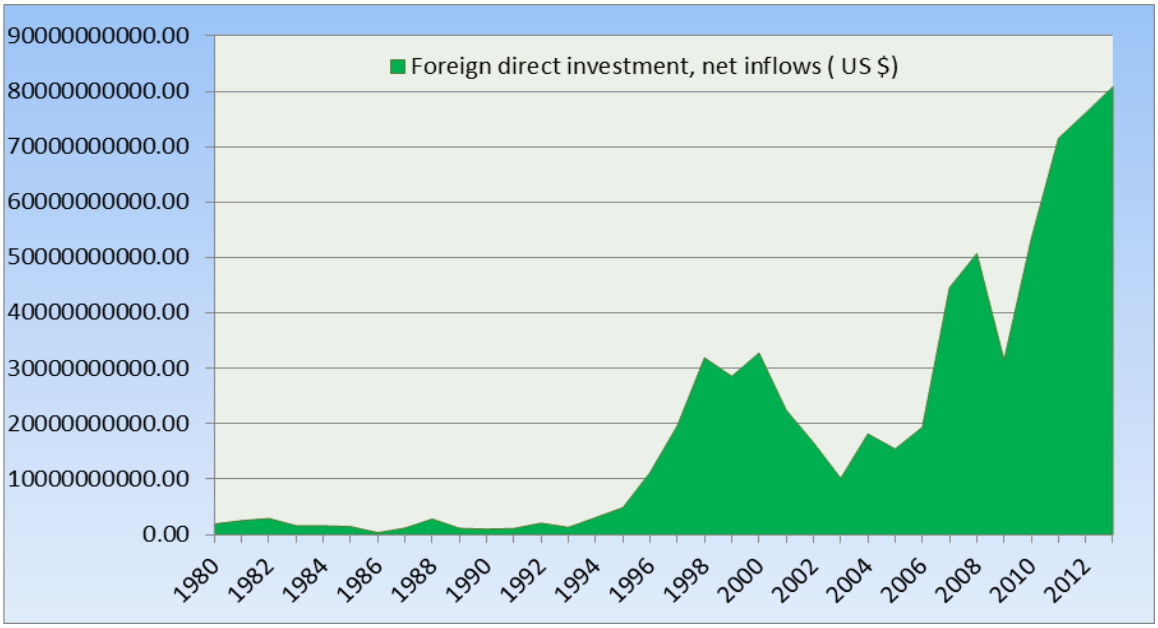
FDI inflows to the Brazilian economy started during the period of (1955 – 1960), when specific governmental programs were created to attracted foreign capital as strategy to industrial development through import-substitution industrialization. The (1970s) were marked by excessive optimism and high rates of economic growth financed by foreign capital, mainly associated with the consolidation of a political regime supporter of foreign capital. Until the (1980s) there were mechanisms that stimulated reinvestment and discouraged the exit of foreign capital already invested in the country (Pereira and Calegario, 2013).

The (1970s) was characterized by a large FDI inflow in the Brazilian economy. The main determinants on the abundance on FDI supply were related to economic growth orientation and a non-discriminatory foreign capital consolidation. During the (1980s), there was a reversal on capital flows, given, mainly, to the lack of credibility due to the non-accomplishment of external obligations, economic instability and the increased uncertainty associated with anti-inflationary plans. From the (1990s) there was an extraordinary recovery of FDI growth, reflecting the financial globalization effects, the mergers and acquisitions possibilities due to the Brazilian economy opening and privatization (Calegario, 2013). The intensive growth of FDI in the (1990s) yielded, on the one hand, optimistic expectations that FDI could act as an engine of the new growth stage and as a Brazilian business structure modernizer. On the other hand, FDI limited endogenously growth feeding capacity raised doubts regarding the feasibility of attracting increasingly amounts of FDI to finance the current account deficits (Sarti and Laplane, 2003).

Thus, the foreign participation increasing in the economy also increased the concern about the received investment quality. Specifically in Brazil, the questions are related, in

most of the cases, due to the globalization impacts on the Brazilian economy, mainly those concerning the denationalization acceleration and the current transactions balance fragility (Calegario, 2013).

Graph 3.5: FDI Inflows to Brazilian Economy (US$'B)



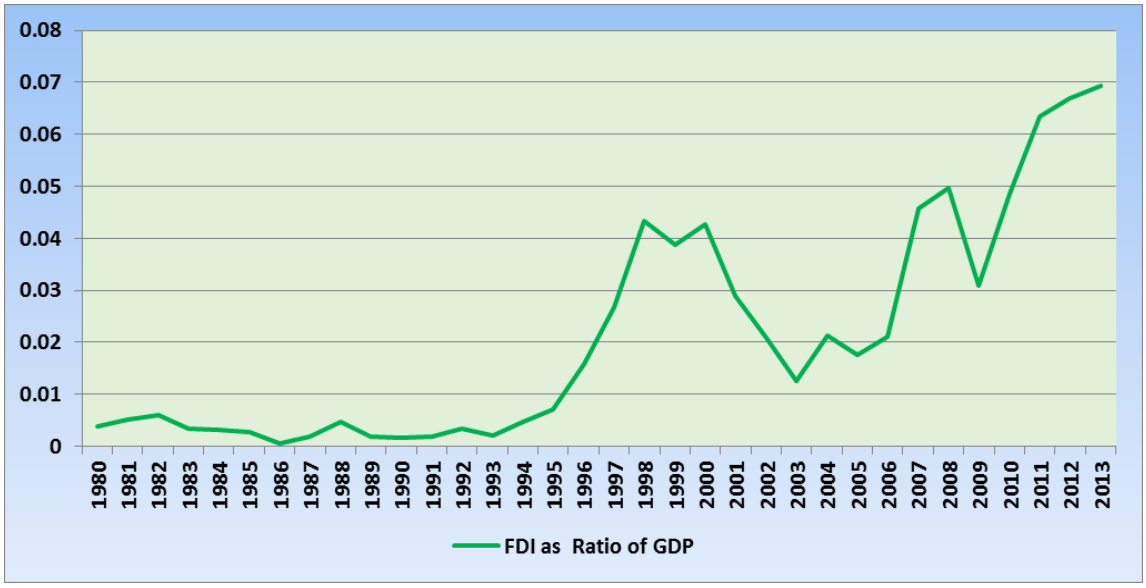
SOURCE: World Bank Data, World Development Indicators, 2013

However, there was a reversal of this flow starting in the (1980s) due to the downturn in economic activity, lack of credibility, excessive instability and uncertainty due to the successive anti-inflationary plans. During the (1980) crisis that lasted until the early (1990s), the degree of uncertainty in the economy meant that the level of foreign and domestic investment was greatly reduced. In (1988), with the new Constitution, the state was given the power to regulate the entry of foreign capital. Until the (1990s), the setting of Brazilian industry was marked by strong tariff protection to the domestic industry, severe financial crises and a significant delay compared to developed countries. The decline of FDI until the (1980's) was interrupted in the middle of (1990s) in (1994 and 1995) and a sharp spurt in (1999 – 2000). In half of the decade (1994 and 1995), started in Brazil a broad process of economic liberalization, marked by the adoption of liberal trade policies and reduced regulation of IDE (WDI, 2013). In that first period, Brazil

was the main pole of attraction of FDI in Latin America, surpassing the leaders of the first half of the decade, Mexico and Argentina. The industrial sector was the major recipient of investment during this period, being replaced by the service sector in (1996) due to government privatization programs.

FDI record to the Brazilian economy was in (2000) and, after this period, FDI to the Brazilian economy decreased, following the world's FDI behaviour, but also reflecting the inexpressive Brazilian economy growth and the end of privatizations phase. In (2004), there was a reaction on FDI inflows and, according to the United Nations Agency for Trade and Development (UNCTAD, 2007), FDI to the) Brazilian economy had the highest increase rate in the world in (2007) from (U.S. $ 18.8 billion in (2006) to ($ 37.4 billion), representing an increase of (99.3%).

Graph 3.6: FDI Inflows to Brazilian Economy as Ratio of GDP



SOURCE: World Bank Data, WDI, 2013

The new record surpassed (2000), when FDI inflows reached (U.S. $ 32.8 billion), and (22%) of the total amount of FDI inflows was related to the privatization operations. The new record occurred even without the occurrence privatization operations, reinforcing the significance of the record reached in (2010) see (Graph 3.5). The upward movement

of FDI in the Brazilian economy in the recent years and Real appreciation occurred simultaneously. What is observed is that the Real appreciation didn't affect FDI inflows as one might imagine. In fact, Real appreciation on recent years is not result from passing situational factors, but the sustained improvement the Brazilian fundamentals that fosters predictability in the longer-term horizon (Pereira and Calegario, 2013).

