ANALYSIS OF DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN EGYPT (1970-2013)

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Abstract

Egyptian economic conference came (the future of Egypt) to prove the importance and necessity of Foreign Direct Investment (FDI) for Egyptian economy development. Actually, the strong competition between the different countries to attract more of (FDI) is considered an important factor that forces us to identify the environment of the investment in Egypt. This competition requires not only exerting efforts to attract these investments, but also using it as efficiently as possible. The Arab world is an important source for this investment, which focuses on infrastructure, industry, hotels and services. Although, it is obvious to all the importance of (FDI) in increasing the domestic capital accumulation, its role in Egyptian economy is still limited and this requires more work to attract the biggest and the best (FDI) to achieve economic and political stability in Egypt.

The importance of this study is to help the decision-makers to know the properties and appropriateness of the climate of (FDI) in Egypt, its international indicators, the quality and effectiveness of economic and legislative policies. This study aims to identify and measure the most important economic factors affecting the inflow of (FDI) to Egypt during the period (1970-2013). The study used SPSS, Eviews and Statgraphics software to select the optimal econometric model that explains the functional relationships between (FDI) as the dependent variable and 13 economic independents variables related to (FDI). The study also attempts to predict the size of (FDI) and its determinants for the next five years, which helps economic responsible personnel to improve the environment of (FDI) in Egypt.

Co-integration equation shows that the variables (Gross Domestic Production, Households' Expenditure, and Degree of Commercial Exchange) have a positive impact on (FDI), while the variables (Inflation, Unemployment, General Government Expenditure, Exchange Rate, and Interest Rate) have negative effect on (FDI), also the significant effect of the variables (Population, Domestic investment, Savings, and the Balance of

Goods and Services) does not appear. The explanatory power model is 83.3%; which is high.

Keywords: Foreign direct investment, Egypt

Introduction

The international economic arena has witnessed unprecedented transformations since the beginning of the nineties that were represented in spread of economic globalization through opening markets and removing commercial limitations. This was represented in the steady increase of international trade and the size of its financial exchanges. One of the most important of these financial exchanges is (FDI) which has become of the most remarkable landmarks of international economy and a feature of its globalization[1].

(FDI) inflow to a certain country as part of its total investment or total constant capital can reflect how much investment in that country depends on foreign investment. It may also reflect ability of this country to attract these investments. Generally, compared to other sorts of financial inflow (such as investment portfolio, bonds, loans and other), FDI is significantly the least fluctuated financial inflows[2].

(FDI) forms one of the influential variables that affect development and growth of countries. It is an indicator for openness of economy and its ability to deal and cope with international developments in the light of spreading globalization phenomenon, increased transformation towards free market mechanisms and dominance of multinational companies on movement of goods and services. Arab countries face difficulties in obtaining domestic capital sufficient for achieving the required level of investment of its natural and human resources. Most of these countries are characterized by reduced average of gross domestic production per capita (GDPC) and reduced growth rates of national production compared to developed countries. As a result, level of investment is low there. Therefore, those countries became interested in attraction of foreign investment as means for overcoming shortage of financial and local sources through providing suitable investment climate via drawing up modern organizational and legislative frameworks as well as providing what is needed for facilitating works of investing companies[3].

Competition among countries is becoming even tougher for attracting more (FDI) through removal of barriers, granting required incentives and guarantees. Loans are no longer an attractive source of foreign finance due to their increased cost and as some developing countries are unable to repay them. Because countries, particularly developing ones, need foreign sources of finance as their domestic sources are weak due to insufficiency and

inefficiency of their savings, (FDI) has become increasingly important at the international level because of the returns it achieves for host countries.

According to theories and economic literature, (FDI) represents one of the most significant capital for the important role it plays in transfer of technology and recent techniques, in addition to its participation in capital accumulation, increasing the efficiency of human capital and improvement of skills and experience. Moreover, it has positive impacts on growth and economic development. It takes part in increasing exports and decreasing imports. Consequently, it improves balance of trade, balance of payments and investment efficiency. It raises the level of domestic savings and reduces unemployment.

Literature shows that the most important reasons for transfer of capital are: difference among countries regarding rates of expected return on investment (ROI), response to massive and fast growth of products' markets abroad, increasing average per capita income in host countries, benefiting from comparative advantages in host countries, variety of risks, making use of specialization in certain knowledge by transferring and investing it in other countries[4].

1- Definition and Kinds of Foreign Direct Investment

Herbert Feis (1930) was one of the first users of (FDI) concept. He called it foreign investments that do not influence stock exchanges. Inflow of foreign capital is inflow of economic resources to others with the purpose of using it abroad[5]. World Trade Organization (WTO) defines (FDI) as the investment that occurs when an investor based in one country (the home country) acquires an asset in another country (the host country) with the intent to manage that asset[6]. United Nations Conference of Trade and Development (UNCTAD) defined (FDI) as an investment of foreign finance (not national one) in constant capital assets in a given country, It is an investment that involves a long-term relationship and reflects interest of an investor in another country that has the right of management and control of these assets from his foreign country or from country of residence whether this investor is an individual, a firm or an organization[7].

The Organization for Economic Cooperation and Development (OECD) defines (FDI) as an investment based on achievement of sustainable economic relations with institutions. It is particularly the investment that gives the ability of real influence on management of institutions using investment through establishment of new institution, affiliated one, a branch or shares in a previously existing institution, shares in a new institution or giving long-term loans[8]. In addition, the International Monetary Fund defines (FDI) as a group of different operations guided to influence market and

manage an organization located in a country other than the home country of parent organization[9].

According to the criterion established by the Fund, investment becomes direct when the foreign investor owns 10% or more from shares of the capital in a business organization and from the number of votes there. This share has to be enough for giving the investor the right to take part in management of the organization[10]. It is clear that the portion of 10% is an indicator for possessing a high degree of influence, or perhaps controlling management of the project. However, if investment is less than 10%, it is not considered (FDI); and is described as short-term. In this case, it represents other forms of private capital inflow such as investment portfolio and bank loans. These forms of transfers do not have direct influence on production or on management of the local project that they participate in its finance. Thus, (FDI) is an inflow of economic resources to others with the intend of using them outside the borders of the country that owns these resources; or a group of inflows generated by transfer of investment capital to host countries with the purpose of maximizing profits and fulfilling targeted benefits. Moreover, it can participate with domestic capital in establishment of various projects in these countries.

Thereupon, two concepts of foreign investment must be distinguished from each other: the first one is the narrow concept related to the direct kind. The second concept is the broad one that encompasses the two kinds; direct and indirect. It must be noted that (FDI) does not always mean new investments created by foreign organization. In many cases, it is not investment with the real meaning but simply transfer of possession of existing assets from local organizations to foreign ones through merger or getting existing assets.

Foreign direct investment is not an alternative for local investment. On the contrary, it complements them. Although, some people relate trends of local investment to those of foreign investment, there is no concrete proof that factors affecting foreign investment also affect local investment[11]. Confusion has always occurred between foreign direct investment and portfolio investment till 1968 when they were distinguished from each other[12]. They can distinguished also by the fact that (FDI) includes all financial investments in constant assets while foreign portfolio investment includes all financial investment in governmental and institutional bonds as well as all kinds of bank loans and shares.

(FDI) is also defined as a group of inflows resulting from transfer of investment capital to host countries in order to maximize profits and fulfill targeted benefits in participation with domestic capital so as to establish various projects in those countries[13]. It can be defined as possessing by investor of part of investments in certain project or all investments of the

project, besides participation in management of the project with a national investor or overall control of management and organization in case of possessing the whole project. In addition, it takes place when an investor transfers a quantity of financial and technological resources and technical experience in all fields to the host country[14]. Foreign investor is defined as that firm which possesses assets in a firm (or production unit) affiliated to a country other than home country. Possession is having a share that equals 10% of ordinary shares or of the votes of the administrative board of domestic firms or the same proportion in other firms[15].

Categorization of foreign direct investment counts on the used criterion. Economic studies and research indicate that there are many kinds of (FDI). They can be divided into five kinds: joint investment, investment completely owned by foreign firms, projects or processes of aggregation, processes of merging or possessing and multinational companies[16]. In addition, investment can be divided according to other criteria such as the legal form, international management methods, sort of economic activity and forms of property[17].

Foreign investor's economic incentives that influence inflow of foreign direct investment to the host country can be classified into three kinds: investor who looks for markets, investor who looks for raw materials and natural resources, investor who looks for efficiency. A fourth kind can also be added that is investments looking for services.

Table (1): Economic Incentives for flow of Foreign Direct Investment[18].

