DETERMINANTS OF FDI INFLOWS AND OUTFLOWS OF DEVELOPING NATIONS

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By

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This Thesis is Dedicated to

Late Smt. Nilima Namdev Bandekar (Mother)

Late Shri Namdev Shamba Bandekar (Father)

Late Shri Prabhakar Shamba Bandekar (Uncle)

Late Mrs. Sumangala Prabhakar Bandekar (Aunt)

Late Shri Yeshwant Bhalchandra Natekar (Father-in-law)

DECLARATION

I, **Bandekar Bipin Namdev,** hereby declare that the work reported in this thesis entitled "**Determinants of FDI Inflows and Outflows of Developing Nations**" submitted to **Goa University, Goa** in partial fulfilment of the requirements for the award of the degree of Doctor of Philosophy in Commerce is my original and independent research work carried out during the period July 2013 to June 2019 under the supervision and guidance of **Dr. K. G. Sankaranarayanan, Associate Professor and Director, Zantye College Research Centre, Narayan Zantye College of Commerce, Bicholim, Goa**.

This work has not previously formed the basis for the award of any degree, diploma, certificate or similar other title of this or any other university. The references made to previous works of other authors have been clearly indicated and duly acknowledged in the list of references.

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CERTIFICATE

This is to certify that the work reported in this Ph.D. thesis entitled "**Determinants of FDI Inflows and Outflows of Developing Nations**" submitted by **Bandekar Bipin Namdev** at **Goa University, Goa** for the award of the degree of Doctor of Philosophy in Commerce is a bonafide record of his original work carried out by him under my supervision and guidance.

This work has not been submitted elsewhere in part or in full to any other university or institution of learning for the award of any Degree, Diploma, Associateship, Fellowship or similar other title.

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ABSTRACT

Capital and investment are the main pillars of economic development of every nation. However, the shortage of domestic capital restricts the growth of developing nations. Low GDP, Lack of scientific and technological base of manufacturing and other factors hinder the growth of developing nations. Foreign Direct Investment (FDI) sorts out these drawbacks for the growth of developing and emerging nations. This research has been conducted to study the determinants of FDI inflows and outflows of developing nations.

The review of literature indicated that there is a limited research on identification of factors that influence the inflow of FDI and have focused on pull factors of countries that attract or deter FDI inflows. Similarly, most of the studies focused on host country determinants, and limited attention is given to source or home country determinants or push factors of outward FDI. Hence, the present study provides insights by locating the additional determinants of FDI inflows and outflows.

The study reflects the trend and growth of FDI inflows and outflows of developing nations. Also, two major panel data regression models have been developed in this study. The first model explains the influence of socio, economic, political factors on FDI inflows and is based on Dunning's Eclectic Theory of FDI (OLI Paradigm). The model recognizes the location-specific advantages of countries as the key determinants of FDI. The second model presents the influence of these factors on FDI outflows and is based on Dunning's Theory in the field of FDI outflows i.e. Investment Development Path (IDP). Thus, study examines the significant factors that pulls FDI inflows and pushes FDI outflows with regards to select developing nations together as well as oil-exporting and non-oil exporting developing nations separately.

This study uses secondary data i.e. time series data of 153 and 136 developing nations over a period of 47 years to study the trend and growth of FDI inflows and FDI outflows respectively and the panel data of 92 and 56 developing nations for 20 years to study the factors influencing FDI inflows and outflows respectively. Panel Data Modelling has been employed in the study for data analysis. The Panel Data Modelling developed three models i.e. Pooled OLS, Fixed Effect and Random Effect

Model, which are tested using F Test, Breusch-Pagan Lagrange Multiplier Test and Hausman Test. These models were used to test the hypothesis and to draw conclusions.

The study revealed that FDI inflows and outflows of developing nations show an increasing trend from 1970 to 2016 with few ups and downs in between. The absolute growth, annual growth rate and Average Annual Growth Rate of inflows and outflows were overall positive. The Compound Annual Growth Rate (CAGR) of inflows is 13.79% whereas of outflow is 22.72%.