Brazil is characterized by large and well-developed agricultural, mining, manufacturing, and service sector; its economy outweighs that of all other South American countries and is expanding its presence in world markets. Since (2003), Brazil has steadily improved macroeconomic stability, building up foreign reserves, reducing its debt profile by shifting its debt burden toward Real denominated and domestically held instruments, adhering to an inflation target, and committing to fiscal responsibility. Brazil recovered from a crisis following the turbulence in international market in (1998) and Brazil faced new market pressures in (2002).

3.6 Investment Regimes and Regulations of FDI in Brazil

The industrialization strategy adopted in Brazil like many of her contemporaries in (1960s) and (1970s) was import substitution imports subsidiaries. The implemented common tariff and non-tariff constraints on imports, and investments administration presented some form of horizontal reservations for all the sectors and conventional Sectorial restrictions (Pereira and Colegario, 2013). The regulatory framework was highly functional from development point of view with large and dynamic internal market protected by all sorts of trade obstructions constituted the main factors that attracted the flows of FDI to Brazil (Laplane and Sarti, 1999). Foreign investment in Brazil was initially regulated by market-seeking whereby the success of the investment was assured by the protectionist trade policy.

The Brazilian investment regime was fairly liberal for the period of imports subsidiaries policy application and carried stability in the system. This was also maintained by constitutional rules and basic Law from the early (1960s). The period between

(1960s-1980s) characterized by political modifications in addition to the liberal nature of the legislature was well-maintained. The regulatory instruments established down as counted in exchange controls, tax regime, and so on with a view to discourage the outflow of the foreign capital already invested in the country and motivate re-investment. The regulatory restriction was reinforced by law in the (1988) in the Constitution of Brazil. Constitution introduced the legal dissimilarity between Brazilian corporation of domestic capital and Brazilian corporation of overseas capital, which created the legal base for discriminating between the two forms of corporation in expressions of regulation and policy.

During the (1990s), significant changes took place in the regulation of the accomplishments of overseas capital for investment and the Transnational Corporations. Particular tax encouragements for (MNCs) were not created, though these the main beneficiaries of some of the incentives conceded in the federal. Specific investment regimes, Policies and regulations to attract foreign capital for investment in Brazil are:

3.6.1 Manaus Free Zone (ZFM)

In the late of (1950s) especially in (1957) the ZFM generated in order to increased export of domestic products, to obtain the targeted plan the government established commercial centres directed to manufacture of products for exporting in the future.*as* it is very clear that foreign investors seek for enlarge their market shares in the global economy in line with domestic companies trying to be more productive to seek their share of market in global world economy that help countries in term of current account balance regard with valuation of local currency then reducing the rate in term of inflation rates (UNCTAD, 2007)

3.6.2 Trade Policy

The trade policy in Brazilian was reformed in the (1990s) by amalgamating an open regime under World Trade Organization obligations. Trade improvements observed in late of (1980s) with tariff harmonisation. The policy became recognizable in the

Brazilian manufacturing and external trade strategy, wherever tariff discount was tracked until (1994). The policy was planned to remove, gradually, the substantial fortification tackle congenital from the import substitution regime (UNCTAD, 2007).

3.6.3 The Sectorial Investment Regimes for Infrastructure Services

In 1980s Brazil economy experienced some dramatic difficulties due to the failure of government policies that led to significant reduction in infrastructure investments until (1990s). In an effort to overcome this, the policy was revised in (1990s). In mid (1990s), government started implementing privatization program on infrastructure. In addition, the institutional arrangement for regulating the provision of public utilities witnessed some changes (Bacha and Bonelli,).

3.6.4 Privatisation Policy

The privatization programme came into force in Brazil in (1990s) which greatly influenced foreign capital inflow. One in every five dollars invested by foreigners in Brazil was engrossed by privatisation in (1998). The FDI flows to privatisation were a significant portion of the FDI flows to mergers and acquisitions (M&A) in Brazil (Veiga, 2004).

3.6.5 Automotive Regime

The automotive industry throughout the (1990s), benefited from various incentive policies with transnational car assembly firms as the main beneficiaries. As earlier of (1990s) decade especially in first three years this policy and regime planned to motivate local market to be more activated than before, in order to achieve that the taxes on car assembly reduced regard with specific agreements with car manufacturers and the workers were negotiated (Veiga, 2004).

Nevertheless, more lately in (2011) Brazil proclaimed a new industrial policy, Plano Brasil Maior (the Bigger Brazil plan), in order to supports local producers besides encouraging for more investment and motivate for innovation. This new plan spanned

from (2011-2013) sets objectives for investment spending by (2014) it extent (22.4) percent as share of GDP compare to (18.4) percent in (2010) as based year. Brazilian bigger plan targets also cover private investment in research and development to jump from (0.59) percent to (0.90) percent, besides targeting the energy-efficiency of economy by reducing the amount of petroleum used per unit of GDP by (9) percent and in the same time increasing broadband (Internet) telecommunication diffusion from (13.8) million households in (2010) to (40) million households in (2014) (Pereira and Colegario, 2013).

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Specification of Empirical Model

Many studies in the economics literature have attempted to examine the linkage between FDI and economic growth for countries. Some focused on times series evidence while some other focused on panel or cross-section evidence. In this study, it is proposed that foreign direct investment influences economic growth in Brazil. The functional association ship between foreign direct investment and growth in this study based on an aggregate production function theme of assessment, jointly these macro variables may subsidise to the alteration of a particular amount of savings and investment inputs into which could increase the capacity production of host countries then lead to economic growth through either a capital accumulation channel or a technological change channel (Solow, 1957).

For the sake of this study, we employ Solow neoclassical growth model as a basic framework for our analysis. The aggregate production function ***Y = f(K , L)*** is presumed or considered by constant return to scale which Solow presented in a special form of Cobb-Douglas production function as below:

$$Y_{(t)} = K_{(t)}^{\alpha} A_{(t)} L_{(t)}^{1-\alpha} \quad \text{.....} \quad 4.1$$

Where ***Y*** represent real national income; ***K*** is the stock of capital; ***L*** is labour; and ***A*** represents the productivity of labour which grows overtime at an exogenous rate; and ***t*** represents time specification, with constant return to scale, any change in ***K, L*** will imply the same rate of change in ***Y*** in equation (4.2).

$\Delta Y = f(\Delta K, \Delta L)$ …….....…….……4.2

For the purpose of this specific study we extend variable of stocks of capital ***K*** to be included into two parts which are (Foreign Direct Investment and Domestic Investment) the functional relationship between Foreign Direct Investment and growth is emphasizing as follow:

$Y = f(FD, DI)$ ……...……. 4.3

Where ***Y*** represent real income considered as a function of development, essentially our model for estimation can be extend to include some other explanatory variables such as term of trade which express of the from:

$RGDP_t = f(FDI/GDP, DI/GDP, TOM/GDP)$…… 4.4

Where ***t*** represents the time period, ***RGDP*** is real growth rate of gross domestic product as a proxy of real income; ***FDI/GDP*** is foreign direct investment as ratio of ***GDP*** used as a proxy of foreign capital inflows; **GFCF/GDP** is gross fixed formation of capital as ratio of **GDP** as a proxy of domestic Investment; while ***EXPT/GDP*** is exports of goods and services as ratio of ***GDP*** defines as a proxy of external trade.

Equation (4.4) can further be prolonged in a logarithmic form to include the coefficient and the error disturbance term $\boldsymbol{\mu}$ as follows:

$\ln RGDP_t = \beta_0 + \beta_1 \ln FDI/GDP + \beta_2 \ln GFCF/GDP + \beta_3 \ln EXPT/GDP + \mu_t$ ……....4.5

The a priori expectation is such that all the variables are expected to be positive that is, $\boldsymbol{\beta_1}$, $\boldsymbol{\beta_2}$, and $\boldsymbol{\beta_3 > 0}$. The specified model in equation (4.5) can be stated in Error Correction form where ***RGDP*** may not directly regulate to their long run equilibrium levels in which the speed of adjustment between the short run and long run levels can be captured $\boldsymbol{EC_{t-1}}$ in the Error Correction equation in (4.6), where Δ indicates change in RGDP, economic development and trade proxies, the probable sign of ***ECT*** is negative.

The empirical model to be estimated using Vector Error Correction Model approach is equation (4.6) covering the period (1980–2013).

$$\Delta \ln RGDP_t = \beta 0 + \sum_{i=1}^{P} \beta_1 \Delta \ln RGDP_{t-1} + \sum_{i=0}^{P} \beta_2 \Delta \ln DFDI/GDP_{t-1} + \sum_{i=0}^{P} \beta_3 \Delta \ln DGFCF/GDP_{t-1}$$

$$+ \sum_{i=0}^{P} \beta_4 \Delta \ln EXPT/GDP_{t-1} \sum_{i=0}^{P} + \beta_5 EC_{t-1} + \mu t \quad \text{……...…….……4.6}$$

4.2 Definition and Analysis of Variables

In this part we discuss the justification of the variables is estimating the influence of foreign direct investment on economic growth, the purpose of this part is to use proxy those have been used in most FDI literatures.

