THE EFFECT OF FOREIGN DIRECT INVESTMENT ON THE ECONOMIC GROWTH PERFORMANCE OF MENA COUNTRIES

MUHAMMAD MUHSIN

MAY 2015

THE EFFECT OF FOREIGN DIRECT INVESTMENT (FDI) ON THE ECONOMIC GROWTH PERFORMANCE OF MENA COUNTRIES

A THESIS SUBMITTED TO

THE GRADUATE SCHOOL OF SOCIAL SCIENCES

OF

IZMIR UNIVERSITY OF ECONOMICS

BY

MUHAMMAD MUHSIN ANWAR

IN PARTAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ART

IN

THE GRADUATE SCHOOL OF SOCIAL SCIENCES

May 2015

Approval of the Graduate School of Social Sciences

Assoc.Prof.Dr. Ö. Osman DEMİRBAŞ

Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of master of art.

Prof. Dr. Ayla Oğuş Binatlı

Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality as a thesis for the degree of master of art.

Asst. Prof. Dr. Burak Dindaroğlu

Examining committee members Date: June 26, 2015

Prof. Dr. Ayla Oğuş Binatlı

Asst. Prof. Dr. Burak Dindaroğlu

Prof. Dr. Sacit Hadi AKDEDE

ABSTRACT

THE EFFECT OF FOREIGN DIRECT INVESTMENT (FDI) ON THE ECONOMIC GROWTH PERFORMANCE OF MENA COUNTRIES

Anwar, Muhammad

MA in Financial Economics, Department of Social Sciences

Supervisor: Assist. Prof. Dr. Burak Dindaroğlu

May 2015, 86 Pages

This thesis investigates whether foreign direct investment (FDI) influences the economic growth performance of MENA countries analysis on a panel dataset for 10 countries in the MENA region or not? Since these countries have insufficient development factors such as, new advanced technology, accumulated physical capital and well skilled labor force and in this sense, FDI should have a positive and significant effect on the economic growth performance of Middle East and North Africa countries because FDI is considered as the main important vehicle of new technology transfer, physical capital inflows and obtaining the most professional lobar force.

Accordingly, the region has become a good market for foreign enterprises and it has provided many attractive incentives and opportunities for foreign companies to shift their investment towards MENA zone. The variables chosen in this paper are GDP growth, FDI, Exports, Unemployment, population, urbanization, GDP, Arable land, natural resources and gross capital formation percentage of GDP. For the time period, the data cover the sample period 2001-2012. Panel data models (Fixed Effects Model, Random Effects Model and pooled OLS) are applied to find the empirical results. According to our findings FDI is important for the region thus it has a positive and significant effect on the performance of economic growth in the MENA region.

Key words: Economic Growth, FDI, Panel Techniques (Fixed and Random Effects and pooled OLS), Hausman test. Sample period 2001-2012.

To My Family

ACKNOLEDGEMENTS

First of all, I need to thank the Almighty for giving me strength through the research work. I also would like to give my thanks very much to my paper supervisor Assist. Prof. Dr. Burak Dindaroğlu for being my supervisor, his support and time. Special thanks must go to my academic advisor professor Ayla Oğuş Binatlı for her guidance and recommendations especially about the econometric part.

I also have many appreciations to Professor Hakan Yetkiner for his encouragement, precious comments and showing always his support to me and it is much appreciated. I would also like to give a special thanks to my father as I always had his back and he was supporting me and encouraging me with setting up best goals.

Finally, I cannot forget to thank my wife, Awat O Abdullah for her patience and always encouragement during my studies.

TABLE OF CONTENTS

LIST OF TABLES

TABLE

LIST OF SYMBOLS

CHAPTER -1-

1. THESIS INTRODUCTION

1.1 INTRODUCTION

When the Second World War ended then the importance of foreign companies started to rise dramatically and since then multinational foreign investors have played a great role in rebuilding economies of most countries worldwide because the war destroyed the economies of most countries, developed and developing alike. On one side, due to this reason a lot of efforts have been made since then to attract foreign direct investment (FDI) by both developed and developing nations as a considerable source to reactivate their economies and finance the projects of investment in order to achieve economic growth once again for the purpose of prosperity. On the other side, multinational companies have always been looking for finding other markets or expanding their markets for liquidating their products and services so the reasons mentioned above made a very good environment for FDI to come to those countries and start doing investment. Based on the common view that FDI is the outflow of accumulated capital, advanced technology and skilled labor forces into a country where these factors are not available or insufficient for development in terms of production inputs in the host country. And there is no doubt there are reasons for such capital flows; first of all, it is natural that investors look to maximize their profits (equivalently minimizing their cost) wherever they invest so it is in accordance with the economic theory. Second, there may not be such a profitable investment environment in their own country due to high competition so that they seek out countries where competition is lacking.

MENA region is considered interestingly by foreign investors in spite of its dark reputation in terms of political stability, social problems, infrastructure and lack of advanced financial system. Another point is that since outflows of FDI come from wealthy countries thus there must be high competition for investors there and not easy to make profit or surviving sometimes may be hard and it is stated by the new growth theory that competition destroys profit. In that sense, the region has become important for multinational enterprises and they have played a major role in investing in that zone. What might be special about it is that most of these countries are known as oil producers, thus multinational companies plays a considerable role in that sector due to huge amount of capital, advanced technology and skilled labor force requirements which could not have been obtained by themselves. Therefore, FDI have been attracted to the region by providing many facilities such as tax incentives, openness, lowering tariffs on foreign investors. In this sense, FDI is the main source of bringing development factors mentioned above into this region. Finally, there is a reason that has to be taken into account, for instance, when some foreign direct investment enterprises come into some countries they are well-specialized in doing the business they are coming for and the recipient countries are not as specialized as they are as explained in comparative advantage theory and that encourages FDI to come easier and start investing there. That situation made FDI to come to those countries and set up investment activities in the zone.

1.2 OBJECTIVE AND MOTIVATION OF THE THESIS

The aim of this thesis is to come up with an investigation of the impact of FDI on the economic growth performance of the MENA region once again. Thereby, some interesting points in doing this thesis are provided, which make it if not totally different from previous studies about the role of FDI in promoting economic growth performance, but this thesis would add up some more

values on the topic compared to others. For instance, first, this one provides a bigger picture about FDI and economic growth by connecting growth theories with FDI and FDI in many different perspectives and contexts that might not have been that way mentioned with covering both empirical and theoretic sides by previous studies to the best of my knowledge. Second, the most advanced econometric techniques have been used to analyze the impact of FDI on economic growth performance on the MENA region. The third important point is that a group of Middle East and North Africa countries (Saudi Arabia , Jordan, Oman, Egypt Arab Rep, United Arab Emirates ,Bahrain, Kuwait, Israel, Turkey, Yemen) is taken as the study sample which might be quite interesting due to a lack of academic research has been done on them while other researchers have mostly taken the United States of America, developed European zone, developing countries, African, sub-Saharan and Asian countries as a sample for their studies. Finally, the sample period is up to date compared to previous studies in the MENA region.

1.3 PURPOSE OF THE THESIS

The purpose of the paper is to investigate whether FDI does have any significant degrees of impacts on the economic growth performance as it is believed by the conventional wisdom that they are strongly correlated. And also to test whether this view can be applied on MENA countries or not? Thus if it could be proven then to what extent FDI can affect economic growth performance? This paper is an empirical study that tries to answer these questions and investigate the path, MENA countries should take: either supporting multinational enterprises to invest in the region or against.

1.4 HYPOTHESIS OF THE THESIS

The hypothesis of this research is that FDI is important for economic growth in this region and has a positive and significant impact on the economic growth performance.

CHAPTER -2-

FOREIGN DIRECT INVESTMENT (FDI) AND ECONOMIC GROWTH THEORIES

2.1 FOREIGN DIRECT INVESTMENT (FDI)

Based on the explanation of balance of payments manual fifth edition published by World Bank, FDI is defined as an investment in order to obtain a long-term interest by firms investing in a foreign country's market. Furthermore, in the case of FDI, the foreign firm's aim is to achieve an influential control in the management of the corporation. The foreign entity or a number of incorporated entities follow this kind of investment is so-called the direct investor. The associated or unassociated firm, in which direct investment is set up, is mentioned as a direct investment company. FDI points out that the investor exercises a considerable degree of effect on the management of a corporation in the other country. FDI consists of three components, equity capital, reinvested earnings and intra-company loans. The 5^{th} edition of balance of payments manual of the IMF (BPM5) proposes a threshold of 10 per cent of equity ownership to be entitled an investor to be a foreign direct investor. Thus, when a direct investment company is identified, it is important to mention which capital flows between the company and entities in other countries should be specified as FDI. because the key characteristics of FDI so far argues is considered to be the lasting interest of a foreign investor in a corporation, only the form of the capital that is given by the direct investor either directly or via other corporations linked to the investor has to be classified as FDI. The forms of investment by the foreign investor which are specified as FDI can be shown as equity capital, the reinvested earnings and providing of long-

term and short-term intra-company loans (between parent and affiliate enterprises). In addition, benchmark of the OECD, refers to direct investment firm as an incorporated or unincorporated firm in which an individual foreign investor either gets 10 per cent of the ordinary shares or significant effect on a firm (unless it is confirmed that the 10 per cent ownership does not let the investor have a significant influence of the management) or possesses less than 10 per cent of the typical shares or impact on a corporation, still preserves a significant voice in management. Moreover, FDI can be operating in the financial sector or the other sectors of an economy. A significant voice in management states that direct investors can affect the management of a company and does not mean that they have complete control. The most obvious sign of FDI, which makes it different from foreign portfolio investment, is that it exercises control over a firm.[1]

2.2 FDI THEORY AND ITS IMPACT ON THE ECONOMIC GROWHT

Due to the Second World War, unfortunately, most of countries and their economies were in the world collapsed and fell down. For that reason, in that time a new revolution was started from the accumulated capital countries to broken down countries, which was the need of foreign direct investment by those countries that involved in the Second World War. Hence, most of the countries' economies were collapsed in the war period and for that reason they were in need of foreign capital to rebuild their economies once again and it is in accordance with the

[1] (Balance of Payments Manual: Fifth Edition (BPM5) (Washington, D.C., International Monetary Fund, 1993) and the Detailed Benchmark Definition of Foreign Direct Investment: Third Edition (BD3) (Paris, Organization for Economic Co-operation and Development, 1996).

conventional wisdom that FDI plays a crucial role in bringing in capital needed to achieve a level of economic growth DE Mello (1999). And that became an important and clear factor for increasing the importance of foreign firms and foreign investment during the post-war period, more particularly, FDI flows from the United States of America to European countries. And that encouraged many scholars to examine the role of multinational companies and the importance of international production. As a result of this, many theories were produced by academicians due to their huge debate and disagreements in explaining the role of multinational corporations and international capital movement. [2](FDI is explained by variety of theories in this paper)

At first, capital market theories and portfolio investments were the twin highly focused by academicians to describe the starting point of FDI. In the beginning, foreign direct investment was only a movement of international capital (Berger, 1969). Indeed, before 1950, FDI was considered as a subsection of portfolio investment. And also it was confidently believed that the most important reason for capital flows to other than that of its market was related to the gaps in interest rates among countries. Therefore, this approach argued that in the absence of uncertainties and risks, capital does have a tendency to flow to the markets where it can gain the highest possible return. However, this approach did not succeed in incorporating the basic differences between portfolio and direct investment. Hence, it is argued that direct investment involves control while portfolio investment does not consider about control. Thereby, one of the important considered hypothetical imperfections of the theory of interest rate by scholars was that it did not explain control. When interest rates rise in a foreign country market, an investor will then consider lending money to that country's markets, but that is not necessary for the investor to require control that corporation to which he or she lends (Hymer, 1976).