The study confirms that five factors namely Market size (GDP), Infrastructure development (EPC), Imports of goods and services, Availability of Natural Resources and Political Stability create a positive impact on the inflow of FDI to developing nations. Out of these, three factors i.e. Market size (GDP), Infrastructure development (EPC) and Political Stability are positive and key factors in oil exporting nations whereas five factors i.e. Infrastructure development (EPC), Imports, Natural Resources, Political Stability, Reserves and Corruption control are positive and significant in non –oil exporting nations.

The study also found that three factors viz. Economy size (GDP), Trade openness and Infrastructure Development (EPC) have a positive impact on FDI outflows whereas Imports and Exports of goods and services create a negative impact on the flow of FDI out of developing nations. Same result is also noted in oil-exporting developing nations. Whereas, along with Economy size (GDP), three more factors i.e. Labour cost, Natural resources and Corruption control are found to be the key determinants for flow of FDI out of non-oil exporting developing nations.

The study also infers that Market size or Economy size (GDP) and Infrastructural development (EPC) are the two common factors having a positive impact on the flow of FDI into and FDI out of developing nations. Import supports FDI inflow and restricts FDI outflow.

Finally, the research work identified the determinants of FDI inflows and outflows and concluded that size of the market or economy measured by GDP, development of

infrastructure facilities, availability of natural resources and control over corruption are the four main determinants which pull as well as push FDI of developing nations.

Theoretical contributions of this study with respect to FDI inflows reflect that the outcome partially complies with Dunning's Eclectic Theory or OLI Paradigm (i.e. Ownership Advantage, Location Advantage, Internalization) which considers the significance of country specific variables (i.e. Location Advantage variables) for FDI inflows. The findings comply with the location advantage aspects such as taxation and fiscal policy of developing nations (Reserves and GDP), Research and development advantages (Infrastructure development), Government's regulatory framework (Imports of goods and services), Geographical environment (Availability of natural resources), Cultural environment, production and transportation cost (control of corruption) and political environment (Political stability).

This study found that Size of the economy measured by GDP has a positive impact on FDI outflows of developing nations and therefore theoretical contributions with respect to FDI outflows of this study comply with the dominant theory of FDI outflow i.e. Investment Development Path (IDP) propounded by Dunning (1981) which states that country develops and its own firms invest overseas and further addition of Dunning (2001) that FDI outflows are totally dependent and influenced by the home country's level of economic development or growth measured by GDP or GDP per capita**.**

The above findings bring out a theory that the factor endowments (High Labour Cost and Abundant Natural Resources) of home countries may lead to an exodus of FDI to developed nations and other developing nations.

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LIST OF ABBREVIATIONS

$	Dollar
AAGR	Average Annual Growth Rate
Adj. R^2	Adjusted R-squared
ANOVA	Analysis of Variance
ARIMA	Auto Regressive Integrated Moving Average
ASEAN	Association of South East Asian Nations
CAGR	Compound Annual Growth Rate
Coef	Coefficient
Const	Constant
CPI	Consumer Price Index
CV	Coefficient of variation
ECM	Error Component Model
EGLS	Estimated Generalized Least Squares
EPC	Electric Power Consumption
F	F Statistics
FDI	Foreign Direct Investment
FE Model	Fixed Effect Model
FGLS	Feasible Generalized Least Squares
FII	Foreign Institutional Investments
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GLS	Generalized Least Squares
GMM	Generalized Moments of Methods
GNI	Gross National Income
GNP	Gross National Product
ICTs	Information and Communication Technologies
IDP	Investment Development Path
IMF	International Monetary Fund

IO	Industrial Organization
IPR	Intellectual Property Rights
LCU	Local Currency Unit
LM Test	Lagrange Multiplier Test
LSDV	Least Squares Dummy Variable
LTD	Long Term Debt
MENA	Middle East and North Africa Region
MNCs	Multi - National Companies
MNEs	Multi - National Enterprises
OECD	Organisation for Economic Co-operation and Development
OFDI	Outward Foreign Direct Investment
OLI	Ownership Locational Internalization
OLS	Ordinary Least Square
p −v	P - value
R^2	R⁻ squared
RE Model	Random Effect Model
REER	Real Effective Exchange Rate
S.E.	Standard Error
SD	Standard Deviation
t-r	t-ratio
U.S.	United States
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar
VAR	Vector Auto Regression
VECM	Vector Error Correction Model
WDI	World Development Indicators
WGI	Worldwide Governance Indicators
WIR	World Investment Report
WTO	World Trade Organization
z	z value

Chapter I
Introduction

In the modern era, it is a fundamental truth that capital and investment are the main pillars of economic development of every nation. Savings, capital and investment along with human resource, are the required nerve centre of development. However, the shortage of domestic capital restricts the growth of developing nations. Low GDP keeps the savings and investment rate low, which leads to restricted growth. Lack of scientific and technological base of manufacturing is another factor which hinders the growth of developing nations. FDI sorts out these drawbacks for the growth of developing and emerging nations.