Investment according to Incentive	Explanation	Main Determinants in Host Country
Looking for Markets	In this case, the investor invades protected markets of host country. Investment is extension of export strategy.	Size of market Growth rate of market Closeness to regional and international markets Preferences and taste of local consumers Structure of competitive markets
Looking for Raw Materials, Natural Resources and Assets	A foreign investor produces primary products for foreign markets and export to them.	Availability of natural resources Availability of inefficient workers with low wages Availability of technical and pioneering assets including individuals and production units Availability of infrastructure such as ports, electricity supply and communication
Looking for Efficiency	An investor seeks achievement of gains related to efficiency or uses foreign direct investment more efficiently and thus increasing export opportunities.	Low cost of resources and assets Low cost of production inputs such as transportation, communication and intermediate inputs of production Membership of a national convention of integration that encourages establishment of national business networks

From the previous table, it is clear that this classification participates in helping countries to follow appropriate strategies to attract and localization of investments through identification of influential factors that attract each kind of investors[19]. (FDI) can also be classified into horizontal investment that replaces exports with local production to overcome trade restrictions and vertical investment that divides the vertical series of production and transforms a section of it into sites with less cost, i.e. vertical (FDI) leads to more flow and efficiency via flow of production in all their production stages among construction existing mostly in different countries.

Although (FDI) is important, it forms only 8% of total constant capital worldwide [20]. Significance of foreign direct investment has increased internationally as it became one of the most important sources of investment projects in developing countries. Beginning from the first half of eighties, this kind has become a main element of development strategy elements whether in developed or in developing countries because they integrate into their strategies the development of their investment climate and adaptation of this climate to globalization requirements and market economy in order to attract more shares of investments[21].

It can be briefly stated that the importance of (FDI) is due to the following: international aids and loans that were basic source of finance have decreased, it is considered more secure and profitable for host countries compared with indirect foreign investment, it is considered one of the means of technology localization and access to markets, it is considered a resource of capital and administrative experience, the more a country is able to attract it, the more competitive it becomes; and finally development of infrastructure elements and increase the degree of merging into the new international system[22].

2- Determinants of Foreign Direct Investment:

Foreign direct investments flow into a certain country to make use of three categories of advantages: competitive advantages: including trade name, patent, technology and marketing; location advantages: including big markets, reduced cost of materials and distinguished infrastructure; and finally advantages of integration among countries. Ad vantages of the second category (location advantages) are those depending directly on policies of concerned countries, its institutions and economic circumstances. Consequently, if appropriate investment climate exists, economic factors will control determinants of foreign direct investment[23].

UNCTAD mentioned in its report in 1998 a group of determinants for attracting foreign direct investment. Important determinants of them are: size of national market that is measured by gross national product, economic growth rate of the country that hosts investment which is measured by

growth rate of gross national product, average per capital income that is measured by average gross national product per capita, availability of scale economies, policies and programs of privatization, trade and tax policies, availability of raw materials, availability of workers, availability of technology and innovations, and finally availability of basic infrastructure[24]. Moreover, UNCTAD investment guide added the following factors: geographical location, labor productivity, tariff and non-tariff barriers, merging of host country into international economy, rate of trade exchange, availability of infrastructure, and degree of economic and political stability in the host country [25].

More factors can be added, as well, through the attraction model of explaining flows of (FDI).such as: size of country, distance between it and other countries, existence of common values, common languages and Colonial history, and international conglomerates [26].

Determinants of foreign direct investment in a given country can be gathered in three categories[27]:

- ✓ Determinants related to policies: They include group of policies concerning foreign direct investment, i.e. policies that affect economic, social and political stability. They are represented in laws that regulate entrance of an investor into a country, criteria of dealing with firms affiliated to foreign investor, policies related to structure and mechanism of markets particularly regarding degree of competition and acquisition policies, international conventions on foreign direct investment, privatization policies, foreign trade policy including categories of duties on foreign trade, tariff and non-tariff barriers, consistency of these policies with those related to foreign direct investment and tax policies.
- ✓ Determinants of Business facilitation: They include activities that facilitate the climate of production and trade business such as efforts for encouraging investment, investment incentives, administrative efficiency, post-investment services, efforts for making good reputation and attract investment, efforts for facilitating investor's businesses, incentives granted to foreign investor, costs of making businesses including costs of encountering corruption and administrative inefficiency, social services including availability of multi-language schools, standard of living and post-investment services.
- ✓ Economic Determinants: They are related to a group of traditional economic factors such as available natural resources, size of market, labor productivity, other inputs and sort of infrastructure that was mentioned previously.

Achieving the prerequisites or what is called new generation of foreign direct investment encouragement policies improves economic determinants of host country and increases its ability to attract more

investments. Malaysia targeted foreign direct investment based on export in the sector of electronics without existence of former industrial export base to be the biggest source of electronic semiconductors in the world in a decade's time[28].

3- Multinational companies and Foreign Direct Investment:

Multinational or transnational companies are considered one of the most prominent phenomena of foreign direct investment. They are companies that own, manage or practice directly or indirectly an investment activity (production, marketing, services…) outside the borders of home country regardless of number of countries that host its branches. Multinational companies are defined as units that possess or manage assets abroad[29]. According to 2002 statistics, there are 65 thousand multinational companies worldwide. 234 companies of them are in two Arab countries: Tunisia (142 companies) and Oman (92 companies). About 850 thousand affiliated companies or 4317 branches of them in 17 Arab countries; more than 48% of them are in Tunisia. Number of these companies went up to 69 thousand in 2004 employing 54 million persons with sales of 19 trillion US dollars which was double the value of world exports[30].

There are any economic theories explaining the existence of multinational companies such as: theories based on incomplete markets and incomplete competition, theories based on existence of protection or protective measures taken by multinational companies to ensure return on proportional benefits, theories relying on life cycle of goods and stages of their development, and theories counting on location as a significant pivot for selecting suitable headquarter for investment.

Property in multinational companies takes the following forms: A branch owned completely by foreign investor: In this case, foreign investor owns more than 50% of the total shares (such as cars industry); Joint Venture: where foreign investor owns less than 50% and more than 10% of shares; and Franchise: where foreign investor owns less than 10%.

There are many administrative styles in multinational companies such as: the central style in decision making, i.e. all decisions are made in the main headquarter in home country and then they are generalized in braches; decentralized style of decision making, meaning that there is a high degree of freedom to act and to make decisions in all branches with simple degree of control on branches from parent corporation; and the geographic style of administration and decision making that is integration and geographical dispersion in practicing activities and making decisions at the level of branches.

Regarding kind of activity, there are industrial multinational companies, trade multinational companies and multi-owned companies. As

for the degree of integration of companies and kind of transferred technology, there are vertically integrated multinational companies whose activity is limited to extractive and manufacturing industries, and horizontally integrated companies whose technological levels are varied and include consumables (beverages, detergents, foods…). Companies that transfer technology (usually old one) to other countries seek to expand abroad due to change in supply and demand conditions in their home headquarters.

4- Climate and Environment of (FDI) in Egypt and Legislation Related

If it had not been for the late political events that Egypt has been undergoing from 2010 till now, Egypt would have progressed to the level of (FDI) hosting countries in Africa and Middle East. According to analysis of investment climate in Egypt, it is noted that Egypt has witnessed a period of political stability beginning form 1993 to 2010. On the social level, Egypt's population is nearly 90 million people. Consequently, it represents the largest consumer market perhaps in Africa and may be in the Middle East[31]. As for standard of living, Egypt occupies the 100th rank internationally among 142 countries in the arrangement of countries according to per capita income which is a low rank[32]. Concerning health, health coverage is 202 physicians for 100 thousand people in 2010[33]. Regarding education, unfortunately Egypt is still in the list of the worst 10 countries based on illiteracy rate in 2010 (28%) and the seventh internationally[34]. As for labor, manpower in Egypt in 2010 reached 23.8 million people and unemployment rate reached 9% in 2010. However, the most distinguishing feature of the unemployed category is that it consists mostly of graduates of universities and institutes (about 20%) [35].

Regarding economic reformations, the Egyptian government tended to correct structural imbalances in the Egyptian economy in the light of applying the agreement signed with the International Monetary Fund and World Bank in 1991 through adopting a comprehensive economic reform program which aimed to fulfill financial and monetary stability, restore macroeconomic balance as first phase of the program, and increase economic growth rates as following phase through a group of measurements and reforms such as economic stabilization policies (financial reform like rationalization of public expenditures and increasing public revenues, monetary reform via liberalization of interest rates, exchange rates and terms of granting credit) and structural adjustment programs. As for, indicators of economic performance, they will be tackled in the optimal econometric model. They include gross national product, inflation, unemployment, balance of trade and balance of payments).