In the 1960s FDI was reshaped in a proper explanation. As a consequence of growing the importance of foreign enterprises and international production, scholars made efforts to combine their activities with the FDI theories and multinational corporations' performance (Rayome and Baker, 1995). Since that time, these theories have focused on different factors that affect the international capital movement. Thus, there is a considerable attention towards market forms and for that reason some approaches have examined market imperfections as the motivation for FDI flows while others have focused on oligopolistic and monopolistic characteristics. And also there are theories, which relate FDI to international trade. In the next sections these theories and approaches are provided.

2.3 THEORIES OF FDI BASED ON MARKETS

2.3.1 THEORY OF FDI BASED ON PERFECT MARKET COMPETITION

MacDougall (1958) can be considered as one of the early works about FDI and he established his model based on the assumptions of perfect competitive market. The theory was then developed in more details by Kemp (1964). So the assumption was based on a two-country sample and there is no difference in prices of capital in both countries and they are assumed to be equal to its marginal productivity. They both pointed out that when there are no capital movement barriers between investing countries and host countries then the marginal productivity of capital tends to be equal in both countries. In their work they obtained that after investment, the output of the home country dropped without any reduction in the national income of the country. This is due to the earnings that the home country gets in the long term from the host country. Theories that explain international investment in an identical way can be discovered in the works by Simpson (1962), Frankel (1965) and Caves (1971). However, the reality is that in a world where it can be

distinguished by perfect competition, FDI would not be occurred (Berger, 1969). Indeed, some pictures of defect must be existed to enable the fulfillment of direct investment. Hymer (1976) was so far said to be the first one who mentioned that in 1960, improved his theory focusing on an imperfect market structure. Moreover, it is interested to be considered that for the interwar period of the twentieth century one of the significant changes was Britain's loss of its position as the prime creditor and the United States of America showed up as the main economic and financial Empire. In fact, after the world war two, there was remarkable FDI growth in transportation and communications, which made it possible exercising control and particularly, Europe and Japan were in big needs of the United States capital to finance their economic activities and rebuild their countries. However, those countries broken down by World War two began to regain somehow their ability by 1960. As a result of that, FDI outflow from the United States to the host countries started to fall down and simultaneously, other countries started FDI in the United States instead. As evidence, The 1980s observed two significant improvements. First, the United States of America turned into a net receiver of FDI. Second, Japan turned out to become an important investing country for FDI flows to both United States and as well as Europe. However, the 1990s met the downturn in the significance of Japan as a crucial source of FDI and other countries took off. Since 2000 there has been an appreciation flow of FDI from developing countries towards developed ones not only into the other developing countries in fact.

2.3.2 FDI THEORIES BASED ON IMPERFECT MARKET STRUCTURE

2.3.2.1) IDUSTRIAL ORGANIZATION THEORY TOWARDS FDI

Hymer (1976) is considered as one of the very early works towards the study of FDI and he was the one who established a systematic approach in the direction of the study of FDI in his 1960

doctoral dissertation. Hymer in (1976) expanded the FDI theory of industrial organization. Indeed, his theory, which was said to be one of the first works in explaining international production in an imperfect market form, was supported by, Berger (1969), Knickerbocker (1973) and Caves (1974). The principle of Hymer's theory was that firms investing in foreign countries have to be aware of that those domestic firms are in some location advantages in terms of culture, language, regulations and consumer's preference and so on. What is more, foreign enterprises are also uncovered to foreign exchange risk in fact. Hence, these disadvantages have to be compensated by some other market power in order to induce international investment gainful.[2]

The starting point of market power, the firm's specific benefit in Hymer's expression or monopolistic gain in Berger's expression are in the condition of patent-protected, higher advanced technology, trademark names, marketing and managerial skills, and better and power sources of finance. By Hymer, technological advancement is plying a vital role in producing new products with new quality. Furthermore, knowledge significantly helps in improving other ability such as marketing and forwarded production operation. The profit maximization and growth principles of firms, Buckley and Casson (1976) based on the profit maximization and growth concepts they pointed out that due to market deficiencies in intermediate goods and know-how, corporations will be able to internalize external markets in order to maximize profits (equivalently reducing costs). As a result of market deficiencies, businesses can generate good profits due to their market power and getting good advantages by investing in foreign markets. This notion was supported by other scholars. For instance, Graham and Krugman (1989)

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[2] (Hymer's doctoral dissertation took the book form in 1976).

mentioned that what made European companies be able to invest in the United States markets in the past was due to technological advancement that owned by European enterprises in fact. Sodersten (1970) also stated that desire to make more profits by getting advantage of advanced technology or higher management and organizational structure were important reasons for direct investment. However, meanwhile, Robock and Simmond (1983) indicated that possessing firm-specific advantages did not only mean investing in foreign markets, but firms might take advantages through exporting or licensing process. Nevertheless, there are some factors affecting the selection between FDI and licensing or exports, such as local government strategy, structure of the local market, the response of competitors and the hazardous of investment. Thus, it is FDI that lets an enterprise make the most of its advantages to the full. Thereby, it can get all the rents given by that control. Moreover, attention to the firm due to the fact of a lack of direct control might enhance the possibility of technology leaking to competitors (Sodersten and Reed, 1994). Hence, Hymer's dissertation did not complete the full explanation towards FDI theory due to the failure that when and where FDI accurately takes place. Thus, this has been argued by some other approaches (theories), for example, Vernon's product life cycle (1966), Dunning's eclectic approach (1977, 1979) and the internalization theory by Buckley and Casson (1976).

2.3.2.2) FDI IN THE MONOPOLISTIC POWER CONTEXT

Hymer's work was further developed by Berger (1969). So he modeled his theory of FDI based on monopolistic ability. Berger pointed out that advantages can be attracted by foreign firms only in the case of market deficiency. He described profits (advantages) as might be in the context of advanced technology, management skills and patents and so on. Thus, these factors are some important features for MNEs to be encouraged to invest abroad in order to fully utilize them instead of sharing them with potential rivals in the foreign market. Therefore, as much as

they are able to get advantages of monopoly power, there more incentives will be for foreign firm to go towards direct investment. In spite of the fact that, a variety of forms of beneficiary that foreign firms can obtain over the host country was described by (Berger), but indeed, he did not succeed in describing which advantage a firm has to take as a center of attention. There is a fact that should be mentioned that a firm can utilize its monopolistic power in a foreign countries market only if the host country's policy system (rules) lets it to do that. In general, in terms of internal advantages, the host Government would not allow foreign firms to the country as a free entry so that it has to have some conditions on them to enter into the country.

2.3.2.3) FDI IN THE OLIGOPOLISTIC THEORY CONTEXT

Another theory was formulated to analyze FDI in the context of oligopolistic approach by Knickerbocker's (1973). It was in the direction of horizontal FDI and also known as Knickerbocker's theory of oligopolistic competition. Thus, this approach was formulated based on the view that FDI flows are a reflection of competitiveness between enterprises in foreign market (Hill, 2008). Knickerbocker (1973) also modeled his theory focusing on market deficiency. The operation of a foreign firm will induce its rivals to imitate that firm's steps directly. There are some incentives that have been pointed out so far as main reasons behind MNEs in order to choose a particular region or country as a position for putting in a new facility: first, as the nature of foreign businesses that they always look for additional access to host countries' markets. Second, foreign firms attempt to get the advantage of exploiting abundant factors available in those host countries. And another stimulus was mentioned as to become the third and significant incentive by Knickerbocker for choosing an investment market was that firms might want to invest in a foreign country in order to respond their competitors (Head, Ries and Mayer, 2002). It was stated by Knickerbocker that in oligopolistic market structure,

corporations in one industry tend to follow each other's steps. The notion is that, foreign firms might not have information about production costs in those countries they are presently exporting to. By following the imitative behavior that a competitor firm has already started FDI in a foreign market, the firm will follow its competitor's steps in order to avoid from being undercut (Altomonte and Pennings, 2003). Thus, Knickerbocker for applying his concept collected data from a great number of United States MNEs to compute an entry concentration index that showed the extent to which subsidiaries' entry dates were clustered over time. He suggested that oligopolistic reaction increased with the level of concentration and decreased with diversity of the product. His theory of oligopolistic reaction is exemplified by many of the world's industries, such as automotive, chemicals and electronics among others, which are dominated by a small number of very large corporations.

In the case of oligopoly industries, corporations are not many in number to perceive the effect of their activity on their competitors and vice-verse (Gwynne, 1979). Nonetheless, Knickerbocker's theory of oligopolistic response can be carried only out when uncertainty exists about the investment costs in the host country. For example, an oligopolistic firm, which is known for being a risk averse, is probably establish a business unit in a foreign market when few of its competitors invest there (Head, Ries and Mayer, 2002). Though, in the certainty case the encouragements to investment in foreign countries drops with opponent investment. Moreover, one of the shortcomings of this theory is said to be that this theory did not explain the incentive that encouraged the first firm to undertake FDI.

2.4 INTERNALIZATION THEORY AND FDI

This theory was first launched by Coase in (1937) in a national framework and then it was then further developed by Buckley and Casson in (1976). Indeed, they did not only finish prior works rather than those of them they redirected analysis by building upon the theory of the firm (Coase, 1937). Thus, considering the as an alternative organization to markets. Their theory look at MNEs as a particular case of multi-plant firm (Buckley and Casson, 1976).The theory was then developed by Hennart in (1982) and Casson in (1982). And also Hymer (1976) explains this theory in an international context. In his doctoral dissertation Hymer (1976) specified two main important determinants of FDI. One of them is the elimination of competition and then was the benefits that some foreign firms have in a particular activity.

This theory attempted to illustrate the growth of transnational companies and their motivations for achieving foreign direct investment. Buckley and Casson who developed the internalization theory pointed out that multinational companies are arranging (organizing) their internal activities in order to improve specific benefits, which then to be utilized. Dunning also considered this theory and used in the eclectic paradigm approach stating that it only indicates part of FDI flows. Hennart (1982) also developed the theory of internalization based on vertical and horizontal formation.

The theory of internationalization expands form the market failure thought. Several types of market imperfections that causes to internalization were identified by Buckley and Casson (1976).

A number of markets were identified by Buckley and Casson (1976) where they lead to internalization happen, such as, perishable agriculture products, intermediate product, which

requires a large amount of capital in manufacturing processes and raw materials geographically concentrated. By Hymer, market deficiencies for knowledge were the core of the analysis. This is how internalization assumed to be the most efficient vehicle to utilize the proprietary benefits without facing risk the monopoly it represents to the company. Thus, a number of scholars have contributed to the improvement of the theory of internalization. For instance, Horst (1971) as said to be the first one who displayed microeconomic model of the choice between investing in foreign countries and exporting from the home countries. His model of horizontally-integrated MNEs pointed out that Hymer's proposition that FDI might be a strategy to execute collusion. Horst also (1972) stated the difference for the first time between possession and location beneficiary. Aliber (1970, 1971) suggested a variety of the Hymer-Berger models focusing on the existence of various currency zones. He illustrated that firms from countries where their currencies are strong are able to loan at lower prices that makes them enable to involve in risky investments in weaker currency regions. Aliber's work was not to invent a general theory of foreign direct investment; his model can be viewed as the proposition that firms internalize market deficiencies in the capital and foreign exchange rate markets. Rugman (1980) claimed that internalization is itself a general theory of foreign direct investment. He did analyze previous contributions towards the theory of FDI to show that internalization is the key component in all existing explanations. Dunning (1991) admits that the internalization theory has the main explanation of why a firm should choose to engage in FDI. And he considers the internalization theory not as an alternative to his approach but as a very significant contribution to his theory.

2.5 EXCHANGE RATES THEORY AND FDI

Exchange rates theory was another theory, which attempted to examine FDI in the foreign exchange market context. At first, foreign exchange risk was investigated in the view of

international trade. Aliber (1970) worked on explaining MNEs through financial market structure. He meant exchange rate by financial markets and his hypothesis was based on the view that transnational companies tend to move from strong currency regions to weaker currency zones. Both Itagaki (1981) and Cushman (1985) investigated the effect of uncertainty on the FDI. Thus, Cushman pointed out that when real exchange rate increase in a foreign country then that will lead to FDI decrease made by USD. Cushman indicates that the dollar increase in the United States caused to decrease in FDI in that country.