Capital is treated as the engine of economic growth. Traditionally, the various sources of capital for developing countries were in demand of raw material by industrialised countries or foreign aid or loans from foreign banks. In recent years, besides other sources, FDI (Foreign Direct Investment) as a source of funds has gained very high importance.

FDI is a direct investment into production or business in a country, by a company in another company, either by buying a company in the target country or by expanding operations of a present business in that country. FDI is in contrast to portfolio investment, which is a passive investment in securities of another country such as stocks and bonds.

FDI is an investment- involving a long term relationship and showing a lasting interest and control of a resident entity in one nation, in an enterprise resident in nation other than that of the foreign direct investor.

FDI is defined as net inflows of investment (inflows - outflows) to acquire a lasting management interest (10% or more of voting stock) in an enterprise operating in an economy other than that of the investor. FDI usually involves participation in management, joint venture, transfer of technology and expertise. (UNCTAD)

There are two types of FDI: inward and outward, i.e. net FDI inflow (positive or negative) and "stock of FDI" which is a cumulative number for a given period. FDI excludes investment through the purchase of shares. FDI has many forms. Broadly,

FDI includes mergers and acquisitions, building new facilities, reinvesting profits earned from overseas operations and intracompany loans. The foreign direct investor may acquire voting power of an enterprise in an economy through methods such as incorporating a wholly owned subsidiary or company anywhere, acquiring shares in a related enterprise, through merger or acquisition of an unrelated enterprise, participating in an equity joint venture with another investor or enterprise.

FDI is seen as a mean to supplement domestic investment for achieving a higher level of economic growth and development. FDI offers benefits to the domestic industry as well as to the consumer by providing opportunities for technological upgradation, access to global managerial skills and practices, optimal utilization of human and natural resources, making industry internationally competitive, opening up exports market and providing access to international quality goods and services.

Foreign investment and technology play an important role in the economic development of a nation. Most of the advanced countries of today have developed due to foreign investment, which played a pivotal role in making them high income countries. Globalization has opened the doors almost all over the globe for utilizing international financial flows. Developing countries are recipients of funds from the international market for their development. FDI has become a major engine in the global growth of the economies.

1.1 Foreign Direct Investment (FDI) – A Theoretical Background

1.1.1 Meaning of FDI:

Foreign Direct Investment (FDI) is an investment made by a company or individual in one country with business interests in another country, in the form of either starting business operations or purchasing business assets in the other country, such as ownership or controlling interest in a foreign company.

FDI is termed as a company of one nation putting up a physical investment into building a facility (factory) in another country. The direct investment used to create the buildings, machinery and equipment does not agree with making a portfolio investment, an indirect investment.

In recent years, due to fast growth and change in global investment patterns, the meaning of FDI has been expanded to include all the acquisition activities outside the investing firm's home country.

FDI, therefore, may take many forms, such as the direct acquisition of foreign firms, constructing a facility or investing in a joint venture activity or forming a strategic alliance with one of the local firms with an input of technology licensing of intellectual property.

FDI is an important factor in acquiring investment and helping the local market growth with foreign finances when the local investment is unavailable. There are various formats of FDI and companies should research well before actually investing in a foreign country.

It is evident that FDI can be a win-win situation for investor and other party involved. The investor can get cheaper access to products or services, and the host country can get valuable investment unattainable locally.

There are various ways through which FDI can be acquired, and there are some important questions the firms must answer before actually implementing on FDI strategy.