Foreign direct investment FDI involves a foreign investors ownership as partly or all of investment in a particular project in particular foreign country, as well as his participation in the management of the project in case of joint investment or full management control in case of indirect investments. FDI is an extent of foreign ownership of productive assets, such as factories, mines and land. Foreign investment considered as an economic index increasing economic globalization and integration or global economic integration.so from that point of view the foreign direct investment total net inflows will be used in this study as a proxy of foreign capitals

According to World Bank foreign direct investments in these last decades become one of the most important instrument that enhancing economies to build up the physical capital through accumulation of capital that could spur economic growth in many aspects such us creating employment opportunities reducing unemployment rate, increasing productivity of local via labour skills and new management knowledge. Declare that economic development and foreign capitals are positively correlated to each other.

Gross Domestic Product GDP means the total monetary value of the goods and services that have been manufactured or provided to society during a particular time period usually a year, and is intended to commodities is the ultimate form it. The gross domestic product is calculated value of goods and services produced from existing of domestic resources. GDP is counted value of goods and services produced from existing resources domestically gross domestic product GDP is the most comprehensive economic activity GDP indicators and covers all sectors of the economy. It represents the total value of production of the country during a period of time and includes local purchases of goods and services produced from individuals, corporations, and foreign, and government institutions. In addition to now real gross domestic product considered as essential indicator the reflects the development in country world bank (WDI, 2010), because it represent performance in main sectors in economy like private sector with government sector plus external sector which is term of trade. Thus as a proxy of national output or level of national income the gross domestic products in real term will be used to represent national income.

Gross fixed capital formation in general term represent domestic investment which consists of land enhancements, expenditure on the acquisition of new capital goods, acquisitions of machinery, tools plus additions and renovations and improvements to the Capital goods list, in addition to the value of construction work under construction.

The importance of domestic investment in that it leads to an increase in aggregate demand directly, as it considered one of the most important components of aggregate demand. It is also the most volatile element, so the local income fluctuates as a result of the volatility of the investment. Besides it contributes to increase the production capacity of venture community through capital formation.so to measure the impacts of domestic investment this study conduct gross fixed capital formation as a proxy of domestic investment and the expected relation between these two variables expected to be positive.

Gross fixed capital estimations considered as an important statistical indicators of national economy according to the System of National Accounts (1993), that could offer a historical overview of the investment plan for the country and show the validity and correctness and accuracy of the economic plan path toward the target assigned to it, so the availability of such statistics is a need to develop an integrated plan to economic objective because they reflect the size and structure production capacities.

Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. They exclude compensation of employees and investment income (formerly called factor services) and transfer payments. Exports are seems to be positively related to GDP growth as they improve the competitiveness of the exporting and of the whole economy. In addition a large amount of exports improves the country's trade balance with the rest of the world according to theory and experience Data are in constant (2005 U.S) Dollar sourced from World Bank Development Indicators. Thus, all the three variables are expected to spur gross domestic product as proxy for economic growth (IMF, 2002).

Table 4.1: Variables Description and Expected Signs

Variable	Description of Variable	Expected Sign
Ln RGDP	Log of real GDP	+ (positive)
Ln FDI	Log of FDI	+ (positive)
Ln DI	Log of Domestic Investment	+ (positive)
Ln EXP	Log of exports	+ (positive)

SOURCE: Author's table: adapted from empirical literature

The selecting variables in (table 4.1) in this study could have various expected relationship with real GDP. This association could be negative or positive in term of FDI; however it is largely dependent on the macro stability and structure of economic in the host country. For example in the analysis of this study all the explanatory variables (FDI, GFCF and EXPT) have positive relationship with real GDP.

4.3 Estimation Techniques

The model to be estimated in the study is the (VECM) in equation (4.6) as a function of three tests. First, unit root test of Stationarity using Augmented Dickey Fuller (ADF) and Phillip-Perron (PP) test approach. Second, Johansen Co integration test (Trace Statistics and Max-Eigen Statistics) to explore the casual relation between FDI and economic developments. Third, Granger Causality test use to define the direction of Causality (transmission mechanism) between variables.

4.3.1 Unit Root Test of Stationarity

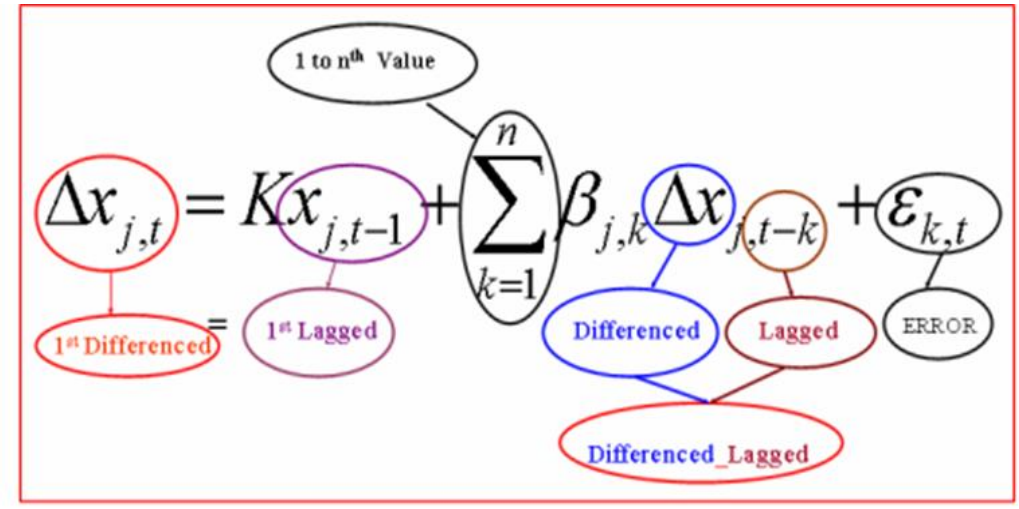
Both PP and ADF tests of unit rout were conducted in this empirical study in order to investigate whether unit rout (non-Stationarity) exist or not for each variables which take in consider of natural log in both at levels and first differences. Adapting time series analysis is very sensitive to Stationarity property of the data because ordinary least squares estimators of results might provide a spurious regression like very high level of (R^2) coefficient of determination also high level of significance (T and F) test meaning that the variance and covariance of estimated coefficients are biased not constant through time. Unit root test was modified and applied by (Dickey and Fuller, 1981) in order to investigate the null hypothesis of Stationarity of the data. To make the result more accurate, this study will employ Augmented Dickey Fuller (ADF) and Philips Perron (PP) test. In unit root test, the stationary model required differencing to get Stationarity and the processes are also known as integration of order 1, I(1).

In (ADF) test, optimum lag length, is determine using Schwarz information criterion (SIC). When any variable has a unit root means that the variable is not stationary, that

will make the responsiveness of all variables in model to become non-stationary perhaps will lead to spurious regression results (Granger, 1988). In order to satisfy the property of Stationarity of the data all variables that included in this model tested at levels and tested in first difference in case unit root exist by using the Augmented Dicky-Fuller (ADF) tests which include constant with trend. Similarly, Philip-Perron (PP) test is also employed. Comparing between these two methodologies to testify for Stationarity of data (PP) test is more distinguished or special compare to (ADF) test because PP test can detect and remediate for auto correlation using covariance matrix.

Furthermore when running (PP) test for unit rout it does not take to the consideration or to specify the lag length opposite (ADF) test that seems to be very sensitive for lag length structure.

Graph 4.1: Illustration of Auto-Regression Model for Stationarity



Source: conducted by Dickey and Fuller (1981)

Assume ***X*** can be any variable and the augmented Dickey-Fuller (ADF) model could be expressed as below:

$$\Delta X_t = \beta_1 + \beta_2 + \delta X_{t-1} + \sum \alpha_i \Delta X_{t-i} + \varepsilon_t \quad \text{.....4.7}$$

Where:

ε_t represents a pure white noise error term, $\Delta X_{t-1} = (X_{t-1} - X_{t-2})$, $\Delta X_{t-2} = (X_{t-2} - X_{t-3})$, $\Delta X_{t-i} = (X_{t-i} - X_{t-j})$, i represents the number of recent time and j is the number of previous times or years see (Graph 4.1).

The hypothesis of Augmented Dickey Fuller is $H_0: \delta = 0$. Xt is non-stationary there is unit root, the alternative hypothesis assumes that the null hypothesis is not true meaning that $H_0: \delta \neq 0$. Xt is stationary means that there is no unit root means that the data are stationary.