One of the early works on FDI based on currency power was done by Aliber (1970). Thus, he introduced the approach by focusing upon the relative power of a variety of currencies. He mentioned that countries with weak currencies compared to the countries with strong currencies have a higher ability to pull FDI in order to get benefits from dissimilarity in the market capitalization price.

2.6 FDI IN PRODUCT LIFE CYCLE THEORY'S PERSPECTIVE

Product life cycle was a theory that improved by Vernon (1966) and he believed that firms take on FDI at specific stages in a product that they have produced. Vernon mentioned that new products can follow up three steps. First stage is the step that the product is produced and improved in a developed country and a huge amount of the product will be liquidated in the local markets and the rest can be exported but very limitation. Second stage is when the product gets matured that and in here the product demand grows considerably and exports tend to become important. Thus, in this stage due to huge profits then competition will occur. The last stage is that the product becomes standardized and in that stage as explained by Vernon(1966) technology transfer begins to move from home country towards low-wage cost countries and

thereby producing the earlier product will switch from developed countries to low wage countries and in this stage, exporting to developed countries due to low production cost instead.

Following Vernon several scholars have worked on formalizing the product cycle theory in a dynamic model. For example, Krugman (1979) created a model of product cycle with exogenous rate of innovation and imitation; there is continuous producing of new products by developed nations while less-developed nations follow suit to produce some of the products previously produced by the developed economies. As it was explained by Krugman that there is no a fixed pattern of trade, for instance, products that are exported by developed countries when they are for the first time introduced, but then they will become the export of the less-developed nations and the import of the developed once instead. In this direction there will be equilibrium between developed nations and less-developed nations.

Grossman and Helpman (1991) tried to develop the product cycle theory. They said that labor is necessary for both manufacturing and research and development sectors. Besides, mentioning Krugman effect that a rise in the supply of labor in an economy leads to decrease the wage rate of labor for a given portion of products produced by that economy. What is more, a rise in the labor supply would have another significant effect, it leads to grow the amount of products produced by this country due to lower costs and thus higher demand for labor in the industrialization sector will be.

2.7 THE ECLECTIC PARADIM APPROACH AND FDI

This theory was developed by Dunning (1977). And according to (Read, 2007) that was one of the most influential and extensive theories for explaining FDI in 1970s. That theory combined three different theories that explain foreign direct investment, which is also called ownership-

location-internalization theory (OLI). Thus, the theories were mixed in this approach were Ownership advantages, location and Internalization theories. Indeed, Dunning pointed out that three conditions are necessary to be achieved for a firm to engage in FDI such as, obtaining ownership benefits, Location and Internalization advantages. What was meant by ownership was that, ownership advantages are specific to the company. Therefore, having ownership advantages induce production costs to decline and thus a firm will be more able to stand against its rivals in a foreign market. Location advantages can play a very crucial role in choosing a better region, which seems to be more profitable for investment to foreign investors. A firm gets benefit from being away from market deficiencies in terms of riskiness, not providing enough information to buyers and so on. As it is stated, to a foreign firm internalization makes it possible to earn more profit by performing transactions within the firm than to turn on external markets.

The fundamental characteristics in the eclectic approach are that all conditions should be achieved for FDI happening. Dunning (1980) argued that the "OLI triad of variables that determining FDI and MNCs activities may be likened to a three-legged stool and thus each leg is supported by the other ones and also it supports the others, and the stool is only functional if the three legs are evenly balanced. What this means is that a firm having ownership advantage, and where there are internationalization gains but no locational advantage is incurred by setting up a unit in a foreign country, will very likely choose to increase its production at home and export its products abroad. In the same way, a firm having ownership and locational advantages will find it more profitable to produce abroad than to produce domestically and export its products. However, if there are no internalization gains then the firm will be better off licensing its ownership advantage to foreign firms.

Dunning's main contribution to FDI theory was integrating different theories that explain FDI in the eclectic paradigm theory and showing several factors that have effect on the FDI and MNCs businesses. For that reason, the eclectic paradigm theory became a more powerful theory for explaining FDI compared to other FDI theories.. However, this theory same as the previous ones, did not become an exception of being criticized by others and the key comment on that theory was that it contains a lot of variables that it may lose any practicability. Therefore, Dunning did not deny this fact, but he said that it was an unavoidable result that had to be achieved for putting those incentives lead to FDI occur in one general theory. The criticism on eclectic paradigm theory came by the theory of Investment Development Path (IDP), which is mentioned in the next section that presented a connection between a country's level of economic development measured in GDP per capita and its international investment statues – the net outflow of FDI per capita. It was hypothesized that when a country grows, the situation that foreign and host countries' firms face will change. As a result, this influences both inflows and outflows of FDI levels so that the economic framework will be affected by this state.

2.8 FDI IN THE INVESTMENT DEVELOPMENT PATH (IDP) CONTEXT

This theory of investment development cycle or path (IDP) is stated to be one of the latest improvements in analyzing FDI and that was another approach introduced by Dunning (1981) and then further developed by Dunning and Narula (1996). The hypothesis of this particular approach was based on the view that, when an economy expands then the state that local and foreign firms encountered will change. As a consequence, this will influence the inflows and outflow of FDI. In this situation, the country faces different stages of economy from being a net inflow receiver of Foreign Direct Investment to become a net outflow of FDI. According to this approach, investment development path FDI develops through a cycle that expresses a dynamic

relationship between a country's level of growth measured by GDP and its international investment statues, which is the outflow of FDI.

This approach is built upon five stages. Therefore, first stage, which is known as the Pre-industrialization stage is attractive neither for inflows nor for outflows of FDI due to some economic issues such as narrow domestic markets, inadequate infrastructure, a poorly educated workforce and even political and economic instability and local firms in this stage are assumed not to have any significant ownership feature. Due to the above mentioned problems MNEs more prefer reach such countries' markets through the trade process rather than FDI operation. Hence, on one hand, the government's function in this stage will be attempting to develop fundamental economic infrastructure and promote human capital resources. On the other hand, it should try to change the market and industry frames, such as, import limitation and export incentives. Stage two is an expansion of the prior stage. In here inflow of FDI starts to increase in the sense that, when an economy grows, then some specific location advantages will attract FDI inflows and due to lack of ownership interests, outflow investment statue stays low. Then, Stage three of this theory is based on the view that countries are emerging. Thus, they show a rise in the net outflow investment statue, as a result of increasing outflow FDI level and decreasing inflow FDI level. Hence, in this stage competition increases in the host country's market among investors due to ownership interests spread through the local industry. In stage four, Countries have a higher FDI outflow and a lower FDI inflow thus the net outflow of FDI remains high. In this stage home firms have ownership advantages to take part in any markets, either domestic or foreign markets. In this situation they are large enough in terms of size, geographically and manufacture. This time the government's action turns, but it still attempts to increase market efficiency more and reducing costs. Nevertheless, governments engage in planning a more serious action in helping

declining industries and decrease the economic and social effect on dropped industries. In stage five of IDP that was proposed by Dunning in (1986), putting in the most advanced countries, for instance, United States, Japan and UK, which net outflow investment statues turned out to be circulating around zero, but reflecting high levels of inflow and outflow of FDI. This is due to rising similarity between advanced countries´ economic structures in terms of the availability of production factors, technologies progressing and skilled labor force. So that the net outflow of FDI becomes irrelevant. This claims that the countries' net outflow investment will change between positive and negative statues, depending on the evolution of exchange rates and economic circle and also on the firms 'planning. As a consequence, FDI relies less and less upon the characteristics of the home and host countries, which are similar, but more on the localization strategies transnational companies.

2.9 ECONOMIC GROWTH

Economic growth is a sustained expansion of production possibilities measured as an increase in real GDP over a given period of time or might be measured in nominal terms, which include inflation. Rapid economic growth maintained over a number of years can transform a poor nation to rich one. Such have been the stories of Hong Kong, South Korea and some other Asian economies. Slow economic growth or the absence of growth can condemn a nation to devastating poverty. Such has been the fate of Sierra, Leone, Somalia, Zambia and much of the rest of Africa.

Since this research is about analyzing the connection between economic growth and foreign direct investment (FDI) so that it is seen necessary to show some models that explain economic growth in fact. Thus, in this study some models about economic growth are provided.

2.9.1 CLASSICAL GROWHT THEORY AND ECONOMIC GROWTH

Classical growth theory is based on the view that the growth of real GDP per person is temporary and when it rises above the subsistence level, a population explosion eventually brings it back to the subsistence level. Adam smith, Thomas Robert Malthus and David Ricardo, the leading economists of the late eighteenth century and early nineteenth century proposed this theory, but the view is most closely associated with the name of Malthus and is sometimes called Malthusian theory. However, the role of multinational corporations and FDI was either forgotten or ignored since as it is illustrated in the literature review chapter, FDI in many countries leads to gross domestic product (GDP) grow and not affected by the population growth as a reason to bring it back to the subsistence level in contrast population growth might be an important source for continuous economic growth in terms of managerial skills and patens and so on.

The basic classical idea is that advances in farming technology bring new types of plows and seeds that increase farm productivity; as farm productivity increases, farm production increases, thus incomes rise, and the people seem to be prospering, but will the prosperity last? Classical growth theory says it will not. Advances in technology in both agriculture and industry lead to investment in new capital, which makes labor more productive. The greater demand for labor raises and this leads to the real wage rate increase and increases employment. In contrast to the classical view, this could lead to achieve economic growth and everyone would benefit from it not to the diminishing return as classical proposed. Real GDP has increased, and the real wage rate has increased. But the classical theory did not take the role of foreign direct investment and multinational enterprises into consideration and it was only thought that when real GDP per person increases and real wage rate increases so this causes to a population explosion and to the

diminishing return situation. That is what does not make any sense in the modern world economy and those shortcomings made that theory ended.

2.9.2 POPULATION AND ECONOMIC GROWTH IN CLASSICAL CONTEXT

In classical theory when the real wage rate exceeds the subsistence real wage rate, the population grows. However, an increasing population brings diminishing return to labor. Therefore, labor productivity eventually decreases and that leads to economic depression. This dismal implication led to economics being called dismal science. The dismal implication is that no matter how much technological change occurs, real wage rates are always pushed back toward the subsistence level. But that is what not applicable in the modern economy and those ideas of classical theory have ended the classical theory in the world economy.

It has to be considered that the role of population in economic growth has become an important topic of argument among economists for a long time. One of the most effective and persuasive theories of population was introduced by Malthus (1766-1834) who believed that a large number of population was a big issue for developing countries. Furthermore, he pointed out that the food supply would increase at an arithmetic rate while population would increase at a geometric rate (Malthus, 1992). The reason for decreasing food production can be due to scarcity of land or the law of marginal diminishing returns to labors and farming land (Nagarajan, 2007). Malthus likewise that the stated that would be a constant distortion between population and available resources, and there would be a self-regulating system of population fluctuations (Caldwell, 1998).

Malthus's notion that population growth was a big problem for development was generally admitted by most people in the end of the 19th century and the beginning decades of the 20th

century (Carey, 1992). This was meant, as a result of large number of populations countries were not expected to be able to perform any economic growth. Malthusian thoughts had far involvement for the debate on the impact of population on the economic growth activity. For instance, countries with large number of populations, such as, China and India. For example, affected by Malthusian beliefs, census reports in India during the latest period of the 19th century contended that natural causes that controlled population were removed (Caldwell, 1998), due to the stable government provided by the British. This fearfulness of the population growth was reflected in the 1951 Indian census report that drew attention to the insufficiency of natural mechanisms of famine and disease (Caldwell, 1998). So that Indian politicians and officials thought that considering population growth is the main factor for Indian prosperity. A variety of researches and reports agreed with the idea government intervention for lowering population growth through family planning procedure. In the end, in 1951 India declared the creation of family planning agenda to start in 1952, encouraging Indians to become smaller families for the purpose of development and prosperity.