1.1.2 Definitions of FDI:

1] Definition of Foreign Direct Investment (FDI) as per UNCTAD

Definitions of FDI are contained in the Balance of Payments Manual: Fifth Edition (BPM5) (Washington, D.C., IMF, 1993) and the Detailed Benchmark Definition of FDI: Third Edition (BD3) (Paris, OECD, 1996).

BPM5 defines "Foreign Direct Investment is an investment made to earn a lasting interest in enterprises operating outside the economy of the investor." In Foreign Direct Investment, the main aim of the investor is to make an effectual voice in the management of the enterprise. The foreign entity or group of entities that invests is termed the "direct investor". Unincorporated enterprise or incorporated enterprise, i.e. a branch or subsidiary, in which

direct investment is made, is referred to as a "direct investment enterprise". The BPM5 recommends a threshold of 10 per cent of equity ownership to qualify as a foreign direct investor.

Capital provided by the direct investor either directly or through other enterprises related to the investor should be classified as FDI. The forms of investment classified as FDI are equity capital, the reinvestment of earnings and the provision of long-term and short-term intra-company loans (between parent and affiliate enterprises).

BD3 of the OECD defines "direct investment enterprise is an incorporated or unincorporated enterprise in which a single foreign investor either owns 10 per cent or more of the ordinary shares or voting power of an enterprise or owns less than 10 per cent of the ordinary shares or voting power of an enterprise but still maintains an effective voice in management". An effective voice in management means that direct investors are in a position to influence the management of an enterprise and does not imply that they have absolute control. The most important feature of FDI, which distinguishes it from foreign portfolio investment, is that it is done to exercise control over an enterprise.

2] Definition of Foreign Direct Investment (FDI) as per OECD.

Foreign Direct Investment (FDI) is an investment in a business by an investor from another country for which the foreign investor has control over the company purchased. Control means owning 10% or more of the business. Businesses that make the foreign direct investment are often called Multinational Companies (MNCs) or Multinational Enterprises (MNEs). An MNE may make a direct investment by creating a new foreign enterprise, which is called a Greenfield investment or by the acquisition of a foreign firm, either called an acquisition or Brownfield investment.

1.1.3 Types of FDI:

FDI is categorized into different types based on the type of activity, type of entry, and direction of flows, which is explained below.

1.1.3.1 Based on the type of activity.

Based on the type of activity conducted, FDI is of three types.

1. Horizontal FDI: In the case of horizontal FDI, the company does all the same activities abroad as at home. For example, Toyota assembles motor cars in Japan and UK.

2. Vertical FDI: In vertical FDI, different types of activities are carried out abroad. In case of forward vertical FDI, the FDI brings the company nearer to a market (for example, Toyota purchasing a distributorship of the car in America). In the case of backward vertical FDI, the international integration goes back towards raw materials (for example, Toyota possessing majority status in tyre manufacturer or a rubber plantation).

3. Conglomerate FDI: In this type of investment, the investment is made to acquire an unrelated business abroad. It is the most surprising form of FDI, as it requires overcoming of two barriers simultaneously, first entering a foreign country and second working in a new industry.

1.1.3.2 Based on the type of entry.

Based on the type of entry, FDI is of two types.

1. Greenfield entry: Greenfield entry refers to activities or assembling all the elements right from scratch. For example, Honda's entry in the UK.

2. Foreign takeover: Foreign takeover means acquiring an existing foreign company. A foreign takeover is usually called Mergers and Acquisitions (M&A). However, internationally mergers are very less, which account for less than 1% of all foreign acquisitions, - for example, Tata's acquisition of Jaguar land Rover.

1.1.3.3 Based on the direction of flow.

Based on the direction of flow, FDI is of two types.

1. <u>Inward FDI:</u> (FDI Inflow) Inward FDI refers to receiving of FDI or flow of FDI in the country from abroad.
2. <u>Outward FDI:</u> (FDI Outflow) Outward FDI refers to the flow of FDI from home country to a foreign country.

1.1.4 Characteristics of FDI:

Before reviewing the theories of FDI, it may be useful to discuss the major characteristics of FDI.