The variable's order of integration is dependent on the tests that weather the intercept and trend are included or not in equations of unit root test (Perron, 1991). He used the cummulative distribution of the (ADF) and PP test statistics. Using differenced data, the computed (ADF) and PP tests suggest that the null hypothesis is rejected for the individual series at conventional (1%, 5%) and (10 %)level of significance at which the variables will be said to be integrated of that order, that is I(d). And asserted that augmented Stationarity test of Dickey and Fuller are sensitive to lag length structures.

4.3.2 Johansen Cointegration Test

Cointegration test performed in order to investigate if there is a long run relationship among variables in other words detection long term associationship among variables (Gujarati, 2003). Johansen methodology gives room to capture all possible estimation of Cointegration vectors between set of variables (Johansen and Juselius, 1990). Therefore it is based on a Vector Autoregressive Model. A Conintegration test can be done for bivariate models by using (Engle and Granger, 1987) procedure, but this procedure cannot be used in multivariate models hence (VAR) model is used in the Cointegration test. Moreover the (Johansen and Juselius, 1990) test avoids bias which can be resulted from applying Engle and Granger separately on the selected variables. The procedure can be shown as in the following Vector Auto Regressive (VAR) model:

$$x_t = C + \Pi_k x_{t-1} + \cdots \Pi x_{t-k} + \varepsilon_t \quad \text{.....4.8}$$

Where:

$\boldsymbol{X_t}$ $\boldsymbol{X_{t-1}}$...$\boldsymbol{X_{t-K}}$ represent vectors of lagged and current values of ***n*** variables respectively which are ***I(1)*** in the model, $\boldsymbol{\Pi_1}$,….,$\boldsymbol{\Pi K}$ are known as matrices of coefficients with ***(n X n)*** dimensions, ***C*** is an intercept vector and $\boldsymbol{\varepsilon_t}$ is a vector of random errors (Katircioglu, 2007). The number of lag selection is found in such a way that residual is not auto correlated. The rank of $\boldsymbol{\Pi}$ shows the number of cointegrating relationships (i.e. *r)* which is determined by testing whether its Eigen values ***(λi)*** are different from zero. Johansen test uses both the trace test and the maximum eigenvalue test for Cointegration. According to Johansen trace test is more robust than maximum Eigenvalue and also gives better result for Cointegration. (Johansen, 1988) suggests that using the Eigen values of $\boldsymbol{\Pi}$ ordered from the largest to the smallest is for computation of trace statistics. The trace ***(λ trace)*** is computed by the following formula:

$$\lambda_{\text{trace}} = -T\sum \text{Ln}(1-\lambda_i), i = r+1 \ldots n-1 \quad \text{.....4.9}$$

And the hypotheses are:

H_0: r = 0 H1: r ≥ 1

H_0: r ≤ 1 H1: r ≥ 2

H_0: r ≤ 2 H1: r ≥ 3

3.3.3 Granger Causality Test

After confirming that co-integration exist among variables, the Granger Causality test can be apply In order to explain Granger Causality Test, assume $\boldsymbol{Y_t}$ and $\boldsymbol{X_t}$ are the series to predict the causal relationship between the variables. For example, $\boldsymbol{X_t}$ causes $\boldsymbol{Y_t}$ if the previous value of $\boldsymbol{X_t}$ can predict the current value of $\boldsymbol{Y_t}$, and considering other

related and relevant information in the past. Specifically, the pair of Causality variables can be explained by the following regression (Granger, 1988):

$$\Delta X_t = \sum_{i=1}^{n} \alpha_i \Delta Y_{t-i} + \sum_{j=1}^{n} \beta_j \Delta X_{t-j} + u_{1t} \quad \text{.....4.10}$$

$$\Delta Y_t = \sum_{i=1}^{n} \lambda_i \Delta Y_{t-i} + \sum_{j=1}^{n} \delta_j \Delta X_{t-j} + u_{2t} \quad \text{.....4.11}$$

There is no correlation between u_{1t} and u_{2t}. This study will investigate the bilateral Causality for two variables. Both directional Causality from ***Y*** to ***X*** can be observed under the estimated coefficients on the lagged ***Y*** in equation(4.10) and are statistically different from zero $(\sum \alpha_i \neq 0)$ and the set of estimated coefficients on the lagged ***X*** in equation (4.11) is not statistically different from zero $(\sum \delta_j = 0)$.

On the other hand, a unidirectional Causality from ***X*** to ***Y*** occurs if the set of lagged ***Y*** coefficients in equation (4.10) is not statistically different from zero $(\sum \alpha_i = 0)$ and the set of lagged ***X*** coefficients in equation (4.11) is statistically different from zero $(\sum \delta_j \neq 0)$ Bilateral Causality exists when both regressions of the set ***Y*** and ***X*** coefficients are statistically significantly different from zero $(\sum \alpha_i \neq 0)$ and $(\sum \delta_j \neq 0)$ (Engle and Granger, 1987).

4.4 Data Source

The attention of this study is to examine the impacts of FDI inflow into Brazil economy and its impact on Growth. This study covers the period from (1980-2013). The data are annual or time series data source from World Bank Development Indicators (WDI) of the World Bank and to be complemented by Central Bank of Brazil. The variables are measured in terms of share to GDP ratio, GDP is measured in (US$) Foreign direct investment measured in (US$), gross fixed capital formation measures in0 (US$), and exports measured in (US$). However, the explanatory variables enter the model as constant volume and taking (2005) as a base year.

CHAPTER FIVE

EMPIRICAL ANALYSIS AND DISCUSSION OF RESULTS

5.1 Results from the Stationary Tests

Both (PP) and (ADF) tests of unit rout were proceeded in this empirical study in order to investigate whether unit rout (non-Stationarity) exist or not for each variables which take in consider of natural log in both at levels and first differences. Adapting time series analysis is very sensitive to Stationarity property of the data because ordinary least squares estimators of results might provide a spurious regression like very level of (R^2) coefficient of determination also high level of significance (T and F) test meaning that the variance and covariance of estimated coefficients are biased not stable through time .

Table 5.1: Results of Unit Root Tests for Stationarity (Constant and trend included)

Variable	Augmented Dickey-Fuller (ADF) Test		Phillips-Perron (PP) Test		Remarks
	Prob.Value At (level)	Prob. Value (1^{st} Difference)	Prob.Value At (level)	Prob. Value (1^{st} Difference)	
RGDP	0.3842	0.0000*	0.2144	0.0005*	I(1)
FDI	1.0000	0.0018*	0.9976	0.00001*	I(1)
GFCF	0.3842	0.0000*	0.9972	0.00101*	I(1)
EXPT	1.0000	0.0057*	0.8756	0.0002*	I(1)
**** Rejection of null hypothesis of unit root at 1% level of significance***					

SOURCE: Computed by Author from (E-Views 7.0 iterations Results) Test of Stationary

Unit root tests were preceded on all the four variables using both the (ADF) and (PP) statistical tests. The null hypothesis of a unit root was not rejected at the (1%) percentage significance level for all variables at the levels because probability value of each variable was more than (5%) at levels see results that are depicted in Table (5.1). Meaning that we cannot reject the null hypothesis meaning that variables have unit root means that variables they are not stationary, each of all variables become stationary at the first order I(1) after differencing. Appendix lll illustrates graphical examination of sationarity of variables at levels and first difference.

5.2 Johansen Cointegration Test

Initially before proceeding Johansen-Juselius Cointegration test to investigate the number of cointegrating vectors. We should describe the optimal time lags to be included in the Cointegration analysis in order to get more accurate results. Hamman-Quinn Information Criterion (HQ) and Schwarz Information Criterion (SIC) suggest two lag as the appropriate lag structure.

The study proceeds with the Cointegration test recognized that all the variables are integrated of the same order, I(1). This Cointegration test allows us to test for long-run equilibrium connections among the series. Trace statistics and Eigenvalue statistics for specified empirical model noted in Table (5.2-A & B). The absence of no cointegrating relation among the variables which is null hypothesis was rejected at the 95% present confidence levels for both statistics because trace statistic and Maximum Eigenvalue statistics are greater than critical value. The value of trace statistic was (66.683) and (37.68662) its greater than critical value (32.11832, 63.87610) respectively, as well the probability value is equal (0.0054, 0.0364) respectively and its less than (5%) so we can reject the null hypothesis (there is no Cointegration among the variables) rather we accept the alternative hypotheses (there is Cointegration among the variables), in another hand the Max-Eigen value of Cointegration test was (37.68662) its greater than critical value (32.1183) with the probability value equal to (0.048).

Table 5.2(A): Johansen Co-integration (Trace Test)

Unrestricted Co-integration Rank Test (Trace)			
Hypothesized	**Trace**	**Sig.lavel: 0.05**	
No. of CE(s)	**Statistic**	**Critical Value**	**Prob.****
None*	66.68368	63.87610	0.0054
At most 1*	53.99706	49.91525	0.0364
At most 2	20.64078	25.87211	0.4422
At most 3	11.272754	18.51798	0.4264
Trace test indicates 2 co-integration at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level.			