China tried to reduce the rate of the population growth as well. Indeed, involving Chinese government in the family planning agenda dates back to the 1950's (Riley 2003), but the most well-known policy was carried out in 1979 with the campaign of one-child is enough. At first, China wanted to have a great number of population in the sense that it will make china more powerful in terms of political issues and economic development as partly depends upon a large population for obtaining some advantages such as large workforce and large market in size that can be achieved by a large population for its economic development purposes. Nevertheless, considering that large population would be a problem for economic development and need to upgrade maternal and child health led the Chinese government to try to limit the rate of

population growth. at the beginning the chines government started with the rural families to teach about the disadvantages of big families. However, this policy was not successful that much at that time due to some problems such as a lack of medical treatment, awareness of people and insufficiency of birth control devices (Riley, 2004). The purpose of these two large countries for reducing their population growth was to develop their economies. However, in the 1970s, this notion was reviewed by others who considered population growth not as a problem for economic development rather as a significant factor economic performance (McNicoll, 1984). In (2007) Nagaraja pointed out that the classical theory did not succeed because it did not think about the influence of technology. Hence, technological progress can change the negative side of population to a positive side by improving the quality and output of the production factors and thus it turns to enhance the income growth rate. Bloom and Freeman (1988) analyzed the relationship between the size of a population and economic growth. In their paper they found that developing countries in the course of 1965-1985 could change their labor force direction from low productivity agriculture sector to high productivity industry sector.

According to the findings of Headey and Hodge (2009) that they did for examining the classical theory, which is said to be one of the latest investigation of classical theory and building up their analyses based on 42 studies and 471 estimation of population growth, applying meta-regression analysis then they found that the impact of population growth has been changed since 1980. In addition, they stated that it has to be taken account that the population growth in many developing countries reduced during this period. However, the influence of the population growth rate can be opposite in developing countries. In contrast, decreasing population growth in OECD (Organization for Economic Co-operation and Development) countries caused to slow down economic growth. Moreover, the latest improvements with India and China rising as future

economic powers have put the fervor out of those who believed that large population has negative impact on the economic growth performance. Abdul Aziz et al (2012) pointed this out the rate of population growth and FDI level must be related to each other since FDI and economic development are significantly connected. Hence, accepting the notion that population growth rate and FDI level are positively linked. What is more, they mentioned that one of the factors that can influence the transnational firm's decision making is the population structure of a country to be considered about going to a foreign country to invest. Therefore, the FDI place In today's economy has to be taken into account could and for that reason the population size cannot be neglected by transnational firms as they try to rise their activities, of course, for maximizing profits and for that purpose foreign markets will be at the center of their attention . As a result, countries with huge number of population such as china and India will be able to draw considerable levels of FDI into their markets. In 2005, India was predicted as the largest purchaser market opportunity and drew the highest FDI confidence index. India's consumption increased by 21.38% to $11 billion in 2006 (Kilgore, Joseph, & Metersky 2007).

In addition, due to huge number of population both China and India have very large markets that can be helpful for promoting their economies even in case they could not rely upon foreign markets due to trade barriers or limitations their markets are large enough to depend upon.

Winters and Yusuf (2007) mentioned the point that in around half a century, China and India might be the most enormous economies of the world due to their considerable workforce and developed skills base. Moreover, it has to be taken into account that these countries are not only considered as future massive industrial, but they were past huge industrial as well. Such a story will not be completely unknown to these countries and might just be a repetition of the history.

As lately as 1820, China and India together accounted for 50% of the world's GDP (Gupta & Wang, 2009).

2.9.3 THE GROWTH OF POPULATION AND FDI

Population is considered to be one of the most effective determinants of FDI in the host country's market. However, it was not taken into consideration by the classical theory on the inflow of FDI. As the above given examples of China and India they indicate the benefits of a large number of population. One of the positive signs of existence a huge number of populations is to liquidate those goods and services are produced by MNEs, it means that accessing a large enough market for foreign firm' activities. Another positive point of a large population in is giving an enormous workforce, in another meaning, easier access to skilled laborer. Since there is tremendous entry to the higher education process in those countries thus only those who have required level of ability are accepted.

Aside from the quality of human capital resources, but the number of people who graduate in a variety of institutions in those countries is also great. China and India respectively provide five and three million graduates in almost each year (Gupta & Wang, 2009). Moreover, the demand for well-skilled professionals is still greater than supplied quantities. Indeed, the cost of skilled professionals for foreign investors is much lesser compared to the home country professionals.

2.9.4 NEW CLASSICAL THEORY AND ECONOMIC GROWTH

Neoclassical growth theory is the proposition that real GDP per person grows because technological change induces a level of saving and investment that makes capital per hour of labor grow. Growth ends only if technological change stops while classical theory stated that no

matter how much technological change occurs, real wage rates are always pushed back toward the subsistence level.

Neoclassical and endogenous growth theories can be considered as a theoretical framework for testing the hypothesis that FDI can promote economic growth where growth factors are not sufficient those are required for development. Based on those theories FDI can enhance the rate of economic growth performance in an economy where capital is insufficient to finance investment projects as a factor of development by increasing magnitude and also efficiency of physical investment (Helpman 1991). And also FDI brings in long-term capital stock with advanced technologies, talent professionals and marketing capabilities, which lead to promote economic growth performance by creating jobs, training labor force and spreading out high technologies (Asiedu 2002). FDI also can be helpful for gathering economies through industry piling and networking, and reducing costs for all producers in the market (Krugman 1991).

Neoclassical growth model assumes that developing nations that do not have a sufficient level of capital stock might have higher marginal rate of returns and economic growth rates if needed capital stock is injected into those countries. In other words, in an economy where capital is shortage, the marginal return of investment is moved up in the short-run when additional capital is brought into the county in the form of long-term investment and that can be achieved mostly by Multinational corporations and FDI and thus when productivity increases that leads to economic growth in the long-run. Furthermore, neoclassical economists also consider (FDI) as more reliable and less floatable sources of capital for the developing economies that can increase economic growth rate. The new endogenous growth theories further assumed that the increased efficiency of investment brought by FDI comes up with a comparative advantage to the capital scarce economies to approach or converge with richer economies in the long-term. More

precisely, the endogenous growth theories claim that the long-run growth of an economy is not only affected by the amount of physical investment but also influenced by the efficiency of utilizing investment. Therefore, endogenous growth model focuses on incorporating organizational, managerial, technical and human skills, in the endogenous growth model, further the long-run economic growth is considered as a function of technological progress deriving from technology transfers and knowledge spillovers (Grossman and Helpman 1991, Romer 1994). Hence, FDI channels much needed capital for investment and provide a reasonable environment to capital formation.

Technological change has a strong and significant effect on the economic growth and that is brought into host countries via international trade and foreign direct investment barrel and pain (1997).

In neoclassical growth theory, the rate of technological change influences greatly the economic growth performance.

2.9.5 THE SOLOW GROTH MODEL

The Solow model is the starting point for almost all analysis of growth. Even models that depart fundamentally from Solow's are often best understood through comparison with the Solow model. Thus understanding the model is essential to understanding theories of growth.

Over the past few centuries, standards of living in industrialized countries have reached levels almost unimaginable to our ancestors. Although comparison are difficult, the best available evidence suggests that average real incomes today in the united states and western Europe are between 10 and 30 times larger than a century ago, and between 50 and 300 times larger than two centuries ago.

The principal conclusion of the Solow model is that the accumulation of physical capital cannot account for either the vast growth over time in output per person or the vast geographic differences in output per person. Specifically, suppose that capital accumulation affects output through the conventional channel that capital makes a direct contribution to production, for which it is paid its marginal product. Then the Solow model implies that the differences in real incomes that we are trying to understand are far too large to be accounted for by differences in capital inputs. The model treats other potential sources of differences in real incomes as either exogenous or thus not explained by the model (in the case of technological progress, for example) or absent altogether (in the case of positive externalities from capital, for example). Thus to address the central question of growth theory, we must move beyond the Solow model. Findlay (1978) touched and developed Solow's model and assumed that the growth rate of technology diffusion is an increasing function of FDI. By distinguishing between inputs into foreign capital (a developed country) and domestic capital (a developing country), he states that when foreign capital increases that leads to domestic capital increase.[3]

[3] (Madison (2003) reports and discusses basic data on average real incomes over modern history).

2.9.6 TARGET RATE OF RETURN, SAVING AND ITS IMPACT ON INVESTMENT

The key assumption in neoclassical growth theory concerns with saving, other things remain the same, the higher the real interest rate, the greater is the amount that people save and thus the higher the investment level will be. Gross and Trevino (1996) stated that a relatively high interest rate in a host country does have a positive influence on FDI inflow. However, the impact of high interest rate could be negative on foreign investors if they depend on the host country's capital market for raising FDI fund. In contrast, according to the research done by Anna et al (2011) about the impact of interest rates on foreign direct investment for Zimbabwean economy (February 2009-June 2011), they found the result that interest rates do not have any effect on the foreign direct investment (FDI) according to the Zimbabwean economy.

The fact is that when investment rises, that might lead to achieve economic growth. But in the long run, saving is highly responsive to the real interest rate with a target rate of return. If the real interest rate exceeds the target rate of return, saving is sufficient to make capital per hour of labor grow. If the target rate of return exceeds the real interest rate, saving is not sufficient to maintain the current level of capital per hour of labor, so capital per hour of labor shrinks so that investment decreases and that causes to economic depression. And if the real interest rate equals a target rate of return, saving is just sufficient to maintain the quantity of capital per hour of labor at its current level. In that situation, there is neither economic growth nor economic depression.

According to neoclassical growth theory, the prosperity will persist because there is no classical population growth to induce the wage rate to fall. But growth will stop if only technology stops advancing.

2.9.7 A PROBLEM WITH NEWCLASSICL GROWHT THEORY AND THE CASE OF FDI

In neoclassical growth theory all economies have access to the same technologies and capital is free to roam the globe, seeking the highest available real interest rate. Given these facts, neoclassical growth theory implies that growth rates and income levels per person around the globe will converge. While there is some sign of convergence among the rich and convergence is slow and it does not appear to be imminent for all countries. In fact, what is seen in the neoclassical growth theory is concerned with technology and interest rate rather than the other factors. And what has to be considered about neoclassical growth theory is, if all economies have ability to access the same technological advances and then why there are developed, developing and less developing countries. Indeed, all economies cannot have access to the same technological advancement, but it could be reached only through the foreign direct investment process, multinational enterprises (MNEs) and international trade otherwise it cannot be achieved since technological change is innovation and it is the property right of that nation so that every nation will not be able to obtain. if every nation could reach the same level of technological progress which is assumed to be one of the crucial factors for economic growth as it is indicated in the neoclassical growth theory, then why we have different kinds of economies in the world, but what makes every economy able to access to the new technology change that should be via multinational corporations (MNCs) through international trade and foreign direct investment operation. Domestic investment might enhance economic growth but advanced technology is usually acquired through FDI (Yao & Wei, 2007). That is how countries with no or less technological progress can get new technological change and obtain economic growth by the

help of foreign investment enterprises (FIEs) and capital movement is a costly process and not free to globe as neoclassical economists believed so.

2.9.8 HOW INVESTMENT IS FINANCED

There is no doubt that investment is the core of economic growth in every economy and it is obvious that when in any economy the amount of investment increases then the rate of the economic growth rises and on the other hand, economic growth falls when the amount of investment drops. Here in this part we would like to illustrate the way of investment is financed. (Parkin, 2008)

Investment adds to the stock of capital and is one of the determinants of the rate at which production grows. Investment is financed from three sources:

i) Private saving

ii) Government budget surplus

iii) Borrowing from the rest of the world

Households' income is spent on consumption, saved or paid in tax. So income is equal to the sum of consumption expenditure, saving and taxes.

$$Y = C + S + T$$

But you have seen that Y equals the sum of the aggregate expenditure:

$$Y = C + I + G + X - M$$

By using these two equations, you can see that.

$$I + G + X – M = S + T.$$

Now subtract G and X from both sides of the last equation and add M to both sides to obtain

$$I = S + (T – G) + (M – X).$$

In this equation (T – G) is the government budget surplus and (M – X) is borrowing from the rest of the world. If net taxes (T) exceed government expenditure (G), the government budget surplus contributes toward paying for investment. But if net taxes are less than government expenditure, the government budget deficit must be financed with funds that could otherwise have financed investment. For example, if U.S imports (M) exceed U.S exports (X), then U.S borrows an amount equal to (M-X) from the rest of the world. So part of the rest of the world's saving finances investment in the United States. But if U.S exports more than it imports, thus it can lend an amount equal to (X-M) to the rest of the world. So part of U.S. saving finances investment in other countries.