1. FDI generally contains a package of assets including equity capital, technology, management skill, marketing skill, etc. (Hymer, 1976). However, FDI can occur even without the movement of funds from one nation to another. For example, Multi National Enterprises (MNEs), in many cases, exchange knowledge (technology, skills, etc.) or physical capital (machinery, equipment, etc.) against equity claims on a firm of the host country or FDI may arise through the reinvested earnings of existing affiliates of foreign firms.
2. The MNEs directly control the firms in which FDIs are made. MNEs mostly perform value adding activities by controlling a foreign affiliate through FDI. In later years, However, MNEs have been increasingly going for non-equity forms of involvements, i.e. cooperative agreements and outsourcings. Hence, the hierarchical control and full internalisation no longer remains a first-best option to MNEs because of improved enforceability of contracts and reducing transaction and monitoring costs. The developments related to globalisation and the widespread application of Information and Communication Technologies (ICTs) have made it easier for all firms to monitor, identify and establish collaborative ventures.
3. FDI usually originates from the select oligopolistic industries of the home countries and flows into the same industries belonging to host countries

(Hymer 1976). The goods and services that MNEs produce overseas are normally the same which they produce at home (Hennart 2007). However, MNEs are increasingly involved in the international production networks in which different stages of the production process of a product takes place in different countries.

4. FDI or MNEs are more attracted towards industries with four characteristics like high levels of Research & Development (R & D) in relation to sales; large share of professional and technical employees in their work forces, new and /or technically complex products and products creating differentiation through advertising, marketing, etc. (Markusen 1995, UNCTAD-WIR 2005). Further, FDI through its vehicle MNEs concentrates in more competitive or dynamic sectors possessing high growth rates and using the latest technologies (e.g. electronics, communication equipments and industrial machinery). Also, they concentrate in mature sectors where economies of scale, branding and advertising determine market share (e.g. petroleum products, chemicals, automobiles, food and beverages and consumer durables).

5. MNEs are not geographically diversified, and FDI is mostly concentrated in wealthy industrialized countries having high income levels, consumption and technological capabilities (Narula and Dunning, 2000) and another group of more advanced developing nations (e.g. newly industrializing and emerging Asian economies like India, China, Brazil, South Africa, Russia).

6. The quality of FDI differs due to the different motives of MNEs' cross-border operation, strategies and scope of MNE operations and differences like firm-specific assets accessed/possessed by the FCFs (Lall and Narula, 2004).

7. As against the Greenfield FDI through which a new plant is set up from scratch, the mergers and acquisitions account for a greater share of the world FDI flows (UNCTAD 2009)

1.1.5 Theories of FDI:

Theories of FDI assert that the basis for such type of investment lies in the cost of transaction of transferring technical and other knowledge and market imperfections. In the world of perfect markets, the multinational enterprises will not exist, and there would be no FDI. Some important theories on FDI are as follows:

1.1.5.1 Theories on FDI Inflow:

a. Industrial Organisation (IO) Theory:

Based on the insight of Industrial Organisation (IO) Theory originally developed by Bain (1956, 1959), S. H. Hymer (1976) proposed a path-breaking theory of FDI in his Ph. D. dissertation in the year 1960 that was published in the year 1976. Hymer's (1976) version of IO theory of FDI states two major factors causing the most common type of FDI. The first factor relates to the chief motive of an oligopolistic firm to overcome competition or to eliminate conflicts, which arises due to the simultaneous operations of a few firms of different nations in same industry having high entry barriers. As conflict reduces the profits of firms, the individual firms may prefer to operate under unified ownership (or common control). In this process, FDI occurs when an existing enterprise in the country takesover an independent enterprise of another country, both operating in a similar industry.

The second factor relates to the possession of monopolistic advantages by the prospective foreign investor, which overcomes the disadvantages of doing business abroad. Hymer (1976) added that a firm operating across national boundaries faces a disadvantage in terms of additional costs arising from the lack of knowledge about alien economy, language, law and politics, discrimination by the foreign governments, consumers and suppliers and exchange rate risk.

For FDI to take place, the following additional conditions are required. Firstly, the monopolistic advantages should provide a higher rate of return to the prospective investors relative to their competitors at home as well as in the foreign market. Secondly, the relevant monopolistic advantages must be

transferable abroad and capable of being used along with other resources available at a foreign location. Thirdly, there should be enough imperfection in the market for products, factors and technology of the host country otherwise the foreign affiliates of the investing firms would not be able to retain these advantages (Hymer1976).