Table 5.2(B): Johansen Cointegration (Maximum Eigenvalue)

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)			
Hypothesized	**Max-Eigen**	**Sig.level: 0.05**	
No. of CE(s)	**Statistic**	**Critical Value**	**Prob.****
None*	37.68662	32.11832	0.0482
At most 1	19.35628	25.82321	0.2819
At most 2	10.36802	19.38704	0.5796
At most 3	6.272754	12.51798	0.4264
Trace test indicates 2 co-integration at the 0.05 level *denotes rejection of the hypothesis at the 0.05 level.			

SOURCE: Computed by Author from (E-Views 7.0 iterations Results) Test of co-integration

Additionally, there are two cointegrating equations (two long run relationships) suggested by the Trace statistics meaning that there are two long run relationships among the variables in other words means that our four variables (GDP, FDI, GFCF and EXP) have long run association ship while the Maximum Eigenvalue statistics proposed one cointegrating equation among included variables meaning that there are one long run relationships among the variables.

As results suggested that there is Cointegration among variables that mean there is long run relationship between real gross domestic growth rates (logRGDP) and the explanatory variables (foreign direct investment, gross fixed capital formation, exports), meaning that these four variable they are moving together in the long run long, the suggested results of Johansen Cointegration test come in line with finding of (De Mello, 1997, Basim, 2003 and Borensztein, 1998).

5.3 Vector Error Correction Model Estimation Results

The Cointegration of the variables gives room for preceding Vector Error Correction Model (VECM). The estimated result of (VECM) is presented in appendix I, below at the end of this paper and summarized in Table (5.3-A & B). The short run and long run interaction of the underlying variables of the (VECM) and has been established on the Johansen Cointegration methodology. The establishment of a long-run equilibrium linkage and between the explanatory variables (FDI, GFCF and EXPT) and gross domestic product led to the estimation of (VECM). The variables are converted into natural log transformation and hence these values represent long term elasticity measures. The standard error statistics are given in ( ) while the t-statistics are given [ ]. The coefficients for foreign direct investment (FDI), gross fixed capital formation (GFCF), and exports (EXPT) are positive and statistically significant.

5.3.1 Long Run Estimation of Results

The coefficient of variable LnFDI is positive and statistically significant at (5%) level of significance, as it relates to real gross domestic product. This implies that (1%) increase in foreign direct investment will spur real gross domestic product by (0.4%) see Table (5.3-A), however this number is not quite large due to diminishing yields to capital in the long run according to the neoclassical growth model also, the (MNCs) they are not re new investing there profits (returns) in the long run that could push economic growth forward (Li and Liu 2005). But this is compatible with theory, in theoretical suggestions; FDI causes an increase in economic growth. This due to the spill-over affects in

capital, technology Transfers and an increase in production (Blomstrom, 1994) and (Coe, 1997).

Table 5.3(A): Vector Error Correction Model Estimated Results (Long-Run)

Normalized Cointegrating Coefficients (Long Run Estimates)				
Ec_{t-1}	**lnFDI(-1)**	**lnGFCF(-1)**	**lnEXPT(-1)**	**Constant (C)**
-0.374757	0.421063 (0.16721) [2.51817]	1.566605 (0.40254) [3.89180]	1.712565 (0.15654) [10.9404]	2.437249

Source: Author's computation as summary of appendix I (E-Views 7.0 iterations Results); Note: Standard errors in ( ) and t-statistics in [ ]

The result for gross fixed capital formation positive and statistically significantly as it relates to real gross domestic product. *(*1%) increase in gross fixed capital formation leads to (1.5%) increase in real gross domestic product the relationship is consistent with theory. Domestic investment has been cut by the simplicity of credit availability from the financial sector. This emanates from the fact that a more developed financial sector would entail transparency in the financial system. This has implications of increased domestic investment. Hence a positive relationship with RGDP is ensured by (Ugochukwu, 2013), and (Noy, 2007).

The result for exports is positive and significantly related to real gross domestic product. (1%) increase in exports results in an increase in real gross domestic product by (1.7%) this is compatible with theory that degree of openness become one of the main components of national income and there is positive relationship between external trade and economic growth this result finds support in (Pereira and Colegario, 2013). All the explanatory variables are statistically significant in explaining RGDP since they have absolute t-values greater than (2).

The coefficient of error correction term (Ect_{-1}) in (VECM) model has a negative sign and statistically significant. We can decide that there is long run Causality relationship among variables meaning that there is long run Causality running from the explanatory variables (FDI, GFCF and EXPT) towards the dependent variable (RGDP). The long run impact of the explanatory variables on RGDP as shown by Table (5.3-A) as illustrated by using equation (3.10).

RGDP = 2.437 + 0.421 FDI + 1.566 GFCP + 1.712 EXPT + Vt …….…..… 3.10

5.3.2 Speed of Adjustment and Short Run Estimation of Results

The speed of adjustment (short run dynamics) is indicated by the coefficient of the error correction terms to dependant variable (RGDP). The result is presented in Table (5.3-B). The coefficient of (Ect_{-1}) is equal to (-0.374757). This shows that the speed of adjustment toward the long run equilibrium is approximately (37%).

The implication is that, if there is a deviation from equilibrium only (37%) is corrected in one year (or period of adjustment) as the variable moves towards restoring equilibrium in the long run. Thus, there is no strong pressure on lnRGDP to restore long run equilibrium wherever there is a disturbance this is because of there are other explanatory variables which not included to the model that could affect economic growth like labour, human capital ,level of education rate of inflation . The speed of adjustment coefficient has the correct sign (negative) and statistically significant.

The coefficients of variable ($DLnFDI_{-1}$), ($DLnFDI_{-2}$) in the short run found to have a positive effect on RGDP in the short-run and they were statistically significant the coefficients of these two variables are (0.0890, 0.0643) respectively as shown in Table (5.3-B). Meaning that these two variables jointly influence the dependant variable (RGDP) in short run, meaning that there is short run effect run from ($DLnFDI_{-1}$) and($DLnFDI_{-2}$) to dependant variable (RGDP).This suggesting results completely consist with the theory of neoclassical model of growth assuming that FDI stimulates economic growing through cumulative capacity of investment and/or its effectiveness

and can enlarge the existing stock of knowledge in the host Economy through labour preparation programs, new skill acquirement and transmission, and the introduction of new managerial practices and organizational arrangements (Gezahegne, 2011) and (Aga, 2014).

Table 5.3(B): Vector Error Correction Model Estimated Results (Short-Run)

Coefficients of The lag of (DLnFDI$_{-1}$) (DLnFDI$_{-2}$)				
Ec$_{t-1}$	**D(lnFDI$_{-1}$)**	**Prob.value (χ^2)**	**D(lnFDI$_{-2}$)**	**Prob.value (χ^2)**
-0.374757	0.89010 (0.033) [2.67265]	0.008821	0.64300 (0.1827) [3.53513]	0.042662

SOURCE: Author's computation as summary of appendix I (E-Views 7.0 iterations Results);
Note: Standard errors in ( ) and t-statistics in [ ]

5.4 Pairwise Granger Causality Tests

The Granger Causality test is presented in Table (5.4). It shows that there is bi-directional Causality between FDI and RGDP, in other word FDI Granger cause RGDP meaning that the Causality runs from FDI to RGDP and in the other hand RGDP Granger cause FDI and the Causality runs from RGDP toward FDI. This suggested result consist with the theory that FDI contributes in growth rate through increasing productivity level of human capital and that lead to increase in production and bringing new technology in a host country regarding with new and high level of managerial experiments that lead to rising in productivity in the host country in the other hand high rate of economic growth, low level of inflation and Political stability this conditions attract foreign investors to invest their capital in a stable economic environment (Li and Liu 2005) and (Ruxanda & Muraru, 2010). Moreover, another bi-directional Causality suggested between FDI to EXPT we could say that FDI Granger cause EXPT and this Causality runs from FDI to EXPT also from EXPT to FDI this Causality seems to be explained by theory indicating that increasing in FDI inflows to the economy lead to

increasing in production level through the productivity level of human capital and using new technology in production process since export considered to be an external demand for host countries production thus after satisfying the needs of local markets (domestic demand) the surplus of production go to external markets(external demand).