The sum of private saving, S, and government saving (T – G), is called national saving. So national saving and foreign borrowing finance investment.

For instance, in 2006, investment of $2,270 billion and a government deficit (federal, state and local combined) of $313billion were financed by private saving of $ 1,799 billion and borrowing from the rest of the world of $784billion. (Parkin, 2008).

2.9.9 THE IMPACT OF A CHANGE IN THE SAVING RATE ON INVESTMENT

The parameter of the Solow model that policy is most likely to affect is the saving rate. The division of the government's purchase between consumption and investment goods, the division of its revenue between taxes and borrowing, and its tax treatments of saving and investment are

all likely to affect the fraction of output that is invested. Thus it is natural to investigate the effects of a change in the saving rate.

2.9.10 SAVING, INVESTMENT AND FDI

Consider a world where every country is described by the Solow model and where all countries have the same amount of capital per unit of effective labor. Now suppose that the saving rate in one country rises. If all the additional saving is invested domestically, the marginal product of capital in that country falls below that in other countries. The country's residents therefore have incentives to invest abroad. Thus if there are no impediments to capital flows, not all the additional saving is invested domestically. Instead, the investment resulting from the increased saving is spread uniformly over the whole world; the fact that the rise in saving occurred in one country has no special effect on investment there. Thus in the absence of barriers to capital movements, there is no reason to expect countries with high saving to also have high investment. In that situation multinational investment corporations (MICs) move abroad to utilize and invest their capital so this leads to the investing country achieve economic growth and thus both countries benefit from that activity.

Feldstein and Horioka (1980) examined the relationship between saving and investment rates. They found the result that saving and investment rates are strongly correlated. Specifically, Feldstein and Horioka run a cross country regression for 21 industrialized countries of the average share of investment in GDP during the period 1960-1974 on a constant and the average share of saving in GDP over the same period. They found that rather than there being no relation between saving and investment, there is an almost one-to-one relation. There are various possible explanations for Feldstein and Horioka findings. One possibility, suggested by Feldstein and

Horioka is that there are significant barriers to capital mobility. In this case, differences in saving and investment across countries would be associated with rate-of-return differences. There is little evidence of such rate-return differences however.

Another possibility is that there are underlying variables that affect both saving and investment. For example, high tax rates can reduce both saving and investment (Barro and Sala-i-Martin, 1995). Similarly, countries whose citizens have low discount rates, and thus high saving rates, may provide favorable investment climates in ways other than the high saving; for example they may limit workers' ability to form strong unions.

Finally, the strong association between saving and investment can arise from government policies that offset forces that would otherwise make saving and investments differ. Governments may be averse to large gaps between investment and saving- after all a large gap must be associated with a large trade deficit (if investment exceeds saving) or a large trade surplus (if saving exceeds investment). If economic forces otherwise give rise to a large imbalance between saving and investment, the government may choose to adjust its own saving behavior or its tax treatment of saving or investment to bring them into rough balance. Helliwell (1998) finds that the saving and investment correlation is much weaker if we look across regions within a country rather than cross countries. This is certainly consistent with the hypothesis that national governments take steps to prevent large imbalances between aggregate saving and investment, but such imbalances can increase in the absence of government intervention.

In general, the strong relationship between saving and investment differs dramatically from the predictions of a natural baseline model. Most likely, however, this differences reflects not major

departures from the baseline (such as large barriers to capital mobility), but something less fundamental (such as underlying forces affecting both saving and investment. (Romer, 2005).

New growth theory overcoming this shortcoming of neoclassical growth theory, it also explains what determines the rate of technological change.

2.10 NEW GROWHT THOERY AND FDI

New growth theory holds that real GDP per person grows because of the choices people make in the pursuit of profit and that growth can persist indefinitely. Paul Romer of Stanford University developed this theory during the 1980s, but the ideas go back to the work by Joseph Schumpeter during the 1930s and 1940s.

The theory begins with two facts about market economies:

- Discoveries result from choices.
- Discoveries bring profit, and competition destroys profit.

Discoveries and choices: When people discover a new product or technique, they think of themselves as being lucky. They are right. But the pace at which new discoveries are made and at which technology advances is not determined by chance. It depends on how many people are looking for a new technology and how intensively they are looking. When a nation discovers a new product or technology advances so some other nations will be in need of getting benefit from those developments since in economy it is very important to attempt for minimizing costs and increasing profits. And for doing that there are some ways to reach that improvements or developments either through international trade or through foreign direct investment they will be able to benefit from that discoveries and changes. Apparently, foreign direct investment plays a

crucial role in that situation for both countries and it becomes an important source of economic growth in the home country where a new product and technological changes are found and in the host country where these discoveries are moved to through multinational corporations (MNEs) and FDI.

Discoveries and profit: profit is the spur to technological change. The forces of competition squeeze profits, so to increase profit, people constantly seek either lower cost methods of production or new and better products for which people are willing to pay a higher price. Inventors can maintain a profit for several years by taking out a patent or a copyright. But eventually, a new discovery is copied and profits disappear.

CHAPTER -3-

LITERATURE REVIEW

In spite of finding various results about the effect of foreign direct investment (FDI) on the economic growth performance, yet huge efforts is made to attract FDI inflow by both developed and developing economies in fact.

Nowadays in the economic society there is a tremendous consideration about the role of FDI in every economy from developed nations to the poor ones since economic growth linked to raising standards of living and it is related to the economic development so that economic development linked to the development of human capital, technology progress, economic infrastructure and political stability. That is why foreign direct investment has pushed many scholars and economists to be interested in doing researches about the role of FDI in contributing to economic growth in both developing and developed countries. As many papers have been done and published for the last few decades and due to differences among countries in terms of the degree of openness towards the international economy, liberalizing, globalization, macroeconomic factors (political stability, inflation, foreign exchange rate, the rate of unemployment and interest rate and so on). Therefore, different results are shown with different economies so that some researchers have investigated positive relationship between foreign direct investment and economic growth performance while, others did found negative connection or no connection between these two variables or ambiguous results. In this paper, several studies' findings previously done by some economists and researchers are shown.

We are starting by showing the findings of Borensztein et al (1998). They examined the role of (FDI) in promoting economic growth in the case of developed countries and 69 developing countries data were picked up for their test sample and the variables were initial GDP, schooling, government consumption, black market premium, political rights, wars, financial depth and inflation rate. In their paper what they found was that FDI is a very important source for the transfer of new technology and it contributes more to economic growth than domestic investment does. However, FDI can play an important role in growing the economy of developing countries only when there is a minimum threshold stock of human capital in recipient countries. Some other scholars that did research about FDI and economic growth reached the same conclusion as Borensztein et al. (1998) such as Bengoa and Sanchez-Robles (2003) and Li and Liu (2005).

More precisely, De Mello (1999) stated that FDI affects the economic growth rate in recipient countries through two channels. One of them is by increasing the capital and investment stocks, and the other one is by raising the rate of technological change. It has to be noted that growth theories claim that, between capital and technology, only the latter can produce the perpetual growth. Due to the above reasons, developing countries must benefit from FDI inflows, particularly from technological spillover as it could increase the nation's productive capability (Santipitaksakul 2011).

Steve (2013) investigated the impact of foreign direct investment (FDI) on economic growth in Africa and presents estimations based on panel data of 50 African countries for the period 1980 – 2009. The variables picked up were the secondary gross school enrollment and domestic investment, population size and GDP per capita and the system generalized method of moment (SYS-GMM) was performed as their econometric technique it was found that FDI inflows did have a strong impact on economic growth in the African region for the time period that they

took. It was also found that while the low level of human resources did not limit the impact of FDI, and that the impact of FDI on economic growth was negative during the period from 1980to 1994, but it was positive during the period from 1995 to 2009.

Another study done by Jyun-Yi et al (2008) for analyzing the impact of FDI on the economic growth using variables such as initial GDP, human capital and the volume of trade and they took 62 countries' data for the period 1975-2000. They found that FDI alone cannot play an obvious role in economic growth if there is not a good level of initial GDP and human capital, but they found that foreign direct investment can play a key role in contributing to economic growth when a better level of initial GDP and human capital is available in recipient countries. That is similar to the findings of Borensztein et al (1998).

Marta Bengoa et al (2003) examined the connection between economic freedom, foreign direct investment (FDI) and economic growth. They used panel data analysis for 18 Latin American countries from 1970 to 1999. In their study, they achieved that economic freedom is a good incentive to encourage FDI inflows and they found that foreign direct investment has a positive relationship with economic growth in the recipient countries. However, the recipient countries require certain level of human capital, economic stability and liberalized markets to get benefit from long-term capital flows and that is what most scholars are in line with the point of having a certain level of variables such us human capital and economic stability. For example, Jyun-Yi et al (2008) and Borensztein et al (1998).

According to the study done by Har et al (2008) to observe the role of foreign direct investment in developing economy in Malaysia collecting data from 1970 to 2005. In their study, they used ordinary least squares (OLS) to get the impact of FDI on the Malaysian economic growth and the

results that they obtained in their paper indicating that foreign direct investment had a very crucial role in improving economic growth in Malaysia and they found a positive and strong linkage between FDI and economic growth, but what is seen in that paper is quite strange that is the lack of econometric techniques as it is seen they just used ordinary least square (OLS) and that is not sufficient to indicate the real case.

Another study done by Behmane (2012) to test the conventional belief that FDI leads to economic growth. The paper was done on southern Asian region for the period 1999-2009 using panel data and the result found was that human capital, economic infrastructure and capital formation have positive and significant effect on the economic growth which is supported by (Gary Becker, 2014). He states that human capital is the key factor for the economic growth in every economy. However population, technology gap and inflation cause economic growth to decrease.

The findings of the study done by Durnel (2012) on Turkish economy for the period (2000 – 2009) showed that foreign direct investment has a positive and significant impact on Turkish economy and that is FDI leads gross domestic product to increase and grow. but we found it quite interesting to mention papers done about the role of FDI in Turkish economy for some reason, for example Turkish economy is growing and it has got a very large market in the middle east so that is what foreign investors assumed to seek out and showing the case whether or not it does have a role in developing that economy. But what is found strange and interesting to mention is that there are two papers done for almost the same time period on the role of FDI in developing Turkish economy and one of them indicated a positive relationship between FDI and economic growth in Turkey which is mentioned above and the other one did not find any significant relationship between FDI and economic growth neither in the short run nor in the

long run which is right here being showed. Temiz et al. in (2012) investigated the relationship between FDI inflows by multinational corporations (MNCs) and economic growth for Turkish economy for the period 2000-2012 in order to prove the belief that FDI plays a very crucial role in making economic growth in the host country. The econometric models used in that study were (Johansen cointegration test, Granger causality and OLS) so they could not find any significant relationship between foreign direct investment (FDI) and GDP growth (economic growth) in Turkey both in the short and long run.