In the presence of these conditions, a firm prefers FDI in comparison to the exports and licensing of technology as two alternative forms of exploiting the foreign market. The FDI is preferred as compared to exports because barriers to trade in the form of tariff and transport cost prevent the firms from maximizing returns on exports. The FDI is preferred over licensing the technology for manufacturing of a product to an independent entity in the foreign market because the licensing of technology may lead to several disadvantages to the investing firm such as (a) losing monopoly over the product to the rival firm and face difficulty in controlling its price and output level; (b) non receipt of due payment for the technology owing to the inability of the buyer to evaluate the value of knowledge (c) difficult to reach at a satisfactory contract between licenser and licensee because of the absence of regular market for trade in technology (Hymer, 1976).

In short, Hymer (1960), in his doctoral thesis explains the concept of ownership advantage which states that in order to compete with domestic firms MNCs should have firm-specific advantages such as superior technology, brand name, managerial skills and scale economies but this approach could not explain the actual decision about FDI.

b. Theory of Monopolistic Advantage:

Kindleberger (1969) refined Hymer's theory of FDI and expanded it as a Theory of Monopolistic Advantage. Horizontal Foreign Direct Investment is explained by the Monopolistic Advantage theory. The theory states that the investing firm has a relative monopolistic advantage in foreign country against the competitive local firms. It means the foreign-owned firm would invest in the host country only if it possesses some compensatory advantage which

permits it to compete on equal specifications with indigenous firms. The firm enjoys a monopolistic advantage in two ways:

1. Superior knowledge and Advanced Technology.

2. Economies of scale.

Superior Knowledge refers to all intangible skills-intellectual capital and advanced technology possessed by the firm that leads to a competitive advantage. This permits the firm to create unique product differentiation. The marginal cost of transferring superior knowledge asset to foreign nations will be much lower in comparison to the local firms which need to invest the full cost to create such an asset. (Roots, 1978)

Economies of scale arise from spreading of fixed costs over a larger market, which is one of the advantages of multinationality due to operation in many diverse countries.

For example, the monopolistic advantage recommended horizontal FDI of the US firms' knowledge technology - intensive industries like petroleum refining, pharmaceuticals, chemicals, transport equipment. Further, it was also observed in the case of US firms in high-level marketing skill-oriented industries, i.e. cosmetics and fast-food abroad. (Roots, 1978)

c. Oligopoly Theory of Advantage:

Knickerbocker (1973) propounded the oligopoly theory of advantage.Vertical FDI is explained by the oligopoly theory of advantage. The oligopolistic big firms tend to dominate in the global market on account of barriers to entry.

The big firms intend to keep their monopoly power by sustaining the entry barriers. Big firms do not want new competitors to enter the market by allowing the market vacuum. Therefore, they want growth maximization of the firm. A firm's relative growth rate determines its relative size and relative market power. They tend to capture and enlarge market share into the global

market, through vertical FDI. Thus, oligopoly theory explains the defensive investment behaviour of a multinational firm.

In short, monopolistic advantage theory explains the first course of investment of a business firm in a foreign country but the oligopoly theory explains the defensive investment behaviour in terms of oligopolistic reaction to maintain the monopoly power of the firm.

Besides, horizontal and vertical integration in FDI, the multi-national firm can bring the economies of scale in production and comparative cost advantage resulting in competitive advantage.

d. Product Life Cycle Model: (PLCM)

Raymond Vernon (1971) propounded Product Life Cycle Model. This model can explain both trade and FDI. By adding a time dimension to monopolistic advantage theory, the PLCM can explain shifting of the firm from exporting to FDI. In the beginning, when a firm innovates a product, it produces at home enjoying its monopolistic advantage in the export market, therefore, specialises and exports. Once the product becomes standardised in its growth product phase, the firm may invest in foreign country and export from there to retain its monopoly power. The rivals from the home country also follow to invest in the same foreign country's oligopolistic market. In short, the complexities of international business and marketing behavior can be better explained by a synthesis of international trade and investment theories.

e. Transaction Cost or Internalisation Theory of FDI:

Internalisation is a process in which an arm's length transaction based contractual relationship in the external market is replaced by the internal transaction between a parent firm and its affiliates as well as among affiliates of the parent firm through coordination and administration at managerial level. When the transaction cost is excessive due to imperfections in the market for the products or factors or technology or when the market for proprietary knowledge or technology is completely absent, it is beneficial for a firm to

enter into intra-firm trade at the transfer-prices set by administrators of the management (Rugman 1980, 1981).