Concerning legislative reforms, the Egyptian government has implemented different policies on a large scale to attract (FDI) since beginning the reform process and economic openness through adjustment of its legislations and assessment of tax and financial incentives starting with Law No. 43 of 1974 that was a real beginning for encouraging Arab and foreign capital[36]. Next was Law No. 59 of 1979 with the purpose of attracting foreign investments. Then was Law No. 159 of 1981 that cancelled Law of 1974[37]. In 1989, Investment Law No. 230 was ratified. It made the General Authority for Investment the body responsible for dealing with investors. It allowed foreigners to own 100% of project.

After that, Law of Investment Guarantees and Incentives was issued as No. 3 of 1998. It cancelled law No. 159 of 1981[38]. Then, Law No. 8 of 97 was amended by Law No. 83 of 2002[39], Law No. 13 of 2004, Law No. 94 of 2005, Law No. 19 of 2007, Law 114 of 2008 and then Law 133 of 2010[40].

Egypt is considered one of the developing countries that suffer shortage of its domestic savings. Therefore, it needs (FDI) inflows to participate in financing it economic projects. It is known that (FDI) has positive and negative impacts on economies of host countries which can be summed up as follows:

- ✓ **Participation of (FDI) in Capital Formation:**

According to data of UNCTAD (2010), it is remarkable that in 1993 (FDI) participated greatly in the process of capital formation in Egypt because its participation reached 13.7% compared to 6.4% in developing countries. However, this indicator went down noticeably from 1995 to 2003 till it reached 1.8% in 2003 compared to 9.5% in developing countries. Nevertheless, this indicator went up once again from 2004 to 2010 compared to developing countries till it reached 47.8% while developing countries had 12.9% in 2006[41].

- ✓ **Participation of (FDI) in Financing Development:**

When comparing (FDI) with loans inflow, portfolio investment, workers' remittances and official development aids, it can be noted from tables of World Bank that the main source that Egypt counts on to finance its development is workers' remittances from abroad, then the official development aids with slight difference. However, (FDI) always came in the third or fourth rank; its proportion did not exceed 15% from total capital inflow to Egypt in 1994 and 1998 or 19,5 in 2000. Yet, (FDI) was on top of capital inflow to Egypt from 2005 to 2008. Then, workers' remittances came on top beginning from 2009[42].

✓ **Participation of (FDI) in Economic Growth:**

Comparing foreign direct investment balance to gross domestic product, it can be noticed that the proportion is logical as for developing countries[43].

✓ **Impact of (FDI) on Balance of Payments:**

(FDI) plays a direct and great role in financing the gap in balance of payment from 1993 to 2001[44].

✓ **Impact of (FDI) on Some Other Economic Variables:**

(FDI)'s participation in creating job opportunities form 1993 to 2010, for example, was little compared to total number of employees in the state that was 0.06% in 1993[45].

5-Assessment of Investment Climate according to International Indices:

These developments can be recognized through improvement of the compound index of investment climate that depends on total economic indices including inflation rate, and internal and external balance. Although, there is apparent improvement in the ability of Arab countries to attract this investment, they could attract only 4.8% of gross foreign direct investment on the international level[46].

✓ **Index of Country's Performance in Attracting Foreign Direct Investment:**

It measures the current status in a country regarding its actual share of inward foreign direct investment flows internationally proportionated to the state's share of world's gross national product. Average of three years is calculated to limit effects of seasonal factors. Egypt had lowest performance from 1997 to 2004 as it was among the group of states with low performance. Then, it witnessed improvement beginning from 2006 as it became one of foreign direct investment attractive countries.

✓ **Index of Country's Capabilities of Foreign Direct Investment Attraction:**

It measures ability of a country to attract foreign direct investment through 12 elements (growth rate of gross domestic product, average per capita income, exports proportionated to gross domestic product, spread of cell phones, average per capita energy consumption, expenditure on research and development proportionated to gross domestic product, postgraduate students proportionated to total population, country's sovereignty rating, country's proportion of natural resources exports to the world, proportion of imports of electrical appliances' spare parts in the world,

proportion of country's exports of services to the world and country's proportion of accumulative balance of inward foreign direct investment of the world.

- ✓ **Human Development Index:**

Egypt occupied the rank No. 106 in 1993 among 164 countries with a proportion of 0.611. Egypt considered to be of medium human development because its index rose to .62 on 2010[47].

- ✓ **International Competitiveness Index:**

It has been issued since 1979 by the World Economic Forum in Davos in cooperation with international academic experts and international networks consisting of 109 partner organizations. It is considered an important tool in formation of economic policies and guiding investment decisions. This index consists of two main indices. Growth index of competitiveness measures ability of world economies to achieve constant rates of economic growth and its overall performance on the intermediate and long run. On the other hand, Business index of competitiveness measures ability of economic units at the level of organization to achieve competitiveness[48]. Egypt had decline in this index from 4.03 in 2001 to 3.96 in 2005 as Egypt suffered from instability of policies (13.6%), inefficient education (13.4%) and finance difficulty (10.6%) [49].

- ✓ **Ease of Doing Business Index:**

The World Bank in cooperation with International Finance Corporation depends for analysis of this index on many aspects that cover the life cycle of investment project[50]. These aspect are project establishment index, number of procedures, cost as a proportion of per capita income, minimum capital for beginning a project, index of getting licenses, number of procedures, workers employment index, working hours rigidity index, difficulty of firing form work index, appointment cost index (proportion of salary), property registration index, number of procedures, period (work day), cost (proportion of property value), legal rights index, credit information index, investor protection index, extent of disclosure index, direct responsibility index, index of shareholder's suits, tax payment index, number of paid taxes, gross taxes as proportion of trade profits, export and import documents, export and import period, export and import cost, contracts implementation index, period and cost of solving trade conflicts and index of project's closure. It is noticed that Egypt occupied rank No. 141 in 2006 among 155 countries. After that, it declined to 94 in 2010 due the reforms made in the last period[51].

✓ **Index of Legislations Related to Investment and Developments of New Economy:**

This index has interest in measuring how much laws regulating investment are complicated, how available knowledge economies are, governmental electronic programs, ratification of electronic signature system and procedures of electronic trading[52].

✓ **Transparency Index:**

Egypt witnessed improvement in transparency indicator form 2.84% in 1996 to 3.1% in 2010 to be in the category of countries with dark orange color that include China after it had been one of the countries with red color (indicating high rates of corruption).

Table (2): Egypt's Stature in General Indices of Measuring Investment Climate from 1993 to 2010[53]

Year	Index of Country's Performance in Attracting (FDI)	Index of Country's Capabilities of (FDI) Attraction	Ease of Doing Business Index	Human Development Index	Competitiveness Index	Transparency Index
1993	46	83	-	106	-	-
1994	42	80	-	109	-	-
1995	50	83	-	112	-	-
1996	73	90	-	-	-	41
1997	99	88	-	120	-	-
1998	103	64	-	119	-	66
1999	106	69	-	105	-	63
2000	102	72	-	115	-	63
2001	110	71	-	120	51	54
2002	113	70	-	120	-	62
2003	126	75	-	119	58	72
2004	98	81	-	111	62	77
2005	66	85	141	113	53	70
2006	25	87	165	122	63	70
2007	29	88	126	123	71	105
2008	50	92	114	-	77	115
2009	56	88	106	-	81	111
2010	57	-	94	101	70	98

The following Table shows Egypt's Stature according to indices of measuring countries' risks 1993-2010:

✓ Egypt is one of the countries with moderate risks since 1999 as it occupies rank No. 100 internationally at the end of 2010 according to compound index of country's risks[54].

- ✓ Egypt witnessed fluctuation in Euromoney index so it became once one of countries with high risks and once one of the countries with moderate risks (2006-2010) as it achieved rank No. 64 of 185 countries in September 2010[55].
- ✓ Egypt had slight increase in institutional index since 2007 which allowed it to be one of countries with moderate risks and became in rank No. 73 in 2010[56].
- ✓ Regarding Coface index, Egypt had speculative grade B during the period from 2003-2010.

Table (3): Egypt's Stature in Indices of Country's Risks Measurement[57].