Table 5.4: Pairwise Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
D(FDI) does not Granger Cause D(RGDP)	32	12.99694	0.0454
D(RGDP) does not Granger Cause D(FDI)		8.14150	0.0317
D(EXPT) does not Granger Cause D(RGDP)	32	2.22651	0.0427
RGDP does not Granger Cause D(EXPT)		4.81993	0.0162
GFCF does not Granger Cause RGDP	32	7.53279	0.0434
D(RGDP) does not Granger Cause D(GFCF)		9.16437	0.0197
D(EXPT) does not Granger Cause D(FDI)	32	6.20450	0.0463
D(FDI) does not Granger Cause D(EXPT)		5.45056	0.0221
D(GFCF) does not Granger Cause D(FDI)	32	0.26268	0.7709
D(FDI) does not Granger Cause D(GFCF)		2.94296	0.0498
D(GFCF) does not Granger Cause D(EXPT)	32	2.37506	0.01122
D(EXPT) does not Granger Cause D(GFCF)		0.90060	0.4182

SOURCE: Computed by Author from (E-Views 7.0 iterations Results) Test of Causality

In the other hand the degree of openness and trade liberalization seems to be very important term for attracting FDI inflows because foreign investors prefer liberate

economy than closed one (Pereira and Calegario, 2013) and (Markussen and Vernables, 1998).

In term of exports and domestic investment the Causality between these two variable and GDP found to a bi-directional Causality and This Causality runs from (EXPT, GFCF) to RGDP also it runs from RGDP to (EXPT, GFCF) since exports and domestic investment considered to be main components of nation income also high level of national income with macro stability lead to higher level of investment because investors' confidence is very sensitive toward the macro and political stability thus they prefer stable economic environment to invest this leads to increase the production level in the economy and then exports.

The results from this study tend to confirm the indication that the causative relation or causal link between economic growth and (FDI and EXPT) is crucially determined by foreign capital inflow and policies pursued in the country.

4.5 Variance Decomposition

Appendix II, provides results about decomposition of variance covered for ten years. This decomposition allocates to overall variation or fluctuations in particular variable to the constituent innovations in the system. It seems that to large extend all the variables are driven by themselves.

The results show that the variables are largely motivated by themselves. For instance, about (100%) of the variations in per real gross domestic product are due to its own innovations (fluctuation) during the first year of the forecast prospect. The involvement of FDI to the deviations in real gross domestic product turn out to be significant from the fifth year when it reaches (25.99%) and increase to (47.95) by the tenth year. Consequently, the foremost drivers of RGDP are itself and FDI.

The variances of FDI are driven yearly by itself in the first year, donating about (70.01%) of the total variations and RGDP (29.98%). By the tenth year, FDI accounted

for (38.97%), while EXPT has (44.12%) and RGDP has (13.92%) as major drivers of FDI.

With regard to variations in GFCF, its own contribution stands at (48%) while RGDP account for (51.28%) in the first year. In the tenth year GFCF account for (37.17%) while RGDP accounts for (57.32%). Thus, the key variables driving GFCF is RGDP from first to tenth year.

The variations in EXPT are driven by itself in the first year by (70%). In the fifth year accounted for (48%) and FDI by (32%). However, in the tenth year, FDI accounts for only (15) variations while GFCF and RGDP accounts for (67%) and (13%) respectively. The key driver of EXPT is FDI from second to tenth year (see Appendix II).

CHAPTER SIX

CONCLUSION OF SUMMURY FINDINGS AND RECOMMENDATIONS

6.1 Conclusion

This study examines the impact of foreign direct investments on economic growth in Brazil. The econometric approach used was Cointegration and Vector Error Correction Model (VECM). The data used are time series covering the period 1980 - 2013. The statistical properties of the series was tested especially unit root test for Stationarity and Johansen Cointegration test was employed to explore the long relationship among variables. While Granger Causality test was used to test the direction of Causality. Vector Error Correction Model (VECM) was adopted to estimate long run and short run effects of foreign direct investment on economic growth.

The results of Stationarity test indicate that all the series (variables) were integrated of order one (first difference) that is I(1) by using Augmented Dickey Fuller (ADF) and Phillips Perron (PP) and therefore conform to Stationarity at first difference.

The Johansen Cointegration results show that the variables are cointegrated. The trace statistic shows two cointegrating equations while maximum Max-Eigen value statistic shows one cointegrating equations at 5% level of significance. Results of Cointegration test indicate that there is long relationship among variables meaning that all variables are moving together in the long run (long run association ship).

The first Research question of this study is (does foreign direct investment promotes economic growth?); Vector Error Correction Model estimation results provide sufficient answer. The results of estimated model (VECM) under VAR system shows that foreign

direct investment; gross fixed capital formation and exports are positive and statistically significant determinants of economic growth with the test at 5% and 1% level of significance in the long run, however the effects of variable FDI to dependant variable a RGDP is no to strong, that is due to the fact that diminishing returns to capital in the long run is decreasing according to neoclassical growth model and (MNCs) which considered the most important source of foreign capital they are not renew investing their profits in the long run that could promote or stimulate economy more.

Short run estimation results suggested that both coefficients of lagged variables (FDI_{t-1}, FDI_{t-2}) have positive effects on economic growth and were statistically significant in other words they are jointly influencing the dependant variable in the short run and this influence seems to be larger than the long run this is because of capital Stock in other words foreign direct investment can supplement the current stocks of awareness and technology in the host Economy via labour preparations systems, skill acquirement and diffusion, and new managerial performs and organizational appointments. Finally based on empirical finding of this paper we can say that foreign direct investment has important role to economic growth and promote economic growth in short run more than long run.

The coefficient of error correction term (speed of adjustment) toward the long run equilibrium was not large high it was about (37.4757) meaning that if there was deviation from the equilibrium level only (37%) is corrected in one year as variables moving toward equilibrium in the long run this is most probably due to the fact that there are an other variables that affect the economic growth which are not included to the empirical model such as labour, human capital, inflation rate and government expenditure.

The second Research question of this paper is (is there a Causality relationship between foreign direct investment and economic growth in Brazil?), to answer that question pairwise Granger Causality test conducted. The results of Granger Causality test suggest a bi-directional between FDI - GDP and bi-directional Causality means FDI Granger cause RGDP in the same time RGDP Granger cause FDI so it is both side feedback, and

its completely consist with theory proposed that more FDI inflows increase stocks of technology, human capital and advanced level of management that could lead to increasing in domestic firms productivity and efficiency that promote economic growth, in the other hand a stable macroeconomics and political conditions with high growth rate of gross domestic product attract more foreign investors compare to other countries with unstable macro economics and political conditions.

Another bi-directional found between FDI and EXPT meaning that FDI Granger cause EXPT in the same time EXPT Granger cause FDI (both side feedback). Causality between FDI and domestic investment also we found it uni-directional Causality and this Causality running from FDI toward domestic investment means that FDI Granger cause domestic investment (one side feedback).

The variance decomposition shows that all the variables largely explained themselves also they can be considered main components of economic growth.

Foreign direct investment can be seen from this findings as an essential part of an open and operative worldwide economic scheme which organizes a major promoter to growth. Its assistances, nevertheless, do not appear automatically and are spread unequally across countries, sectors and local communities.

6.2 Recommendations

Based on the findings of this study, the following policy recommendations are recommended to attract and sustain more foreign direct investment which reflects in positive ways to host economies:

The government through the relevant agencies are required to design policies and programs that will continue encourage more investors at an increasing competitive global environment.

In many time the agreements of doing business between countries fails due to the huge differences in culture among countries (diversity of traditions), that is why it's very important for both partners to understand each other well and compromise on specific principles.

Local firms and companies should take the consideration of adoption and implementing the offered technologies in order to increase their market shares through increase the productivity by technologies and efficient labour skills to maintain their market shares. Otherwise they will lose their shares due to insufficient capabilities then cutting production then laying-off labours which mean increasing unemployment rates.

Economic and political stability are so essential to achieving sustainable capital inflow. To achieve this, an investment friendly environment by enhancing foreign investor legal protection, streamlining (simple) procedures for business.

Degree of openness (trade liberalization) and trade regimes they play important role of attracting foreign investors especially export promotions that could lead to more exports then surplus in current account balance that lead to appreciation of domestic currency and reduce inflation rate.