Based on the concept of internalisation of market for goods and intangible assets including technology across the nation by a multi-locational firm, Buckley and Casson (1976) for the first time develop a Transaction Cost or Internalisation (TCI) Theory of FDI. Later on, Rugman (1980, 1981) and Hennart (1982, 2001) contributed to the development of a full-fledged theory of FDI based on the concept TCI.

The TCI theory states that FDI occurs in the process of internalisation of imperfect external market across national boundaries. Firms find it more conducive to trade through the internal market than the external market if the market for certain goods or services are either non-existent or imperfect. Rugman (1981) noted basically two kinds of market imperfections, which induce a firm to establish an internal market at the international level. The first type of imperfection is artificial that is created by the governments' restrictions on free trade of goods across national boundaries, for example custom duties or import tariffs levied by a country for protecting its domestic industries from imports. The second type of imperfection is the natural market imperfection that exists due to public goods characteristic and intangible nature of assets, i.e. proprietary technology, organizational, managerial and marketing expertise.

In order to avoid the risks mentioned above, a firm undertakes FDI and creates an internal market across its affiliates located in different countries. The internal market empowers the firm to control and monitor the use of assets transferred to its affiliates and earn a fair return (as per the transfer pricing mechanism). It means the internalisation allows the MNEs to retain control over their monopolistic advantages and also to recover the costs incurred on the creation of assets. Internalisation process includes costs such as 1) the cost of organizing an effective communication network within MNEs, and 2) cost of social distance and political risk attached with entry to an alien country. A firm compares the prospective cost of internalisation with costs of licensing before taking a decision about undertaking FDI. (Rugman 1980)

The TCI theory supports the FDI/MNEs operations on the basis that the MNEs are a competent instrument of overcoming imperfections in the market created naturally or artificially. Moreover, this theory also underlines the gains raised to the firms of host countries through the transfer of technology by the MNEs. The theory focus that the host countries mainly benefit from the transfer of technology and also suggest that since market imperfections are more pervasive in the developing countries than in the developed countries, the developing countries gain more through FDI.

In prescribing policies for development through FDI, the TCI theory recommends removing all the obstacles to free trade and FDI. The attempts at regulation such as imposition of import tariff for preventing imports, gives rise to more FDI or joint ventures and technology licensing in a host country (Rugman 1981). Thus, strongly supporting the FDI/MNEs Rugman says, *"Regulation is always inefficient. Multinationals are always efficient"* (Rugman, 1981).

f. Eclectic Theory:

Based on Industrial Organization (IO), Internalisation and Location advantage theories, John Dunning (1977, 1980, 1988) propounded Eclectic theory, which is a wholistic and analytic approach for FDI and issues of the Multi National Companies (MNCs) regarding foreign production. Eclectic (OLI) paradigm considers the importance of three variables:

1. Company-specific (Ownership Advantages)
2. Country-specific (Locational Advantages)
3. Internalisation (Internalisation or Efficiency Advantages) relating to trade and FDI.

Ownership Advantages: The company-specific paradigm relates to ownership and managerial variables, i.e. superior management skills, managerial effectiveness, structure, process and technology advantages.

Locational Advantages: The eclectic paradigm recognises the location advantages or the attractiveness of the countries as the key determinants of

foreign production by MNEs or FDI. The country-specific or location variables refer to the geographical environment, the political environment, the government's regulatory framework, taxation and fiscal policy, production and transportation costs, cultural environment, research and development advantages. The location-specific advantages of a nation may include cheaper availability of factor endowments such as natural resources, raw material, labour, large home market, low transport and communication cost, better physical infrastructure (e.g. power, telecommunications, roads, rail, seaports and airports), commercial, legal and financial infrastructure; favourable, transparent and nondiscriminatory policy environment towards FDI, fiscal incentives, low tax rates, political stability and less government interventions and institutional set up.