Year	Compound Index of Country's Risk	Euromoney Index	Institutional Index of Country's Assessment	Coface Index
1996	67.5	45.7	-	-
1997	71.3	55.4	-	-
1998	70.8	34.1	43.2	-
1999	68.3	52.3	45.4	-
2000	69.3	56.4	51	-
2001	68.8	52.6	47.1	-
2002	67.5	50.3	45.5	-
2003	66	49.2	41.1	
2004	69.3	49.4	44.4	B
2005	68.8	47.4	48	B
2006	68.8	50.2	46.7	B
2007	69	50.9	51.4	B
2008	65.5	52.1	50.7	B
2009	66.3	-	51.4	B
2010	65.3	57.4	51	B

5- Previous Empirical Studies Related to Selected Economic Variables:

- ✓ **Foreign Direct Investment and Gross Domestic Product:** Domestic product is considered a basic determinant for foreign firms searching for new markets or increase in its share of host countries' markets. Countries with great domestic product are suitable for many local and foreign firms to invest their money. Empirical Studiesproved existence of a positive relation between gross domestic product and inflow of foreign direct investment. According to a study by UNCTAD on flow of foreign direct investment to 42 developing countries, it was found that domestic product is an important determinant of attracting foreign direct capital[58].
- ✓ **Foreign Direct Investment and Inflation:** Inflation is constant increase in the general level of prices for a long time. There are many methods for measuring inflation. The most important of these methods are standard number of consumer's price, standard number of product prices and reduced gross domestic product. Inflation rates have direct impact on

pricing policies and size of profits and consequently on movement of capital. They also affect production costs which foreign firms are interested in. Increasing inflation rate leads to corruption in investment climate and makes it go into danger area whether the investor is local or foreigner. Inflation is considered an indicator for weak national economy. Hence, there is a negative relation between inflation rate and inflow of foreign direct investment. In a study, it was found that countries that can control inflation so that it is no more than 20% achieve remarkable success in attracting foreign direct investment[59]. A study conducted by Harms showed that inflation rate has negative impact on attraction of foreign direct investment[60].

- ✓ **Foreign Direct Investment and Government Expenditure:** Increase of government expenditure and increase of its proportion of domestic product indicate that excessive government expenditure hinders economic growth and leads to budget deficit, tax increase and low incomes. Consequently, demand on goods and services decreases so savings and investment decrease[61]. There is a negative relation between government expenditure and inflow of foreign direct investment as proven by Montfort's study[62].
- ✓ **Foreign Direct Investment and Deficit of Current Account Balance:** Cases of current account balance deficit indicate state of imbalance in balance of payments which hinders investment inflows. Most studies indicate that huge imbalance in balance of payments is a result of the state's great reliance on its capabilities. Hence, cases of long term deficit lead to increase in future taxes, low per capita income, reduced demand on goods and services, and consequently reduced savings and reduced investment. Thus, there is negative relation between current account balance and inflows of foreign direct investment. Tcha's study indicates that current account balance has negative impact on foreign investments[63].
- ✓ **Foreign Direct Investment and Domestic Savings:** There are two impacts of domestic savings on foreign direct investment. The first one is proportional and leads to increase in investment, production and size of market[64]. Consequently, it leads to increase of foreign direct investment. The second impact is negative because domestic savings results to increase in foreign direct investment, particularly for non-oil countries[65].
- ✓ **Foreign Direct Investment and Exports:** Exports in General and industrial exports in particular are considered an important determinant of foreign direct investment inflow that is directed to export. Most studies discussed this adverse causality relation. Exports are considered the new power that moves economic growth in the twenty first century. A study by the World Bank highlighted the significance of exports in

investment inflow[66]. In addition, an applicable study on investment of Japan in UK found that exports have positive impact on investment of Japan in UK[67].

- ✓ **Domestic Investment**: can be defined as investment of money in different fields and available opportunities of investment in local marker regardless of kind of used investment tool. Accordingly, the money that organizations or individuals invest inside a country is considered used investments such as real estate, stock, gold and foreign currencies[68]. Domestic investment is divided, as for the body implementing it, into: private investment which is carried out by the private sector and public investment which is implemented by the public sector. Regarding its most important kinds, they are international aids (loans and grants) portfolio investment (including purchase of private and public bonds from the stock exchange). (FDI) may result in decline in domestic investment or competition with domestic investment in host countries instead of encouraging more domestic investments in a way that limit its impact on economic growth in those countries[69]. Competition occurs to financing part of (FDI) requirements by domestic market or because of competition between foreign investment firms and local firms. The first case results in shortage of savings in domestic market which are supposed to go to domestic investment. The second case results in exit of some local firms which are incapable of competing at least in the short term[70]. When direct foreign investment compete with domestic investment, increase participation of domestic investment in added value through development of production equipment and technology transfer which local organizations make use of via foreign firms and via processes of merging and acquisition[71].

  When foreign investment resorts to getting domestic loans, they increase interest rates and consequently reduce domestic investment. This fact influences participation of domestic investment in domestic product and in economic growth[72].

6- The Empirical Study:

The Empirical Study aims to build an optimal econometric model to study determinants of foreign direct investment flow in Egypt form 1970 to 2013 and to predict this rate in future years in the light of those variables. This helps to draw up economic policies and to make decisions. In order to achieve this, research tackles the following:

(6-1) Variables and Period of Study:

The study depended on time series data from 1970 to 2013 of the following variables[73]:

Table (4): Variables Used in the Study	
Symbol of Variable	Description of Variable
Y	Foreign Direct Investment (dependent variable) FDI
X1	Gross Domestic Product GDP
X2	Inflation INF
X3	Unemployment UNEMP
X4	Population POPU
X5	Gross Government Expenditure GGD
X6	Households' Expenditure HOUD
X7	Monetary Reserve TR
X8	Domestic Investment (gross formation of fixed capital) GFCF
X9	Savings SAVI
X10	Balance of Goods and Services (DBCGS)
X11	Degree of Trade Exchange OPEN
X12	Exchange Rate EXCR
X13	Interest Rate INTR

Used Statistical Analysis:

✓ **Descriptive Statistics for Variables of the Study**:

Mean and Median are used as measurements for central tendency. Standard deviation and quartiles used as measurements for desperation.

✓ **Jarque-Bera Test for Data Normal Distribution:**

H0 and H1 are formulated as follows:

H0: The variable follows normal distribution (i.e. there is no difference between variable distribution and normal distribution).

H1: The variable does not follow normal distribution (i.e. there difference between variable distribution and normal distribution).

Judgment rule is based on level of probability of Jarque-Bera test. If probability is more than 0.05, H0 cannot be rejected (i.e. variables follow normal distribution). If probability is less than or equals 0.05, H0 can be rejected and H1 is accepted (variables do not follow normal distribution).

✓ **Dickey Fuller Test of Unit Root to Test Stability of Study Variables:**

H0 and H1 are formulated as follows:

H0: the variable includes unit root (i.e. it is not stable).

H1: the variable does include unit root (i.e. it is stable).

Judgment rule is based on level of probability of T test. If probability is more than 0.05, H0 cannot be rejected (i.e. the variable is stable). If probability is less than or equals 0.05, H0 can be rejected and H1 is accepted (i.e. the variable is not stable). The test can be conducted once again after taking differences of integration degree test of the variable. If the variable becomes stable after taking first differences, the variable is integrated of the first degree. It is represented by the symbol I (1). If the variable becomes

stable after taking second difference, the variable is integrated of the second degree. It is represented by the symbol I (2) and so on.

✓ **Co-integration Test:**

Regression analysis measures impact of independent variables on dependent variables. However, in case of non stability (not stationary) in time series, the regression gained from variables of time series is spurious regression. In this case, it is allowed to use co-integration method that studies the relation among unstable time series. In addition, it solves the problem of spurious regression that may occur among unstable time series. Therefore, before conducting co-integration test, stability of variables will be tested through Augmented Dickey Fuller test of Unit Root.

✓ **Time Series Analysis:**

In order to predict dependent variable, explaining variables are predicted first. Statgraphics program was applied. The program selects and decides preferences among many models. It selects the best model to predict variables for a future period based on various criteria such as:

RMSE = Root Mean Squared Error
RUNS = Test for excessive runs up and down
RUNM = Test for excessive runs above and below median
AUTO = Box-Pierce test for excessive autocorrelation
MEAN = Test for difference in mean 1st half to 2nd half
VAR = Test for difference in variance 1st half to 2nd half
The following is applying that to study variables

(6-2) Descriptive Statistics of Study Variables:

Descriptive statistics aims to describe study variables as for central tendency, desperation and distribution. In addition, descriptive statistics include some graphs that illustrate the sequence of variables' values. Following is applying this to study variables:

Table (5): Descriptive Statistics of Study Variables

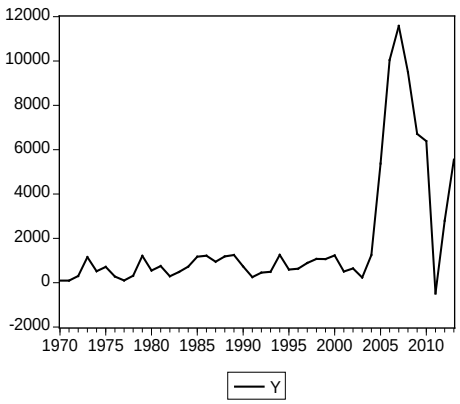
Study Variables	Mean	Standard Deviation	Greatest Value	Least Value	Quartiles		
					First 25%	Middle ٪50	Third 75%
Y (FDI)	1868.23	2843.93	11578.10	482.70-	466.75	743.29	1246.4
X1 (FDP)	71606.17	70159.22	271972.80	7682.49	23035.725	42492.95	90454.45
X2 (INF)	10.68	5.89	23.86	2.10	4.93	10.19	15.51
X3 (UNEMO)	8.14	2.25	12.70	4.83	5.9325	8.30	10.05
X4 (POPU)	57.72	13.67	82.06	36.34	45.15	57.88	69.125
X5 (GGD)	8820.39	7622.12	31768.68	1867.86	3726.975	5649.73	11057.35
X6 (HOUD)	53319.24	55148.48	220752.00	5030.65	15706.675	30662.13	67310.15