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APPENDIX

APPENDIX I: VECTOR ERROR CORRECTION MODEL ESTIMATES

Vector Error Correction Estimates
Date: 11/15/14 Time: 10:04
Sample (adjusted): 1982 2013
Included observations: 32 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	**CointEq1**
LNRGDP(-1)	1.000000
LNFDI(-1)	0.421063
	(0.16721)
	[2.51817]
LNGFCF(-1)	1.566605
	(0.40254)
	[3.89180]
LNEXPT(-1)	1.712565
	(0.15654)
	[10.9404]
C	2.437249

Error Correction:	D(LNRGDP)	D(LNFDI)	D(LNGFCF)	D(LNEXPT)
CointEq1	- 0.374757	0.425801	1.583010	1.730713

	(0.10824)	(0.46791)	(0.45817)	(0.11532)
	[3.46232]	[2.51071]	[3.52481]	[10.46477]
D(LNRGDP(-1))	-0.228639	-0.012692	0.206081	0.724374
	(0.24517)	(0.83333)	(0.35827)	(0.48771)
	[-0.93258]	[-0.01523]	[0.57521]	[1.48525]
D(LNRGDP(-2))	-0.207173	0.229626	0.009779	-0.038765
	(0.09729)	(0.33069)	(0.14217)	(0.19354)
	[-2.12943]	[0.69438]	[0.06878]	[-0.20030]
D(LNFDI(-1))	0.890130	0.231113	-0.019288	-0.098280
	(0.33633)	(0.19249)	(0.08276)	(0.11265)
	[2.67210]	[1.20068]	[-0.23307]	[-0.87241]
D(LNFDI(-2))	0.643200	0.239195	0.015725	-0.171091
	(0.182802)	(0.22286)	(0.09581)	(0.13043)
	[3.598204]	[1.07330]	[0.16412]	[-1.31176]
D(LNGFCF(-1))	0.793328	0.793602	0.192186	-0.771267
	(0.25843)	(0.87841)	(0.37765)	(0.51409)
	[3.06981]	[0.90346]	[0.50890]	[-1.50025]
D(LNGFCF(-2))	0.142174	-0.095266	-0.498064	-0.219038
	(0.22273)	(0.75706)	(0.32548)	(0.44307)
	[0.63833]	[-0.12584]	[-1.53023]	[-0.49436]
D(LNEXPT(-1))	0.891799	-0.657358	0.137011	0.495471
	(0.19546)	(0.66438)	(0.28564)	(0.38883)
	[4.56251]	[-0.98943]	[0.47967]	[1.27425]
D(LNEXPT(-2))	0.426299	0.767707	0.208673	0.588986
	(0.20820)	(0.70766)	(0.30424)	(0.41416)
	[2.04759]	[1.08485]	[0.68587]	[1.42211]
C	0.004626	0.016774	0.019072	0.032319
	(0.00984)	(0.03345)	(0.01438)	(0.01957)
	[0.47015]	[0.50153]	[1.32632]	[1.65108]

R-squared	0.839487	0.617074	0.449855	0.433130
Adj. R-squared	0.719102	0.329880	0.037246	0.007978
Sum sq. resids	0.013786	0.159280	0.029441	0.054557
S.E. equation	0.033895	0.115210	0.049532	0.067427
F-statistic	6.97335	2.148631	1.090270	1.018764
Log likelihood	49.90959	22.99286	41.56382	34.77838
Akaike AIC	-3.628145	-1.181169	-2.869438	-2.252580
Schwarz SC	-3.132217	-0.685241	-2.373510	-1.756652
Mean dependent	0.003409	0.050785	0.020857	0.017898
S.D. dependent	0.063953	0.140739	0.050481	0.067698

Determinant resid covariance (dof adj.)	4.01E-11
Determinant resid covariance	3.55E-12
Log likelihood	165.1462
Akaike information criterion	-11.01329
Schwarz criterion	-8.831206

APPENDIX II: VARIANCE DECOMPOSITION

Variance Decomposition of LNRGDP:

Period	S.E.	LNRGDP	LNFDI	LNGFCF	LNEXPT
1	0.033895	100.0000	0.000000	0.000000	0.000000
2	0.073653	90.74703	1.391329	4.189372	3.672265
3	0.102038	85.54619	2.398419	10.13801	1.917381
4	0.117776	77.72798	3.784532	11.03880	7.448687
5	0.130752	65.77179	8.232427	9.662200	16.33358
6	0.146149	52.98251	16.50193	8.280095	22.23546
7	0.163519	42.32637	25.95466	7.117687	24.60128
8	0.180920	34.71788	34.65937	6.000743	24.62201
9	0.197074	29.56792	42.04188	5.094617	23.29558
10	0.211461	25.91456	47.95570	4.448894	21.68085

Variance Decomposition of LNFDI:

Period	S.E.	LNRGDP	LNFDI	LNGFCF	LNEXPT
1	0.115210	29.98836	70.01164	0.000000	0.000000
2	0.183742	37.16812	60.51799	1.495150	0.818733
3	0.270634	28.32523	54.04598	3.821015	13.80778
4	0.330489	25.47778	51.03162	3.290082	20.20052
5	0.377508	21.46629	47.16187	3.418067	27.95378
6	0.412955	19.00248	44.45148	3.326568	33.21947
7	0.440868	16.96633	42.02712	3.253781	37.75277
8	0.462580	15.59555	40.53120	3.124525	40.74872
9	0.480159	14.63649	39.54604	3.045996	42.77148
10	0.496564	13.92172	38.95797	2.998316	44.12199

Variance Decomposition of LNGFCF:

Period	S.E.	LNRGDP	LNFDI	LNGFCF	LNEXPT
1	0.049532	51.28999	0.707857	48.00215	0.000000
2	0.081867	54.73743	0.867662	44.39364	0.001261
3	0.096938	55.36835	1.727036	42.86079	0.043817

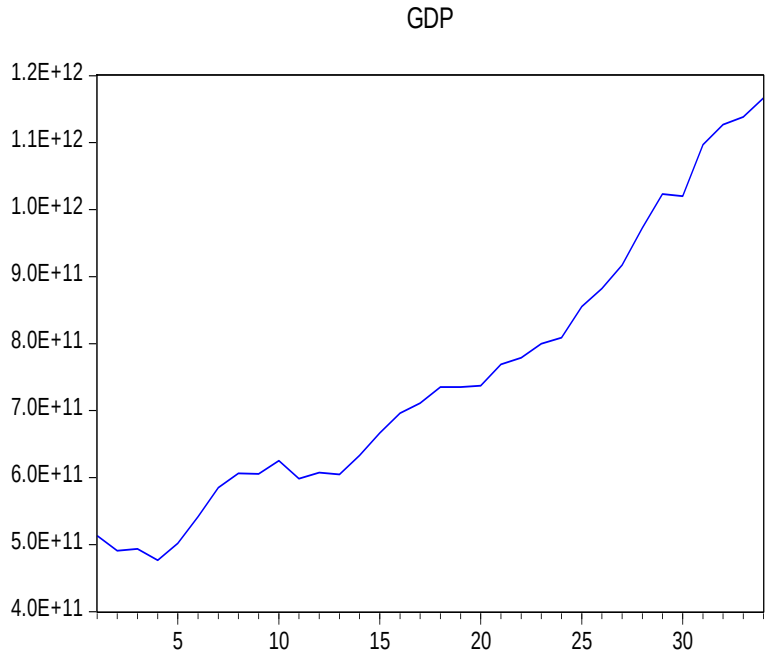
4	0.106770	56.29461	2.586100	41.04672	0.072565
5	0.117806	56.40628	3.267132	40.26010	0.066489
6	0.130224	56.72253	3.907365	39.31567	0.054435
7	0.141549	56.98761	4.406737	38.55772	0.047942
8	0.151672	57.18573	4.841457	37.93013	0.042681
9	0.161108	57.28436	5.178583	37.49715	0.039911
10	0.170122	57.32998	5.453988	37.17449	0.041543

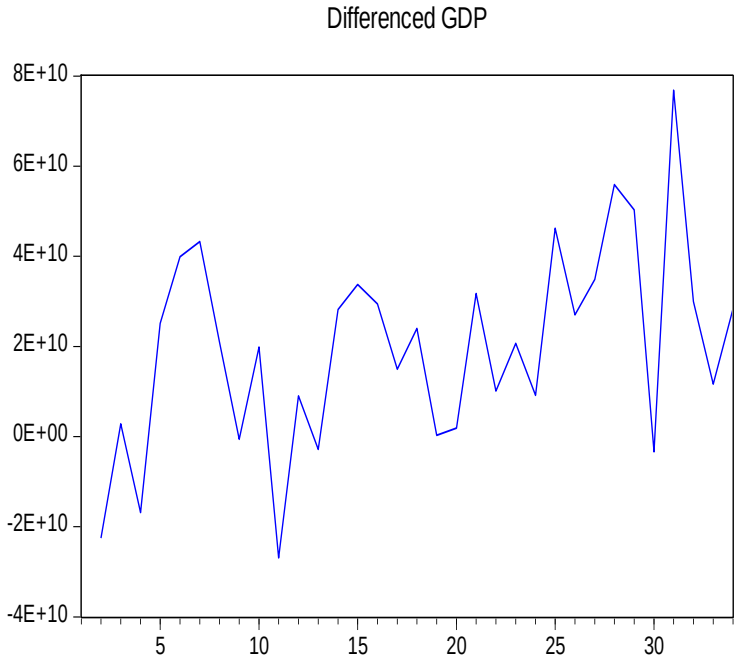
Variance Decomposition of LNEXPT:

Period	S.E.	LNRGDP	LNFDI	LNGFCF	LNEXPT
1	0.067427	11.33027	9.835926	8.727751	70.10605
2	0.079948	12.29362	14.13847	6.543373	67.02453
3	0.088465	17.14424	15.26391	5.492859	62.09900
4	0.092962	15.78727	22.71939	5.093896	56.39945
5	0.099830	13.72620	32.53791	4.827930	48.90797
6	0.112283	12.28119	44.85359	4.075754	38.78947
7	0.127658	12.31957	53.94847	3.613460	30.11850
8	0.145479	12.98745	60.29323	3.521564	23.19776
9	0.162896	13.57112	64.35765	3.458445	18.61278
10	0.178744	13.65956	67.12732	3.448307	15.76481

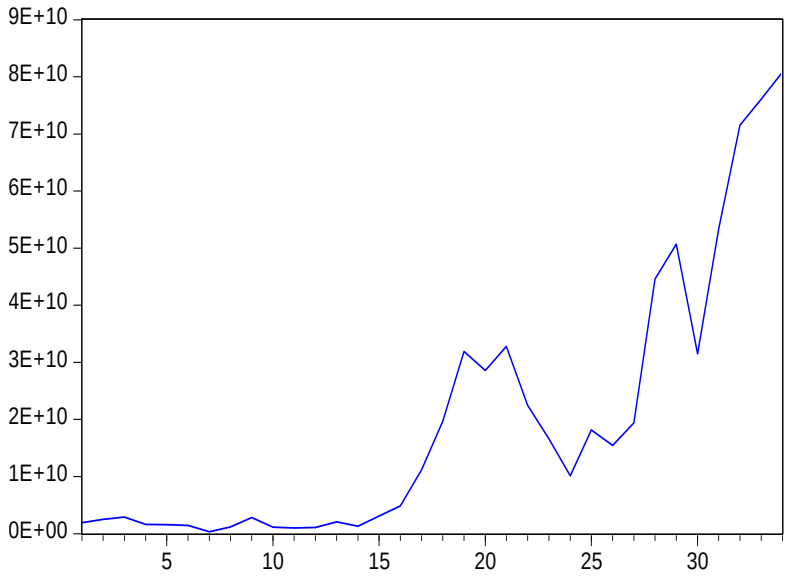
Cholesky Ordering: LNRGDP LNFDI LNGFCF LNEXPT

APPENDIX lll: VARIABLES AT LEVELS AND FIRST DIFFERENCE

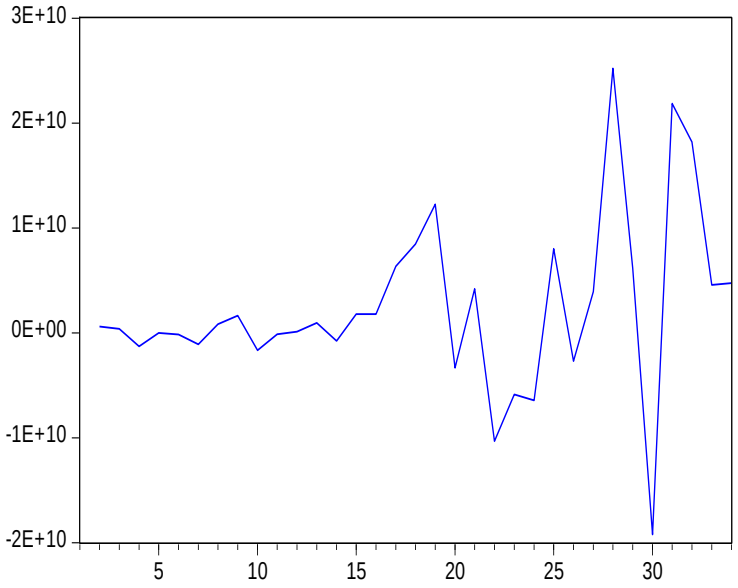




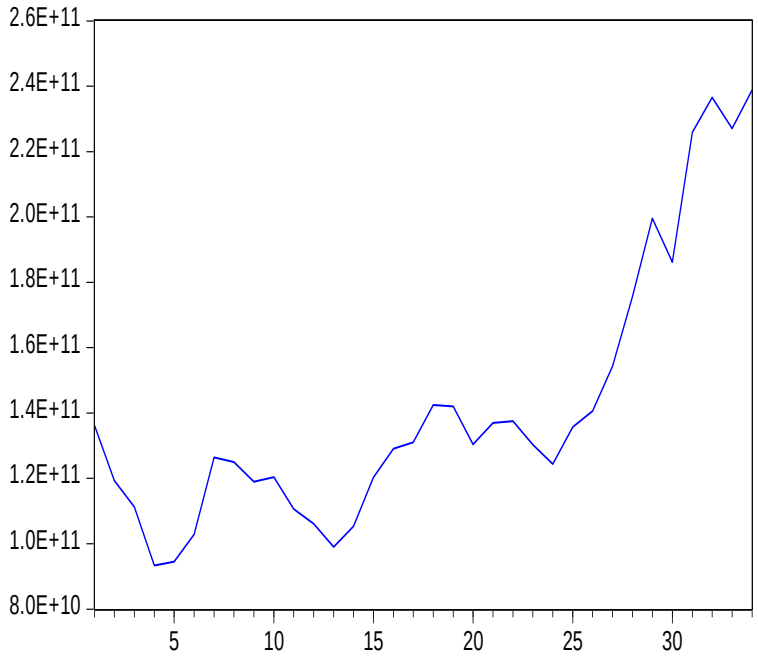
FDI



Differenced FDI



GFCF



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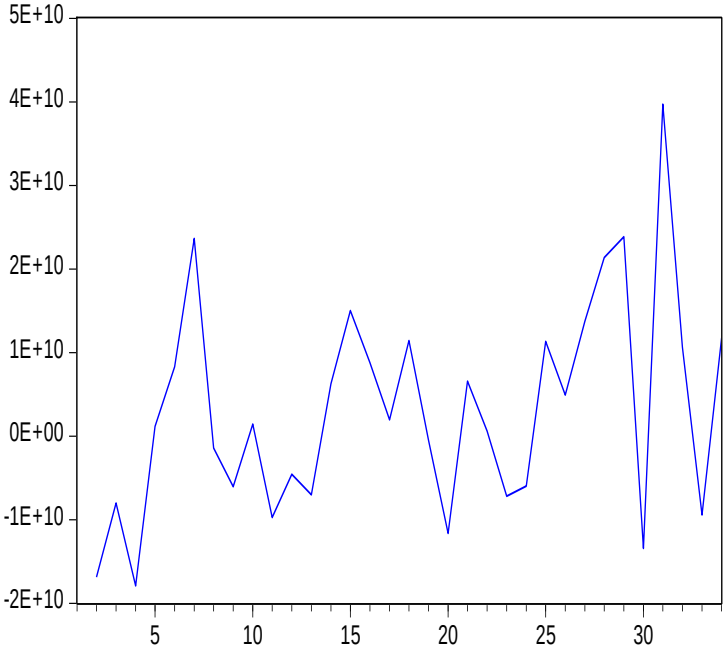
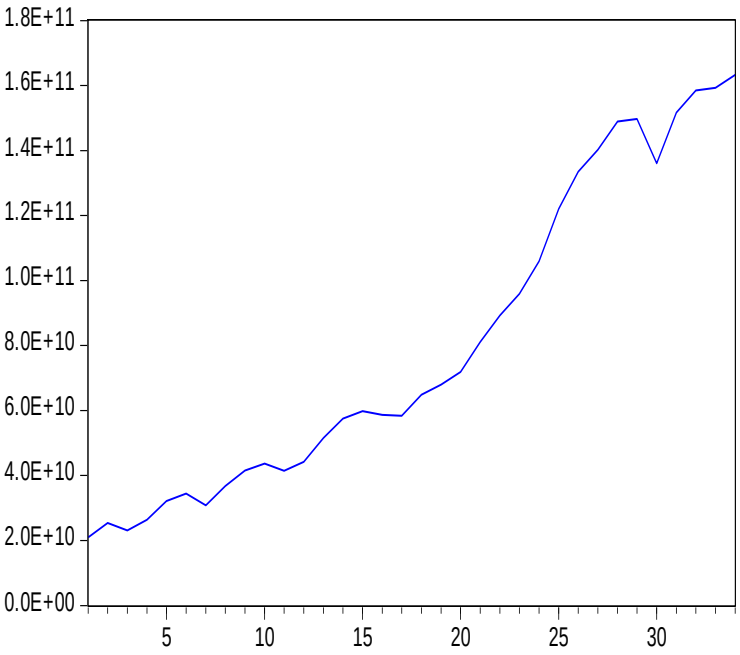


EXPT



Differenced EXPT