Another study about FDI and economic growth has been done by Anitha (2014) for examining the relationship between foreign direct investment and economic growth so, India was chosen for the duration of post liberalization from 2010 to 2014 and for the test Autoregressive Integrated moving Average (ARIMA) was used. What was found in the paper was that FDI has in overall a role in developing the economy of India. Based on the result found by Choe (2003) for analyzing the causal relationship between economic growth and foreign direct investment taking 80 countries for the period 1971-1995. They applied a panel VAR model as an econometric technique and they demonstrated that FDI Granger-causes economic growth and vice-verse. However, the effects are more obvious from growth to FDI than from FDI to growth. On this basis, Sabina and Noormamode (2008) examined the impact of FDI on the economic growth so they chose a panel of 58 countries from 1980 to 2004 and the considered variables were the FDI to GDP ratio and real GDP per capita, plus a set of macro and socio-economic indicators. A panel VAR model was used, but they did not obtain sufficient evidence of the growth-effects of FDI, rather they stated that the factors cause GDP and FDI may vary from country to country according to their income levels. For testing the role of FDI in developing economy in developing countries and developed countries there is a paper done by Johnson in (2006),

applying cross-section and panel data analysis on a data set of 90 economies for the period 1980-2002.Which shows that FDI inflows leads economic growth to increase in developing economies, but not in developed economies. And he also did another study about the FDI flows and trade in eight high performing East Asian economies and they focused on the development and importance of FDI and trade for the region. For indicating the relationship between FDI and host country exports so taking the data from 1980 to 2003 and applying time series regression for individual economies and also performing panel data estimation demonstrated that FDI inflows do have significant and positive effect on the host country export means that foreign direct investment does affect economic growth significantly. The study done by Piotr Misztal (2010) about foreign direct investment as a factor for economic growth in Romania over the period 2000-2009 based on the analysis on the role of foreign direct investment in promoting economic growth in Romania they could find a positive linear relationship between FDI and economic growth and based on the VAR model estimations, they obtain the results showing that FDI inflows play a very crucial role in developing economy in Romania for the period of 2000-2009. According to the findings of the paper which was done by Albert Wijeweera and et al (2010) for analyzing the linkage between FDI inflows and economic growth using a stochastic frontier analysis and applying panel data including 45 countries for the period 1997 – 2004 so what they achieved in their study was that FDI inflows do have a positive influence on economic growth in the existing of a highly skilled labor, but FDI by itself does not exert efficiency gains and what is more, they argued that by merely increasing FDI inflows a country cannot promote its efficiency because a given nation cannot absorb the advanced technology accompanying FDI unless there is a highly well-trained labor force in that country and the higher degree of trade openness leads economic growth to increase by means of efficiency gains. Katerina et al (2004) examined the

influence of FDI on the economic growth for transition economies applying Bayesian analysis and then they declared that foreign direct investment does not show any significant effect on the economic growth for transition economies. Li and Liu (2005) did a study to exhibit whether FDI affects economic growth in a positive way or not so that they did apply a panel data for 84 countries from 1970 to 1999 and both single equation and simultaneous equation were used to investigate the relationship so they found a significant endogenous relationship between FDI and economic growth from the mid-1980s onwards. They stated that FDI makes growth in the host countries; furthermore, it has effect indirectly on economic growth via its interaction terms. The interaction of FDI with human capital does have a robust positive impact on economic growth in developing countries, while FDI with technological gap does have a strong negative effect on it which is in accordance with the findings of the study done by Behname (2012). According to the findings of Khater (2014) to investigate the direction between foreign direct investment, openness and economic growth in Sudan for the period 1972 – 2001. For their work, they used Granger –causality and Johansen co-integration techniques to analyze the relationship between these variables and they did use autoregressive distributed lag (ARDL) approach to co-integration analysis which was proposed by Pesaran and Shin (1999) to estimate both the short run and long run relationship between the above mentioned variables. While applying co-integration they did get the result of having a long-run equilibrium relationship between foreign direct investment, openness and economic growth so that they demonstrated that foreign direct investment do have an independent effect on economic growth so the causality running from foreign direct investment to economic growth. Showing the results that were found by Bang Vu (2007) which was a study on the sectoral analysis of foreign direct investment and growth in the developed countries and a group of six country members of OECD was chosen for that purpose.

It was achieved that FDI has a significant and positive impact on economic growth both directly or through its interaction with labor. However, that impact was not achieved equally across countries and sectors. In some sectors, there was no evidence that FDI makes economic growth.

Sumei et al. (2008) did a study about the relationship between foreign direct investment, domestic investment and economic growth about the economy of china in their study they used time series analysis to find the relationship between foreign direct investment and economic growth so in their paper they found that foreign direct investment has played a crucial role in Chinese economy and there has been a complementary relationship between FDI and domestic investment thus, the higher the FDI level in the country, the greater the DI will be so that the greater the domestic investment the higher the economic growth is, they declared that foreign direct investment leads to economic growth significantly. In addition, as it is proven by some researches china is one of the fastest countries in terms of economic growth and it has encouraged foreign investors to invest their capital in china. And it is counted as the largest one to pull FDI inflows amongst less-developed countries for about the last three decades. In their paper they found that foreign direct investment has played a crucial role in Chinese economy and there has been a complementary relationship between FDI and domestic investment thus, the higher the FDI level in the country, the greater the DI will be so that the greater the domestic investment the higher the economic growth is, they declared that foreign direct investment leads to economic growth significantly.

Based on Adams' analyzing about the impact of foreign direct investment (FDI) and domestic investment on the economic growth in sub-Saharan countries for the period 1990-2003. (OLS) and fixed effects estimations were performed to obtain the result of their test and the main variables were domestic investment (DI) share in GDP, foreign direct investment (FDI) share in

GDP, real GDP growth rate, rate of inflation, government consumption, trade share in GDP, political risk, secondary school enrollment and landlocked. In that study it was investigated that domestic investment is positive and significantly related to economic growth in using both estimations (OLS) and fixed effects, but foreign direct investment (FDI) was found positive and significant only in the OLS estimation and it was also found that FDI has an initial negative effect on domestic investment (DI) and subsequent positive effect in later periods for the panel of countries studied.

Gohou et al. (2011) re-examined the connection between economic growth and foreign direct investment (FDI) inflows and welfare (or poverty reduction) in Africa. Using FDI net inflows per capita and the United Nations Development Program's Human Development Index as the principal variables, based on their findings they stated that there is a positive and robust significant linkage between foreign direct investment (FDI) net inflows and poverty reduction in Africa, but they reached significant differences among African regions. They also achieved that FDI does have a greater impact on welfare on poorer countries than it does have on wealthier countries. For instance, it was found that while the relationship between FDI and poverty reduction is positive and significant for economic communities in Central and East Africa, it is non-significant in Northern and Southern Africa. Furthermore, the relationship was found to be ambiguous in West Africa.

On the other hand, as it is apparent, there is a debate among scholars and economists about the role and impact of FDI on economic growth, thus some of them believe that as mentioned above FDI leaves a positive sign on economic growth wherever it goes toward while other believe the other way around, for example, Laura Alfaro (2003) pointed out that the benefits of FDI would vary from sector to sector by searching the effects of foreign direct investment on growth in

various sectors such us (primary, manufacturing and service sectors). For empirical analysis, cross-country data were used from 1981 to 1999 and based on their findings they stated that total FDI does exert an ambiguous effect on growth so what found was that foreign direct investment flows into different sectors of the economy would show unlike effects on economic growth. To be more obvious, FDI inflows into the primary sector tend to have a negative effect on the economic growth, whereas FDI inflows in manufacturing sector shows a positive impact on growth and for the service sector the result was ambiguous.

Pugel (2007) states that FDI enhances technological spillover benefits, widens the scope of international competition and strengthens the supply side capabilities of a host country for producing and selling goods and services, which lead to higher economic growth.

For instance, Abdul Khaliq et al. (2007) analyzed the impact of foreign direct investment on the economic growth for Indonesia economy from 1997 to 2006 and they took several sectors to investigate the effect of FDI and its role in economic growth. In their study they could obtain a positive impact at aggregate level, but for the sectoral level what they did find was different across sectors for example, they investigated a strong negative relationship between FDI and mining sector. And among the sectors that were chosen few of them provided positive impact FDI on economic growth. Azman-Saini et al. (2009) examined the linkage between FDI and financial market developments and their impact on growth using data from 91 countries taking the period from 1975–2005 to check whether or not there is a relationship between foreign direct investment, output growth and financial markets so they obtained that FDI does have a positive impact on the economic growth only when a threshold of financial market development is available in the host countries otherwise it will not play a positive role in growing economy.

Basem et al (2011) did a study about the connection between FDI and (GDP) as a measure of growth for the economy of Jordan taking time series data for the period 1990-2009. They used co-integration and error correction mechanism to observe the relationship between the two variables. In their paper, they reached the result that foreign direct investment does not make growth in Jordan, in other words, FDI does not have effect on economic growth. Furthermore, it was found that, that is economic growth (GDP) leading FDI to become growing. Another study done by Durham to analyze the influence of foreign direct investment (FDI), equity foreign portfolio investment (EFPI) on the economic growth taking 80 countries' data for the period from 1979 to 1998. They found the result that lagged FDI and equity foreign portfolio do not have direct, unmitigated positive impacts on growth, but some of the data are consistent with the belief that the impacts of FDI and EFPI are contingent on the 'absorptive capacity' of host countries, with particular regarding to financial or institutional development. Moreover, extreme bound analysis (EBA) of significant results indicates that the estimates are strong comparing to other empirical studies on growth. According to the findings of the paper which was done by Belloumi (2012) to investigate the relationship between foreign direct investment (FDI), trade openness and economic growth. The paper analyzed this matter for Tunisia by performing the bounds testing (ARDL) approach to cointegration for the period from 1970 to 2008 and choosing those variables GDP per capita, trade, labor and FDI. The results showed that there is no significant Granger causality from FDI to economic growth, from economic growth to FDI, from trade to economic growth and from economic growth to trade in the short run, but the bounds tests suggest that the variables of interest are bound together in the long run when foreign direct investment is the dependent variable. The associated equilibrium correction is also significant, confirming the existence of a long-run relationship.

CHAPTER -4-

DATA AND METHODOLOGY

4.1 DATA

In this study, we focus on the impact of FDI on the economic growth using (GDP) as a measurement for growth, LnGDP constant, FDI, exports, unemployment, urbanization, population, Arable land, natural resources and gross capital formation. The sample of this thesis includes 10 countries in the Middle East and North Africa and the rest is excluded because of incompatibility data. For the time period from 2001 to 2012 has been chosen. For doing this, we have considered percentage changes in GDP as a common indicator of economic growth, and FDI, exports and unemployment measured by GDP. The data for the countries have been taken out from the world development indicator that published by World Bank.

4.2 ECONOMETIRC TECHNIQUES

In this econometric part we cover some methods for estimating our sample effects of FDI on the economic growth performance such as panel data models that are at least as common as first differencing. Although these methods are harder to describe and implement, several econometric packages support them. And also using Hausman test to see which model is more appropriate.

In Section 4.3, we discuss the fixed effects estimator, which like first differencing uses a transformation to remove the unobserved effect a_i prior to estimation. Any time constant explanatory variables are removed along witha_i.

In Section 4.4, we argue the random effects estimator which is attractive when we think the unobserved effect is uncorrelated with all the explanatory variables. Estimation of random effects models by generalized least squares is fairly easy and is routinely done by many econometrics packages.

The regression equation of this thesis is formulated as follows.

$$\boldsymbol{y_{it}= \alpha+ \beta_1(LnGDP)+\beta_2(FDI)+ \beta_2(export)+\beta_3(unemploy)+\beta_4(uran)+\beta_5(popgrowth)+\beta_6(arable)+\beta_7(natural) +\beta_9(gross\ capital)+\beta_{10}(dummy\ variable)}$$

Where

$y_{it=}\ GDP\ growth$

LnGDP refers to GDP (constant 2005 US$)

And FDI is foreign direct investment, net inflows (% of GDP).

4.3 FIXED EFFECTS ESTIMATION

First differencing is just one of the many ways to eliminate the fixed effect, a_i. An alternative method, which works better under certain assumptions, is called the fixed effects transformation. To see what this method involves, we consider a model with a single explanatory variable: for each i,

$$y_{it} = \beta_{1x_{it}} + a_i + u_{it,} \qquad t = 1, 2 \ldots T \qquad (4.1)$$

In random effects equation, which is the equation 4.2 an intercept is included assuming that the unobserved effect a_i has a zero mean. In other words, the unobserved effect is not correlated to any of the explanatory variables.