X7 (TR)	10760.65	10755.44	37028.50	163.24	1611.275	8902.75	16975.4
X8 (GFCF)	13775.55	11555.71	41054.30	885.96	5819.8	11303.36	17897.675
X9 (SAVI)	14282.09	10835.56	39809.59	3468.35	4592.45	12431.72	17923.5
X10 (DBCGS)	4736.12-	4502.25	350.92-	-22120.28	0	3575.49-	0
X11 (OPEN)	0.52	0.12	0.82	0.32	0.42	0.52	0.605
X12 (EXCE)	2.72	2.23	6.87	0.39	0.7	3.23	5.1975
X13 (INTR)	13.61	2.97	20.33	7.60	12	13.31	15

The previous table shows that:

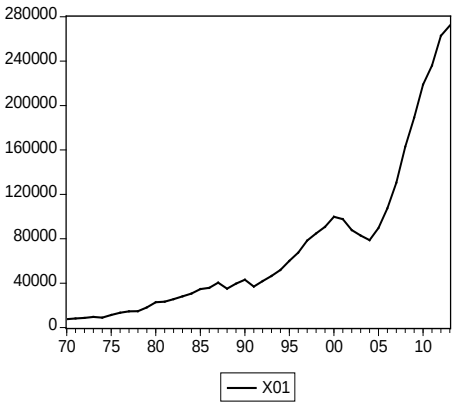
Dependent Variable Y "Foreign Direct Investment in Million Dollars" (FDI):

According to time series, development of this variable shows, as presented in the graph, that from 1970 to 2005 ranged from 94.6 to 5376.6 million dollars. Then it suddenly leapt in 2006 and 2007 to be up to 10042.8 and 11578.1 million dollars respectively. Then, it declined once again in the following period to reach its lowest level in 2011 when the value was 482.7- million dollars which is a negative number indicating escape of foreign capital due to political circumstances that took place in that year. Then, it increased again to reach 5553 million dollars in 2011. This indicates fluctuation in value of this variable particularly from 2005 to 2013. The mean during study period was 1868.23 million dollars with standard deviation of 2843.93 which represented only 2.6% of gross domestic product. This indicates reduction of foreign direct investment value in Egypt.



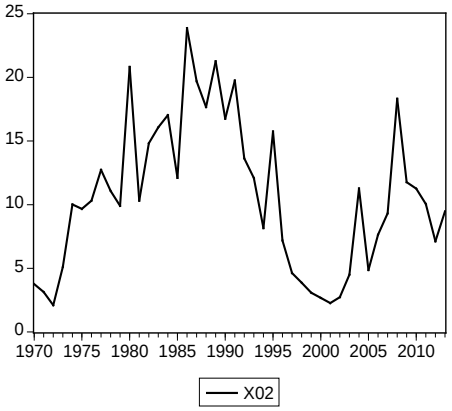
Gross Domestic Product (GDP) X1 in Million Dollars:

It is apparent that the value of gross domestic product was constantly increasing during the period of study except for year 2004 when a slight reduction occurred as gross domestic product was 82923.7 million dollars in 200; then it decreased to 78845.2 in 2004. The mean during study period was 76606.17 million dollars with standard deviation of 70159.22 million dollars. The least value was 7682.49 million dollars in 1970. It was 271972.22 million dollars in 2013 which indicates increase of gross domestic product.



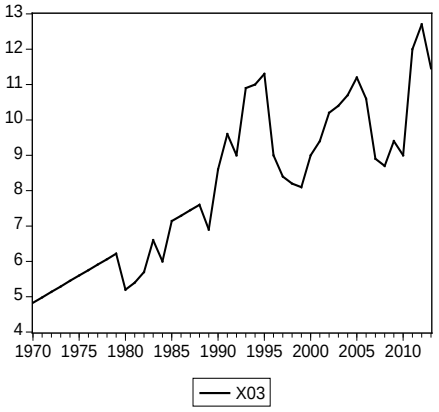
Inflation (INF) X02:

The level of inflation was fluctuating during study period. It reached its lowest level, 2.0%, in 1972. Then, it rose till it reached its highest level, 23.86%, in 1986. The mean during the study period was 10.68% with standard deviation of 5.89%.

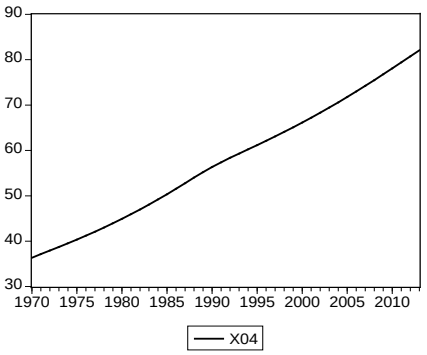


Unemployment (UNEMP) X3:

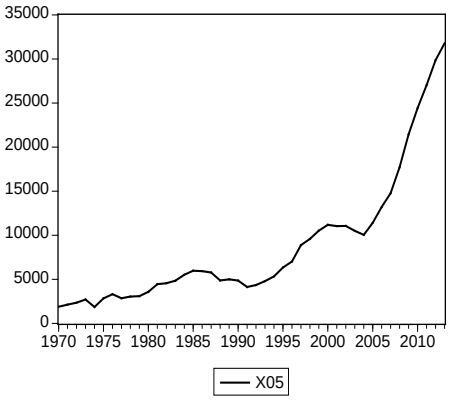
It is obvious that the general trend of unemployment rates in increasing continuously in spite of the decrease in some years. The mean of unemployment rates was 8.14% with standard deviation of 2.25%. It worth noting that unemployment rates in Egypt are estimated from surveys through samples. Also, concepts related to unemployment may vary. Therefore, it is rough statistics with no accurate numbers about unemployment rates



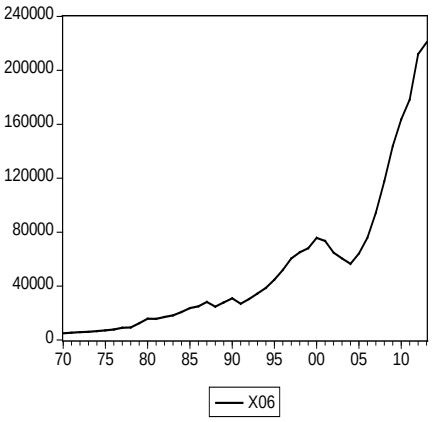
Population (POPU) X4 Million People:
The population increased with similar growth rate during study period as it was 36.34 million people in 1970; this number reached 82.06 million people in 2013. Annual growth rate during that period was 2.9%.



Gross Government Expenditure (GGD) X5 in Million Dollars:
According to the graph, it is obvious that government expenditure was continuously increasing during study period. Increase rate was going up from 2005 to 2013. The least value of government expenditure was 1867.86 million dollars in 1974. This expenditure reached 31768.68 million dollars in 2013. Average government expenditure during this period was 8820.39 million dollars with standard deviation of 7622.12 million dollars.

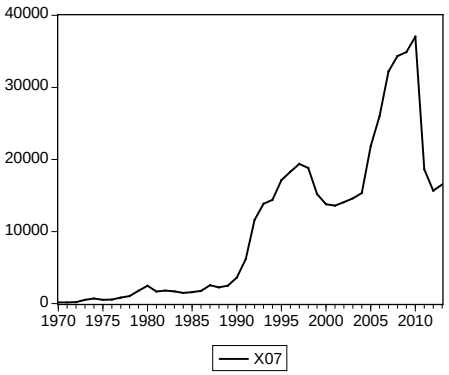


Households' Expenditure (HOUD) X6 in Million Dollars:
After studying chronic development of households' expenditure, it became clear that it was increasing continuously during study period except for the time from 2000 to 2005 in which it decreased. Then, it increased again from 2005 to 2013. The least value of households' expenditure was 5030.65 million dollars in 1970. However, this expenditure reached 220752 million dollars in 2013. Average households' expenditure during the period was 53319.24 million dollars with standard deviation of 55148.48 million dollars. The increase in households' expenditure is mainly due to the increase of population.



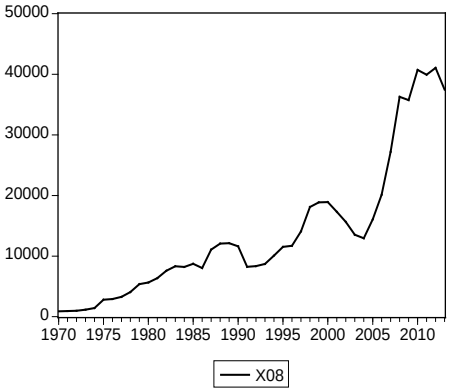
Monetary Reserve (TR) X7 in Million Dollars:

According to the graph, it is obvious that the general trend of the monetary reserve was increasing constantly. However, a sudden decline occurred from 2011 to 2013 because of political instability as the monetary reserve decreased from 37028.5 million dollars in 2010 to 18637.5, 15672.5, 16536.2 in 2011, 2012 and 2013 respectively. The mean of the monetary reserve during study period was 10760.65 million dollars with standard deviation of 10755.44 million dollars.



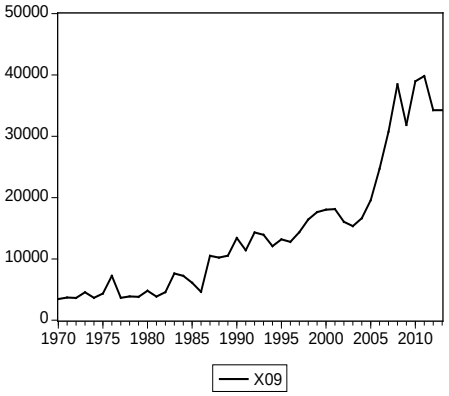
Domestic Investment (Gross Formation of Fixed Capital) X8 (GFCF) in Million Dollars:

The general trend of domestic investment was increasing except for the periods 1991-1993 and 2000-2005. The least value of domestic investment was 886 million dollars in 1970. It reached 41054.3 and 37477.1 in 2012 and 2013 respectively. The mean during study period was 13775.55 million dollars with standard deviation of 11555.71 million dollars.



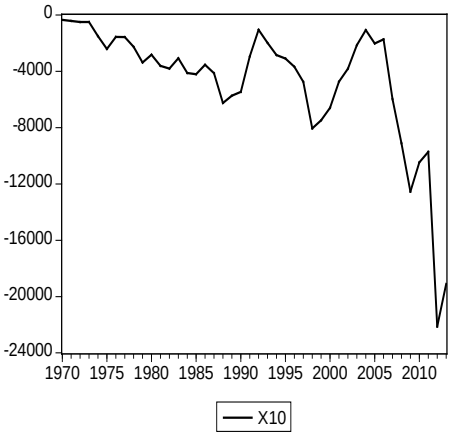
Savings (SAVI) in Million Dollars:

According to the graph, it is obvious that the general trend of savings was increasing despite the decline in some years that witnessed slight decrease such as 2009. The least value was 3468.35 million dollars in 1970. However, the greatest value was 39809.59 million dollars in 2011. The mean was 14282.09 with standard deviation of 10835.56 million dollars.



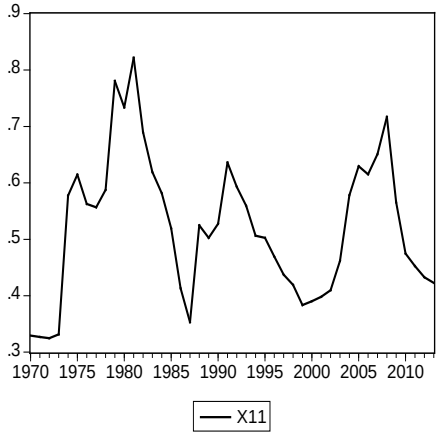
Domestic Balance of Goods and Services (DBCGS) X10 in Million Dollars:

According to the graph, the balance of goods and services was passive throughout study period which means that this balance was suffering from constant deficit. However, this deficit became sever in some years such as 1990, 2009 and 2012. The least value of deficit was 350.92- in 1970 but the greatest value of deficit was 22120.28- in 2012. The mean of the deficit of goods and services balance was 4736.12 million dollars with standard deviation of 4502.25 million dollars.



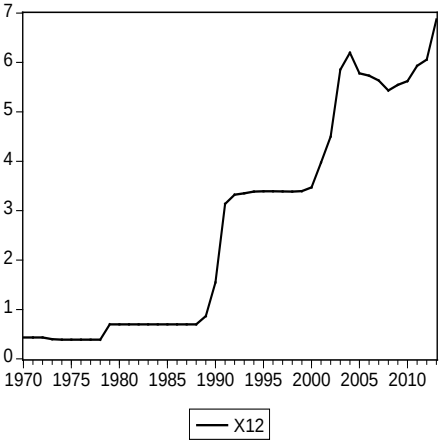
Degree of Trade Exchange (OPEN) X11:

The degree of trade exchange fluctuated during the period of the study. It increased in some years such as 1975, 1979, 1981, 1991 and 2008 and decreased in some years such as 1987 and 1992. The mean during study period was 52% with standard deviation of 12%. The least value was 32% in 1672 and the greatest value was 82% in 1981.



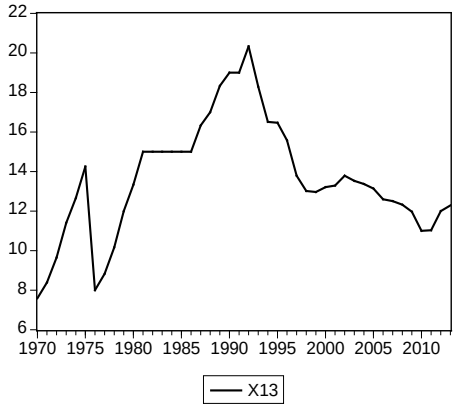
Exchange Rate (EXCR) X12:

According to the graph, it is clear that exchange rate was stable during the period from 1970 to 1978 around 0.4. Next, it suddenly increased to 0.7 in 1970. It kept stable around this rate till 1989. In 1991 in increased to 1.5. Then, it leapt to 3.14 in 1992 and kept stable around this rate till 2001. After that, it kept increasing till it reached 4.5 in 2002. It continued to increase until it reached 6.87 in 2013. Those sudden leaps in exchange rates may be due to the policies implemented by the state liberate exchange rate or stabilize it...etc.



Interest Rate (INTR) X13:

Interest rate increased in 1975 to reach 14%. Next, it decreased in 1976 to reach 8%. Then, it increased again in 1981 to reach 15%. It continued to increase to reach the maximum rate of 20% in 1992. After that, it declined to range from 11% to 12% during the last four years. The mean of interest rate was 13.61 % with standard deviation of 2.97%.



(6-3) Data Normal Distribution Test:

Data Normal Distribution Test is conducted through measures of Skewness, Kurtosis and Jarque-Bera. The following are the results of applying this test to study variables.

Table (6): Results of Appling Jarque-Bera Test to Study Variables

Variables	Skewness	Kurtosis	Jarque-Bera	Probability
Y **(FDI)**	0.27	6.61	2.38	0.464
X1 **(FDP)**	0.32	2.21	1.21	0.450
X2 **(INF)**	0.34	2.21	1.99	0.370
X3 **(UNEMP)**	0.17	1.85	2.66	0.265
X4 **(POPU)**	0.09	1.82	2.63	0.268
X5 **(GGD)**	0.64	2.90	2.42	0.312
X6 **(HOUD)**	0.65	1.04	2.51	0.095
X7 **(TR)**	0.86	1.84	1.47	0.065
X8 **(GFCF)**	0.19	2.45	1.79	0.075
X9 **(SAVI)**	0.06	2.09	2.24	0.216
X10 **(DBCGS)**	0.19	2.25	1.74	0.471
X11**(OPEN)**	0.32	2.55	1.12	0.571
X12 **(EXCE)**	0.36	1.59	4.60	0.100
X13 **(INTR)**	0.12	2.82	0.17	0.916

From the table, it is clear that P-Value of Jarque-Bara test is more than 0.05 for all variables of the study. Therefore, it is valid for conducting statistical analysis.