4.4 RANDOM EFFECTS MODELS

We begin with the same unobserved effects model as before,

$$y_{it} = \beta_0 + \beta_1 x_{it1} + \cdots + \beta_k x_{itk} + a_i + u_{it,} \qquad (4.2)$$

Where we explicitly include an intercept so that we can make the assumption that the unobserved effect,ai, has zero mean (without loss of generality). We would usually allow for time dummies among the explanatory variables as well. In using fixed effects or first differencing, the main goal for using fixed effect model is to eliminate a_i because it is thought to be correlated with one or more of the x_{itj}. But suppose we think a_i is uncorrelated with each explanatory variable in all time periods. Then, using a transformation to eliminate a_i results in inefficient estimators that is why we use random effect model in the next step.

Equation (4.2) becomes a random effects model when we assume that the unobserved effect a_i is uncorrelated with each explanatory variable:

$$\text{Cov}\,(x_{itj,}a_i) = 0, \quad t = 1,2 \ldots, T;\ j = 1, 2, \ldots, k. \qquad (4.3)$$

In fact, the ideal random effects assumptions include all of the fixed effects assumptions plus the additional requirement that a_i is independent of all explanatory variables in all time periods. If we think the unobserved effect a_i is correlated with any explanatory variables, we should use first differencing or fixed effects.

4.5 FIXED EFFECTS WIHT UNBALANCED PANELS

Some panel data sets, especially on individuals or countries have missing years for at least some cross-sectional units in the sample. In this case, we call the data set an unbalanced panel.

The more difficult issue with an unbalanced panel is determining why the panel is unbalanced. With cities and states, for example, data on key variables are sometimes missing for certain years. Provided the reason we have missing data for some (i) is not correlated with the idiosyncratic errors,u_{it}, the unbalanced panel causes no problems. When we have data on undeveloped countries or less developed countries things are trickier.

4.6 ASSUMPTIONS FOR FIXED AND RANDOM EFFECTS

In this section, we provide statements of the assumptions for fixed and random effects estimation.

4.6.1 ASSUMPTIONS FOR FIXED EFFECTS

1- For each i, the model is

$$y_{it} = \beta_1 x_{it1} + \cdots + \beta_k x_{itk} + a_i + u_{it,} t = 1, \dots, T,$$

Where $the\ \beta_j$ are the parameters to estimate and a_i is the unobserved effect.

2- We have a random sample from the cross section.

3- Each explanatory variable changes over time (for at least some i), and no perfect linear relationships exist among the explanatory variables.

4- For each t, the expected value of the idiosyncratic error given the explanatory variables in all time periods and the unobserved effect is zero:

$$E(u_{it} \vee x_{i,} a_i) = 0.$$

Under these first four assumptions—which are identical to the assumptions for the first-differencing estimator—the fixed effects estimator is unbiased. Again, the key is the strict exogeneity assumption, FE.4. Under these same assumptions, the FE estimator is consistent with a fixed T as N → ∞.

5- Var $(u_{it} \vee X_{i,} a_i)$ = Var$(u_{it} = \sigma_{u,}^2 forallt = 1, \dots, T.$

6- For all t ≠ s, the idiosyncratic errors are uncorrelated (conditional on all explanatory variables anda_i): Cov $(u_{it,} u_{is} \vee x_{i,} a_i) = 0.$

Under Assumptions FE.1 through FE.6, the fixed effects estimator of $\beta_j$is the best linear unbiased estimator. Since the FD estimator is linear and unbiased, it is necessarily worse than the FE estimator. The assumption that makes FE better than FD is FE.6, which implies that the idiosyncratic errors are serially uncorrelated.

7- Conditional onx_i a_i and $u_{it}$are independent and identically distributed as $Normal(0, \sigma_u^2)$.

Assumption FE.7 implies FE.4, FE.5, and FE.6, but it is stronger because it assumes a normal distribution for the idiosyncratic errors. If we add FE.7, the FE estimator is normally distributed, and t and F statistics have exact t and F distributions. Without FE.7, we can rely on asymptotic approximations. But, without making special assumptions, these approximations require large N and small T.

The ideal random effects assumptions include FE.1, FE.2, FE.4, FE.5, and FE.6. (FE.7 could be added but it gains us little in practice because we have to estimate λ.) Because we are only subtracting a fraction of the time averages, we can now allow time constant explanatory variables. So, FE.3 is replaced with

4.6.2 RANDOM EFFECTS ASSUMPTIONS

3- There are no perfect linear relationships among the explanatory variables.

The cost of allowing time-constant regressors is that we must add assumptions about how the unobserved effect,a_i, is related to the explanatory variables.

4- In addition to FE.4, the expected value of a_i given all explanatory variables are constant: E($a_i \mid x_i$) = β_0.

This is the assumption that rules out correlation between the unobserved effect and

The explanatory variables and it is the key distinction between fixed effects and random effects.

5- In addition to FE.5, the variance of ai given all explanatory variables is constant:

Var($a_i \mid x_i$) = $\sigma_{a.}^2$

4.6.3 WELL BEHAVED PANEL DATA

i. Linearity: $y_i = x_{i1}\beta_1 + x_{i2}\beta_2 + \cdots + x_{ik}\beta_k + \varepsilon i$.

ii. Full rank: the n × K sample data matrix, **X** has full column rank

iii. Exogeneity of the independent variables: E[$\varepsilon_i \mid x_{j1,}x_{j2} \ldots . x_{jk}$ =

0, i, j = 1, … n.

iv. Homoscedasticity and non-autocorrelation.

v. Data generating mechanism- independent observations.

4.7 HAUSMAN TEST

This test gives us a technique for testing this hypothesis:

H_0: the Random Effect and Fixed effect model yield the same estimates.

H_1: Otherwise

When we fail to reject the null denotes that it is not a big deal which model is applied. Most of the times this means that we would prefer to use Random effect because it is more flexible.

Rejecting the null indicates that the Random effect model is biased which means that it is probably the case in which $E[a_i \mid x_{it,} \neq 0$.

4.7.1 HAUSMAN TEST AND POWER OF THE TEST

There is a trade-off between power and size when a statistical test is used.

Size refers to the probability of rejecting the null when the null is true

P (Type l error).

Power refers to the probability of failing to reject a null hypothesis when the null is false

1-P (Type ll error).

There are many things that can influence the power of the test:

The less powerful test due to the smaller size

Precision of the estimates has influence on the power of the test

Hausman is be very responsive to power

This means that for powerful test we require the fixed effect to be precise .which tells us there are little gains to be made from moving to the random effect model However, when fixed is poor , the gain from moving to random effect are large. But we cannot trust the Hausman test when it has low power.

CHAPTER -5-

EMPIRICAL RESULTS

As it was mentioned in the econometric theory in the previous chapter, in this chapter some of econometric techniques are used for estimating the role of FDI in enhancing economic growth performance.

1- Descriptive statistics

2- Correlation

3- Pooled OLS

4- Fixed Effects Model

5- Fixed Effects with AR (1) correction model

6- Fixed Effects Model with generated variables

7- Random Effects Model (RE)

8- Random Effects Model with generated variables

9- Hausman test

As it was earlier mentioned, we have ten countries in the Middle East and North Africa region such as, Turkey, Saudi Arabia, Jordan, Egypt, Arab Republic, United Arab Emirates, Bahrain, Yemen, Israel and Kuwait. In addition, we have some variables such as GDP growth as a proxy

variable for economic growth, FDI, Unemployment, Export, Urbanization, population, Arable land, Ln GDP constant US, natural resources and gross capital formation. We want to find the relationship between GDP and the other explanatory variables. Moreover, our data has been collected from 2001 to 2012.

5.1 DESCRIPTIVE STATISTICS

Table -1-

Variables	Obs	Mean	Std. Dev.	Min	Max
GDP growth(% of GDP)	120	4.36	3.96	-15.08	17.32
LnGDP constant US $	120	23.57	4.83	9.06	27.165
FDI, net inflows(% of GDP)	120	3.41	3.89	-1.80	23.53
Exports	118	48.96	18.82	17.42	97.91
Unemployment	120	8.52	4.20	0.8	17.8
Urbanization	120	73.87	20.70	26.78	98.29
Population growth	120	3.56	3.03	0.57	17.31
Arable land	120	5.60	8.83	0.08	31.17
Natural resources	120	24.50	19.95	0.00	64.07
Gross capital formation	114	21.77	4.97	12.80	36.48
Post crisis	120	.41	.49	0	1

As it is seen the number of observations in the sample is (120). Hence, we can say that our sample is quite large. The mean measures central tendency for each variable.

Standard deviation tells us how the observations of each variable move apart from each other.

5.2 CORRELATION

Table -2-

	GDPgrowth	LnGDP	FDI	Export	unem	urban	pop	Arbabl	Natural	gross	post
GDP growth	1.000										
LnGDP constant	0.105	1.000									
FDI	0.283	0.009	1.000								
Exports	0.113	-0.182	0.188	1.000							
unemployment	-0.038	-0.116	0.267	-0.489	1.000						
urbanization	0.071	0.064	0.088	0.560	-0.592	1.000					
Population growth	-0.025	0.005	0.028	0.622	-0.432	0.270	1.000				
Arable land	-0.076	0.329	-0.128	-0.586	0.265	-0.055	-0.352	1.000			
Natural resources	0.134	-0.354	-0.193	0.509	-0.535	0.121	0.249	-0.605	1.000		
gross cap form	0.149	-0.277	0.553	0.348	0.120	0.146	0.113	-0.236	0.062	1.000	
post crisis	-0.164	0.032	-0.043	0.130	-0.106	0.149	0.012	-0.011	-0.008	0.176	1.000

Correlation among key variables is reported in table (2). There is no sign of a strong correlation as to indicate multicollinearity.

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5.3 POOLED OLS

Table -3-

GDP growth	Coef.	Std. Err.	T	p	(95% conf. Interval)	
LnGDP constant	0.168	.0798	2.11	0.037	.0101	.327
FDI	0.271	.111	2.43	0.017	.049	.493
Exports	.0084	.036	0.23	0.815	-.063	.080
Unemployment	.0327	.158	0.21	0.837	-.282	.347
Urbanization	.0073	.029	0.25	0.807	-.051	.066
Population growth	-.138	.148	-0.93	0.353	-.433	.156
Arable land	.0326	.053	0.61	0.543	-.073	.138
Natural Resources	.0599	.027	2.15	0.034	.004	.115
Gross capital formation	.049	.088	0.56	0.577	-.125	.224
post crisis	-1.280	.692	-1.85	0.067	-2.653	.092
Cons	-3.331	4.491	-0.74	0.460	-12.239	5.576
N	114					
R-squared	0.195					
Adjusted R- squared	0.117					

In this table, the coefficient of FDI with a positive sign indicates that how much GDP growth increases when FDI increases by one per cent. It can clearly be seen that when FDI increases by one percent then that will lead to GDP growth increase by (0.271) per cent. t-values show us the hypotheses which coefficient is different from zero. The t-value must be greater than 1.96 (t-table) to reject for 95% confidence. As we know, it is the case for Natural resources as well.

Hence, we can say that FDI, Natural resources and LnGDP constant have a significant effect on GDP growth, which is in line with the hypothesis of our research.

R2 or the coefficient of determination shows that how the model fits the data. In other words, how the explanatory variables are correlated to the dependent variable. The value of R2 is between (0 - 1).

But we should notice that R2 does not tell us the predictions are biased or not and also small R2 are not always bad and large R2 are not always good.