(6-4) Augmented Dickey Fuller Test of Unit Root:

To test stability of variables, Augmented Dickey Fuller Test of Unit Root was applied on study variables. Results were as follows:

Table (7) Results of Applying Augmented Dickey Fuller Test on Study Variables

Variables	Dickey Fuller Test of Variables at Level		Dickey Fuller Test of Variables at 1st Difference		**Integration Degree**
	T Value	**P-Value**	**T Value**	**P-Value**	
Y **(FDI)**	-1.866	0.3446	-5.157	0.0001	I(1)
X1 **(FDP)**	-2.296	0.9999	-3.695	0.0483	I(1)
X2 **(INF)**	-1.984	0.2926	-10.639	0.000	I(1)
X3 **(UNEMP)**	-1.329	0.6076	-6.276	0.000	I(1)
X4 **(POPU)**	-2.499	0.1000	-1.964	0.301	-
X5 **(GGD)**	-4.434	0.6413	-3.642	0.0499	I(1)
X6 **(HOUD)**	-2.004	0.2998	-3.993	0.0124	I(1)
X7 **(TR)**	-0.618	0.4884	-5.730	0.000	I(1)
X8 **(GFCF)**	-1.407	0.5696	-4.019	0.0032	I(1)
X9 **(SAVI)**	-0.153	0.9366	-7.318	0.0000	I(1)
X10 **(DBCGS)**	-0.431	0.8944	-6.922	0.0000	I(1)
X11**(OPEN)**	-2.399	0.1478	-5.719	0.000	I(1)
X12 **(EXCE)**	-0.081	0.6605	-3.885	0.0046	I(1)
X13 **(INTR)**	-2.277	0.1387	-5.792	0.000	I(1)

From the table, it is obvious that all variables are instable at level as P-value in Augmented Dickey Fuller Test is more than 0.05. These variables become stable after taking the first difference because the mentioned probability valued is less than 0.05. This indicates that these variables are integrated of the first degree and that they are valid for conducting co-integration test except for the variable X04 (population) which did not became stable after the first difference. Therefore, it was excluded from the model.

(6-5) Co-integration Test:

Because all variables are instable at level and integrated of the first degree, co-integration test can be conducted on these variables in order to test the balanced relation among these variables on the long term. Results were as follows:

Table (8) Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	**Eigen value**	**Trace Statistic**	**Critical Values at 0.05 Level**	**Prob.****
None *	**0.767050**	270.3696	197.3709	0.0000
At most 1 *	**0.726305**	209.1784	159.5279	0.0000
At most 2 *	**0.686848**	154.7574	125.6154	0.0003
At most 3 *	**0.57322**	105.9926	95.75366	0.0082
At most 4 *	**0.482352**	74.52030	69.81889	0.0201
At most 5	**0.420428**	46.86498	47.85613	0.0618
At most 6	**0.322157**	23.95541	29.79707	0.2023
At most 7	**0.104081**	7.624169	15.49471	0.5064
At most 8	**0.069118**	3.008156	3.841466	0.0828

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

According to the table, it is obvious that:

- Trace test indicates that there are five co-integration relations among variables at the probability level of 0.05 because at most 5 the value of trace was less than the critical value at probability level of 0.05. Trace value was 46.86 whereas the critical value was 47.856 at the level of 0.05. Calculated probability level was 0.0618 which was more than 0.05 which indicates existence of five balanced relations among variables on the long term.

To represent balanced relation between dependent variable and independent variables using co-integration the following regression equation was used:

Table (9): Estimation of Common Co-integration Coefficients

Variable Symbol	Variable Description	Coefficient	Standard error	T Test	Probability Level
Static		7267.7			
X01(GDP)	Real Gross Domestic Product	0.015	0.006	2.679	0.013
X02(INF)	Inflation	94.341-	22.024	4.284-	0.000
X03(UNEMP)	Unemployment	266.162-	89.623	2.970-	0.012
X05(GGD)	Government Expenditure	0.8429-	0.146	5.755-	0.000
X06(HOUD)	Households' Expenditure	0.134	0.061	2.214	0.037
X11(OPEN)	Trade Exchange Rate	2067.629	391.008	5.288	0.000
X12(EXCR)	Exchange Rate	916.773-	127.99	7.1625-	0.000
X13(INTR)	Interest Rate	82.362-	26.883	3.064-	0.005

0.833 = R square

From the previous table, it is obvious that:

- ✓ **The variables of:** real gross domestic product, households' expenditure and trade exchange rate have positive impact on foreign direct investment as:
- A million-dollar increase in gross domestic product leads to a 0.015 million- dollar increase in foreign direct investment.
- A million-dollar increase in households' expenditure leads to a 0.134 million-dollar increase in foreign direct investment.
- 1% increase in trade exchange leads to a 2067.6 million-dollar increase in foreign direct investment.
- ✓ **The variables of:** inflation, unemployment, government expenditure and exchange rate have negative impact on foreign direct investment as:

- 1% increase in inflation rate leads to a 94.341 million-dollar decrease in foreign direct investment.
- 1% increase in unemployment rate leads to a 266.2 million-dollar decrease in foreign direct investment.
- A million-dollar increase in governmental expenditure leads to a 0.8429 million-dollar decrease in foreign direct investment.
- One-pound increase in exchange rate leads to a 916.8million-dollar decrease in foreign direct investment.
- 1% increase in interest rate leads to an 82.4 million-dollar decrease in foreign direct investment.

✓ **The variables of:** population, domestic investment, savings and balance of goods and services were not included in the model because their probability was not stable.

The explanatory power of the model was R square = 0.833, i.e. the explanatory variables in the model illustrate about 83.3% of the changes that occur to foreign direct investment which is high explanatory ability.

(6-6) Using the Model for Prediction:

To predict the dependent variable, independent variables are predicted first. Then, using the model, the dependent variable is predicted. To predict the independent variables, Statgraphics program is used to select the best model for predicting independent variables according to many statistical criteria. Results were as follows:

Table (10): Results of Predicting Study Variables

Years Variables	Used Model	2014	2015	2016	2017
Real Gross Domestic Product (million dollar)	ARIMA(1,1,2)	286455	294794	301757	301757
Inflation Rate	ARIMA(1,1,2)	٪16.31	٪14.4	٪13.3	٪12.5
Unemployment	ARIMA(1,1,2)	٪11.4	٪11.6	٪11.8	٪12.0
Governmental Expenditure (million dollars)	Exp smoothing	33956	36122	38287	40453
Households' Expenditure (million dollars)	ARIMA(2,2,2)	236684	259133	275085	287912
Trade Exchange Rate	Random walk	0.422	0.424	0.426	0.428
Exchange Rate	ARIMA(0,1,1)	7.33	7.49	7.64	7.80
Interest Rate	Random Walk	٪12.4	٪12.5	٪12.6	٪12.7
Estimations of independent variable (foreign direct investment)		8816	9994	10279	10029.8

Results:

After analyzing study data, the researcher found the following results:

- ✓ Average Foreign direct investment represents only 2.6% from average gross domestic product which indicates reduction of its value.
- ✓ From normal distribution test, it was found that study variables follow normal distribution.
- ✓ From augmented Dickey Fuller test of unit root, it is obvious that the variables are integrated of the first degree i.e. they become stable after taking the first difference. This indicates that they are integrated with equal degrees so these variable are valid for conducing co-integration test except for the variable X04 (population) which did not became stable after the first difference. Therefore, it was excluded from the model.
- ✓ Estimation of co-integration equation showed that the variables of real gross domestic product, households' expenditure and trade exchange rate have positive impact on foreign direct investment. However, variables of inflation, unemployment, government expenditure and exchange rate have negative impact on foreign direct investment. Probability of variables of population, domestic investment, savings and balance of goods and services did not appear. The explanatory power of the model is 83.3% which is high explanatory ability.
- ✓ Independent variables were predicted using various models selected via the statistic program Statgraphics as choice was according to many statistic criteria. The best models were chosen for prediction.
- ✓ After predicting independent variables, it was possible to predict the dependent variable (foreign direct investment). It was found that it increases when the variables that have positive impact on it increase. However, this increase remains a slight one. Hence, it is necessary to improve investment climate so that it can increase in a way that participates in enhancing development.
  - ✓ The Egyptian government must:
    - Make legislative frameworks to protect and encourage these investments.
    - Facilitate procedures of inflow of direct investments.
    - Offer proper guarantees and incentives; and liberate remittance of profits and capital.
    - Facilitate administrative procedures especially through adopting one-window system.
    - Establish new agencies to support and encourage these investments.
    - Issue new laws or update previous ones.