5.4 FIXED EFFECTS RESULTS

Table - 4 –

GDP growth	Coef.	Std. Err.	t	p	(95% Conf. Interval)	
LnGDP constant	10.535	3.407	3.09	0.003	3.769	17.302
FDI	.0617	.1317	0.47	0.640	-.199	.323
Exports	-.0044	.066	-0.07	0.947	-.136	.127
Unemployment	-.147	.3055	-0.48	0.630	-.754	.458
Urbanization	-.050	.571	-0.09	0.930	-1.185	1.084
Population growth	-.256	.156	-1.64	0.105	-.567	.054
Arable land	-.506	.672	-0.75	0.454	-1.842	.829
Natural Resources	.0837	.079	1.05	0.295	-.074	.241
Gross capital formation	.007	.099	0.08	0.940	-.190	.205
Post crisis	-5.06	1.201	-4.22	0.000	-7.451	-2.680
Cons	-235.069	64.929	-3.62	0.000	-363.988	-106.149
N	114					
R- squared: within	0.287	between		0.2064	overall	0.016

Within: The R^2 from the mean-deviated regression such as R^2 from Ordinary least square.

Between: this measures the fitted values using the fixed-effects parameter vector and the within-individual means of the independent variables. Then calculates the R2 as the squared correlation between those predicted values and the within-individual means of the original dependent variable

5.5 FIXED EFFECTS REGRESSION WITH AR (1) CORRECTION

Table – 5 –

GDP growth	Coef.	Std. Err	t	p	(95% Conf. Interval)	
LnGDP constant	8.589	4.317	1.99	0.050	.003	17.176
FDI	.0338	.134	0.25	0.801	-.232	.300
Exports	-.031	.086	-0.37	0.711	-.203	.1392
Unemployment	-.530	.385	-1.38	0.172	-1.296	.235
Urbanization	-.108	.860	-0.13	0.900	-1.820	1.603
Population growth	-.263	.199	-1.32	0.189	-.660	.132
Arable land	.817	.877	0.93	0.354	-.927	2.563
Natural Resources	.194	.086	2.24	0.028	.021	.367
Gross capital formation	.022	.107	0.21	0.836	-.191	.235
Post crisis	-3.867	1.245	-3.11	0.003	-6.344	-1.390
Cons	-191.079	55.537	-3.44	0.001	-301.523	-80.636
N	104					
R squared: within	0.253	between		0.279	overall	0.027
Baltagi-Wu LbI	1.69	Durbin Watson			1.520	

The null there is no serial correlation

From this result, we fail to reject the null. Hence, Durbin Watson and Baltagi-Wu are much less than 2 thus we can conclude that there is a serial correlation

5.6 FIXED EFFECTS REGRESSION WITH INTERACTION VARIABLES

Table – 6 –

GDPgrowth	Coef.	Std. Err.	T	p	(95% Conf. Interval)	
LnGDP constant	8.882	3.456	2.57	0.012	2.014	15.749
FDI	1.262	.769	1.64	0.104	-.265	2.791
Exports	.0291	.078	0.37	0.710	-.126	.184
Unemployment	.0137	.334	0.04	0.967	-.651	.678
Urbanization	.324	.582	0.56	0.579	-.833	1.481
Population growth	-.940	.354	-2.65	0.010	-1.645	-.235
Arable land	-.159	.705	-0.23	0.822	-1.561	1.242
Natural Resources	.143	.098	1.45	0.150	-.0529	.339
Gross capital formation	.085	.104	0.81	0.418	-.122	.293
Interaction variables						
FDI*Natural Resources	-.019	.008	-2.26	0.026	-.036	-.002
FDI*Exports	-.010	.010	-0.99	0.327	-.030	.010
FDI* Unemployment	-.059	.044	-1.32	0.189	-.148	.029
FDI*population	.129	.0767	1.70	0.092	-.021	.280
FDI*Arable land	-.043	.029	-1.48	0.141	-.102	.014
Postcrisis	-4.740	1.235	-3.84	0.000	-7.195	-2.285
Cons	-230.359	64.143	-3.59	0.001	-357.810	-102.907
N	114					
R-sq: within	0.3557	between		0.2387	overall	0.0207

When we generate some new variables as the product of multiplication between FDI and some of other variables, we will see that some of these new variables are significant.

$$growth = \alpha + \gamma * NaturalResources$$

The above equation indicates the marginal effect of FDI on growth. Since $\gamma < 0 \wedge significant$ we can conclude that when natural resources increase the growth benefits FDI decreases.

5.7 THE MAIN REASON FOR USING FIXED EFFECTS MODEL

As it is mentioned earlier in the previous chapter, the fixed effects estimator is similar to the first-difference estimator which provides a method for estimation when there are unobserved but time invariant, individual- specific factors which influence the outcome a_i In addition to this fixed effect estimator is the best estimation tool if we think that a_i is correlated with one or more of the explanatory variables. However, in this research we do not use the first difference estimation because of the fact that most of econometricians prefer to use fixed effect if we have an unbalanced panel.

In this test, we require that the strict exogeneity assumption hold, which says FDI and Unemployment and export in a given period, must be uncorrelated with the error with the error term in every period.

5.8 RANDOM EFFECTS MODEL RESULTS

Ignoring the serial correlation with pooled OLS can lead to miss estimated standard error which means that reliable inferences about the population parameters based on our estimates cannot be reliable**.** Hence, we use the random effect estimator, which is a type of generalized least square (GLS) estimator**.**

Table – 7 –

Random Effects Results

GDP growth	Coef.	Std. Err.	z	p	(95% Conf. Interval)	
LnGDP constant	.168	.079	2.11	0.035	.012	.325
FDI	.271	.111	2.43	0.015	.052	.490
Exports	.008	.036	0.23	0.815	-.062	.079
Unemployment	.032	.158	0.21	0.837	-.278	.344
Urbanization	.007	.0299	0.25	0.806	-.051	.065
Population growth	-.138	.148	-0.93	0.351	-.4303	.152
Arable land	.032	.053	0.61	0.542	-.072	.137
Natural Resources	.059	.027	2.15	0.032	.005	.114
Gross capital formation	.049	.088	0.56	0.576	-.123	.222
Post crisis	-1.280	.692	-1.85	0.064	-2.636	.076
Cons	-3.331	4.491	-0.74	0.458	-12.134	5.472
N	114					
R-sq: within	0.1605	between		0.7808	overall	0.1952

In this table, the coefficient of FDI with a positive sign indicates that how much GDP growth changes when FDI changes by one per cent. Thus, it is seen that when FDI increases by one per cent then GDP growth will go up by (.271) percentage. t-values show us the hypotheses, which coefficient is different from zero . The t-value must be greater than 1.96 (t-table) to reject for 95% confidence. As it is seen, it is the case for Natural resources as well . Hence, we can say that FDI and Natural resources have a significant effect on GDP growth, which is in line with the hypothesis of our research. However, the explanation for the coefficients of Random effect is

quite complicated because the coefficients consist of both the within entity effect and between entity effect. So, the coefficients show the average effect of independent variables on GDP growth when explanatory variables LnGDP constant, FDI, Export, unemployment, Natural resources, Urbanization, Arable land, population, Gross capital formation change across time and between the countries by one percent.

5.9 RANDOM EFFECTS RESULTS WITH INTERACTION VARIABLES

Table – 8 –

GDP growth	Coef.	Std. Err.	z	p	(95% Conf. Interval)	
LnGDP constant	.173	.078	2.22	0.026	.020	.326
FDI	1.633	.703	2.32	0.020	.254	3.017
Exports	.067	.046	1.45	0.146	-.023	.158
Unemployment	.127	.1841	0.69	0.488	-.233	.488
Urbanization	.006	.031	0.22	.824	-.053	.067
Population growth	-.997	.350	-2.85	0.004	-1.684	-.311
Arable land	.115	.075	1.54	0.124	-.031	.262
Natural Resources	.122	.036	3.37	0.001	.051	.194
Gross capital formation	.1508	.094	1.60	0.111	-.034	.336
Interaction variables						
FDI*Natural Resources	-.0190524	.0080187	-2.38	0.018	-.034	-.003
FDI*Exports	-.0191472	.0098885	-1.94	0.053	-.038	.000
FDI*Unemployment	-.0502272	.0423647	-1.19	0.236	-.133	.032
FDI*Population growth	.1756284	.0740716	2.37	0.018	.030	.320
FDI*Arable	-.0379495	.0270798	-1.40	0.161	-.091	.015
Post crisis	-1.164728	.7006688	-1.66	0.096	-2.538	.208
Cons	-8.176143	4.997816	-1.64	0.102	-17.971	1.619
N	114					
R-sq: within	0.2463	Between		0.8006	overall	0.2785

5.10 HAUSMAN TEST

Table – 9 –

	(b) (Fixed)	(B) (Random)	(b-B) difference	Sqrt(diag(V-b-B-V) S.E.
LnGDP constant	10.535	.168	10.367	3.406
FDI	.061	0.271	-.209	.069
Exports	-.004	.008	-.0129	.055
Unemployment	-.147	.032	-.180	.261
Urbanization	-.050	.007	-.057	.570
Population growth	-.256	-.138	-.117	.048
Arable land	-.506	.032	-.538	.670
Natural Resources	.083	.059	.023	.074
Gross capital formation	.007	.049	-.041	.045
Post crisis	-5.065	-1.280	-3.785	.982

Chi2 (10) = (b-B) '[(V_ b-B _V) ^ (-1)] (b-B) = 17.07

Prob > Chi2 = 0.0729

H0: the Random Effect and Fixed effect model yield the same estimates.

H1: Otherwise

The probability value of chi square is (0.0729) greater than (0.005). Hence, we cannot reject Null hypotheses (H_0), but it is often recommended to use Random effects because it is more flexible and efficient..

It is worth mentioning that we should take in to consideration whether this assumption E[$a_i \mid x_{it,}$ = 0 is a valid assumption or not. When data is aggregate (by country), there is a high probability for this assumption not to be valid. Finally yet importantly, there is a small difference between the coefficients so it is not a big deal to choose one of them when post-crises = 0, but when post-crises =1 means that during the last economic crises Fixed effect underestimates the effect of FDI.

.CHAPTER -6-

CONCLUSION

This research has been done to find out the effect of FDI on economic growth performance in ten Middle East and North Africa countries. The preference of choosing these countries as a center of attention was greatly based on the fact that there is lack of academic research done on this topic on this region. Moreover, some of these countries are considered as being inconsistent in terms of data on macroeconomic variables. Hence, the data that have been used in this research is also a main consideration that should be taken into account. In this research, the panel data has been taken from (2001 to 2012) and the data on GDP growth, which is used as a proxy variable for economic growth, FDI, Export and unemployment, Urbanization, population growth, Arable land, Natural resources and gross capital formation were achieved from the World Bank website.

The main involvement of this research is supplementing some understanding to the ongoing debate on the relationship between FDI and GDP growth by using the most reliable econometric techniques for analyzing panel data.

In this study we found that FDI has a significant and positive impact on the economic growth performance on the MENA region based on probability values that are less than 0.005 for all models (Pooled OLS, FE and RE models).

When we apply Hausman test without including the dummy variable may be it is not surprising if we are confused to decide which on is the right estimator because there is not a large difference between (FE and RE) in the coefficient of FDI it is just (0.0437052), but since P-value is greater than 0.05, which is 0.9498 and Random effect is more efficient so that it recommends to use RE, but when we add the dummy variable FE underestimates FDI. Finally , from both Hausman tests it is recommended that RE is a better estimator and FDI has a significant effect on the economic growth performance. Thus, the results are in line with the hypothesis of our study, which states that FDI has a significant impact on the economic growth and also in line with other studies done by(Borensztein et al (1998), Bengoa and Sanchez-Robles (2003), Li and Liu (2005), De Mello (1999), Behmane (2012) and Steve (2013). The limitation of this study was that we could not use other models like first difference due to missing some data for some years. One of the main limitations of this research is using unbalanced panel data due to missing data for some years, which restricted us from using the other models like First difference. On this note, the future research must consider of using balanced panel data. Natural resources play a huge role in attracting FDI into the region so that Further study can be done on sector analyses.

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