References:

1. Bilal Momo, The impact of foreign direct investment and domestic investment on economic growth, University of Kasdi Mirbah, Algeria, 2013.
2. Buthaina injury. The impact of FDI in economic growth in Jordan (1990-2006), studies of Administrative Sciences, Vol. 36, Number 2, Jordan, 2009.
3. Dina Omar, The impact of exports on FDI flow in selected Arab countries, the development of Iraq, the number (39), Iraq, 2007.
4. Wishah Razak. Determinants of FDI, Arab Planning Institute, Kuwait, without date.
5. Samarkand Kawkab Elgamil, Recent trends in international financial business, Dar Elkhamid for publication, Jordan, 2001.
6. www.wto.org/ecommerco/0066/pdf.15.
7. UNCTAD. World Investment Report 2007. UN, New York, USA, 2008.
8. OCDE. Définitions de déférence détailles des investissements internationaux, Paris, 1983.
9. Ibrahim Ngouhouo. Les investissement directs etrangers en Afrique Centrele: attractivite et effets economique, Universite de sud Toulon-Var, France.
10. Amira Hassaballah Mohammed, Determinants of Foreign direct and indirect investment (Comparative Study: Turkey, South Korea, Egypt), Aldar Elgamaia, Alexandria, p. 19, 2004.
11. Hatem Alkaranshawy. Investment in the context of globalization: trends and requirements, investment and financing conference, the Arab Organization for Administrative Development, Cairo, 2006.
12. Mira Wilkins. Two literatures, two story lines: is a general paradigm of foreign portfolio and foreign direct investment feasible? Transnational corporation, vol 8, no 1, April 1999.
13. Saad Al-Kawaz. Foreign investment flows and their impact on the economies of developing countries, the development of Iraq, Mosul, 2005.
14. Abdulsalam Aboqahv. International Business Management, Second Edition, Dar Alishaa, Alexandria, 1998.
15. Hassan Khidr. Foreign Investment, definition and issues, Magazine Development Bridge, Arab Planning Institute, Kuwait, number 32, 2004.
16. Hassan Kharboush, Abdalmoatiy Rida. Investment and financing between theory and practice, Zahran Publishing House, Oman, 1999.
17. Farid Al-Najjar, International investment and tax coordination, Youth University Foundation, Alexandria, 2000.
18. Wishah Razak. Determinants of FDI, Arab Planning Institute, Kuwait, without date. The third column has been done by the author.
19. Deepak Mishra et al., Inflow Private Capital and Growth. Finance and Development, vol 38, no 2, June 2001.

20. UNCTAD. World Investment Report 2003: The shift towards services, New York and Geneva, 2004.
21. Arab Organization for Investment Guarantee, Investment Guarantee Bulletin, Issue second quarterly, Kuwait, 2007.
22. Salem Saeed Alqahtani, the future of investment in Saudi Arabia, Investment and Finance Conference, the Arab Organization for Administrative Development, Cairo, 2006.
23. UNCTAD. World investment report, trends and determinants, p. 89, 1998.
24. UNCTAD. World investment report, trends and determinants, p. 89, 1998.
25. UNCTAD. World Investment Report 2003: The shift towards services, New York and Geneva, 2004.
26. Walid Abd Mawlah, Gravity models for the interpretation of trade flows, the Arab Planning Institute, No. 97, 2010.
27. United Nations. ESCWA, the policies of foreign direct investment and attract interface in the ESCWA region, improve the climate for foreign direct investment and mobilizing domestic savings with the study of cases of Jordan, Bahrain and Yemen, 2007.
28. Faris Fadil. The importance of foreign direct investment in the Arab countries with a comparative study between Algeria, Egypt and Saudi Arabia, and the University of Oran, Algeria, 2004.
29. Arab Organization for Investment Guarantee, Multinational companies and non-traditional relationship to foreign direct investments, bulletin Investment Guarantee, First Issue, 2007.
30. United Nations Conference on Trade and Development (UNCTAD), World Investment Report 2005, New York and Geneva, 2004.
31. http://capmas.gov.eg/book.aspx.
32. World Economic Forum. The Global Competitiveness Report, p.386, 2011-2012, http://www.weforum.org.
33. United Nations Development Program (UNDP), Human Development Report: The Real Wealth of Nations, Human Development Paths, p. 203, 2010.
34. http://www.alarabia.net/articles/2012/09/08/236856.html
35. Central Agency for Public Mobilization and Statistics, Statistical Yearbook, Egypt, 2011.
36. Abdullah Abdulkarim, Investment guarantees in the Arab countries, the House of Culture for Publishing and Distribution, First Issue, Jordan, 2008.
37. Reda Abdelsalam, Determinants of FDI in the era of globalization, modern library, Egypt, 2007.

38. Hussain Mehran, Foreign direct investment in Egypt and the possibilities developed in the light of local, regional and international variables, Egyptian Journal for Planning and Development, Volume VIII, Issue 1, 2000.
39. Law 83 of 2002, the Official journal, number 22 bis, 5 June, 2002.
40. Ministry of Investment, Investment Performance Report for the fiscal year 2009-2010, Egypt, 2011.
41. UNCTAD. Web table5, (FDI) inward as a percentage of gross fixed capital formation, 1990-2010.
42. The World Bank «Data Bank», http://www.worldbank.org/data/Vieus/Reports/TableVieus.aspx.
43. UNCTAD. Web table 7. (FDI) inward stock as a percentage of gross domestic product, 1990-2010.
44. The World Bank «Data Bank», http://www.worldbank.org/data/Vieus/Reports/TableVieus.aspx.
45. Amira Hasaballah Mohammed, Foreign direct investment and indirect economic environment in the Arab determinants, University House, Alexandria, 2005.
46. Arab Organization for Investment Guarantee, The investment climate in 2006, Kuwait, p. 18, 2007.
47. World Economic Forum « The Global Competitiveness Report, from (2001-2002) - (2011-2012).
48. Arab Organization for Investment Guarantee. The investment climate in 2006, Kuwait, p. 105, 2007.
49. Transparancy International, Indice de perception de la corruption, Différentes Années, (1996, 2010). http//www.transparancy.org/researsh/cpi.
50. The World Bank, The fourth annual report, Washington, 2007.
51. The World Bank and the International Finance Corporation, Doing Business, p. 161, Report 2011.
52. United Nations Conference on Trade and Development (UNCTAD), World Investment Report, New York, 2005.
53. UNCTAD. web table 28. Inward (FDI) performance and potential Index rankings, 1990-2010.
http://archive.unctad.org/sections/dite_dir/docs/WIR11_
web%20tab%2028.pdf.
UNCTAD. World Investment Report 2004: The shift towards services, New York and Geneva, p281-289, 2004
UNCTAD. World Investment Report 2006: (FDI) from Developing and Transition Economies, Implication for Development, New York and Geneva, p277, 2006.
Transparency International. Corruption perceptions Index, Différentes Années, http//www.transparancy.org/researsh/cpi

World Economy Forum. The Global Competitiveness Report, Différentes Années, http://www.weforum.org.
PNUD. Rapport sur le Développement Humain, Différentes Années, http://hdr.undp.org.
The World Bank and the International Finance Corporation. Doing Business Report, Différentes Années, http://www.doingbusiness.org/.
54 The PRS Group. International Country Risk Guide.
55. Euromoney. Country Risk September 2010: Full Results.
56. Institutional Investor. Institutional Investor Magazine, 2011.
57. The World Bank. World Development Indicators, 1997-2004. http://www.iaigc.net/?id=7&sid
58. UNCTAD. World Investment Report 1999. UN, New York, USA, 2000.
59. Omar Sakr, Issues of economic globalization and contemporary, University House, Lebanon, 2001.
60. Nauro F. Philip Harms and Henrich W. Urspring. Do Civil and Political Repression Really Boost Foreign DI, Journal of Development Economics, vol 70, no 4, 2002.
61. Paul Samlesson and Michael Mandel, Economy, Alahlia for publication, Jordan , 2001.
62. Karl Montfort. Easing the Way for Foreign Direct Investment. The Economic Journal, no 26, London, 2002.
63. Moon Joong Tcha, A Note on Australia's Inward and Outward Direct Foreign Investment. www.balckwell-senergy.com/ link/doi, 2000.
64. Magnet Ram. Export with External Capital Inflow and Economic Growth in Developing Countries with Special Reference to South Asian Countries. Indian Economic Journal, vol 27, 1980.
65. United Nations. Implication of Euro Currency for the ESCWA Region, New York, 2001.
66. World Bank. DEC Notes, Research Finding, What Determinants Foreign Direct Investment? no 16, Washington, 1996.
67. P.S. Andersen and P. Hainaut. Foreign Direct Investment and Employment in the Industrial Countries. www.bis.org/pobl/ work61.htu1998.
68. Ghadeer Saad Alhamoud, The relationship between the public and private investment in the framework of the Saudi Economic Development, College of Administrative Sciences, King Saud University, Saudi Arabia, 2004.
69. This is known in the literature of the investment impact of rivalryز
70. Kaarima Kodri, Foreign direct investment and economic growth in Algeria, Abu Bakr Belcaid University, Tlemcen, Algeria, 2011.
71. Marouane Alaya et Autres. A quelques conditions les IDE simulant-ils la croissance? IDE, croissance dans les pays mediterraneens, Monde en developpement, vol 37, no 148, 2009.

72. Ali Abdelfattah Aboshrar, World Economy: theories and policies, Dar Almasira, 2nd edition, Amman, Jordan, 2010.
73. Data that has been reliable came from the World Bank following site, http://databank.worldbank.org/data/home.aspx.