Internalisation or Efficiency Advantages: The internalisation variable refers to the firm's inherent flexibility and output cum marketing capabilities. Dunning (2000) extends the internalisation paradigm by adding new dimensions to it. He says that the firms try to maximise profits by optimal use of existing assets internally through their foreign affiliates and also undertake FDI, to acquire new resources and capabilities or to acquire new markets or to achieve lower unit costs of production or to gain market power or to face competition. These advantages help the investing firm to compete with foreign markets, which needs increased costs of operations.

According to Dunning, these investments could be Natural Resource seeking, Market seeking, Efficiency seeking and Strategic Asset seeking.

Many things have changed extensively since the previous theories of FDI were propounded. The essence of globalisation, use of Information and Communication Technologies (ICTs) and heavy liberalisation of industrial, trade and investment system and Intellectual Property Rights rules and WTO regime have significant impact on all the three determinants of FDI ownership- specific, location and internalisation advantages.

g. General theory of Transnational Corporations (TNCs)

The general theory of Transnational Corporations (TNCs) emerges out of the internationalization of markets (1991). The theory is based on the three simple assumptions as stated below

1. Firms maximize profits in a world where imperfect markets are present

2. When markets are imperfect, there is a benefit to by-pass them by creating internal markets (within the firms) and

3. Internationalization of markets across national boundaries creates MNCs/FDI.

It states that the location strategy of a vertically integrated firm is determined mainly by the exchange of comparative advantage, barriers to trade and regional incentives. The firm will be multinational when these factors make it optimal to locate different stages of production in different countries.

This theory forecasts that unless either transport costs are very low, returns to scale (at the plant level) are high or the comparative advantage of one location is very significant, the international acquisition and exploitation of knowledge will generally involve international production through a global network basically similar plants. Thus, before the Second World War, multi-nationality was due to the internationalization of intermediate product markets in a multistage production process, and in the post-war period it is due to the internationalization of markets in knowledge.

1.1.5.2 Theory on FDI Outflow:

a. Investment Development Path

The dominant theory in the field of FDI outflow has been the Investment Development Path (IDP) propounded by Dunning (1981) which relates the dynamics of foreign investment with a country's stages of economic development or growth. According to IDP, countries go through five stages of investment development.

Stage 1: Initial stage includes pre- industrialization in which there is no inflow and outflow investment.

Stage 2: In the second stage, the country attracts inward investment in resource-based sectors and labour intensive sectors.

Stage 3: At the third stage, investment continues to grow and expand to various sectors of the economy, changing foreign firms' attractiveness for the domestic market due to increase in the cost of labour and resources that make it possible for domestic firms to develop ownership advantage, start investing abroad.

Stage 4: At the fourth stage, FDI outflow tends to surpass inward investment.

Stage 5: The final stage shows a fluctuating balance between outward and inward direct investment.

The basic hypothesis of IDP is that as a country develops, advantages getting from foreign –owned firms that might invest in that country and that of its own firms that might invest overseas, undergo changes (Dunning, 2001). Thus, the basic IDP hypothesis proved is that FDI outflows are dependent on the country's level of economic development or growth measured by GDP or GDP per capita.

1.2 Research Problem

Based on the extensive literature survey, it is found that FDI, as a source of funds, has gained very high importance at a global level, in recent years. FDI is the most important and globally discussed concept. It is also found that there is no comprehensive research being conducted in this area. Most of the researches conducted are limited to certain countries and limited to a certain period, i.e. one or five or ten years; as such a holistic view is not taken into account. The researcher has not come across any study of determinants of FDI inflows as well as FDI outflows of the developing nations in the world for 20 years.

There is a big research gap, because no research of this magnitude is being conducted on FDI, except some micro level studies conducted and that too using the data of the past few years. Even the reference period is set into two or three groups for analysis. The results of such studies may not hold true in the present circumstances. Thus, there

is ample scope for conducting the proposed research to make comprehensive study on determinants of FDI inflows and outflows of developing nations for the yearly observations of the period 1996-2015.

There are 195 countries in the world out of which nearly 150 countries are developing as per World Bank Report and FDI is seen as a mean to supplement domestic investment for achieving a higher level of economic growth and development of these developing nations.

The problem now is for these countries to devise policies that will succeed in both encouraging a greater inflow of FDI and restricting outflows of FDI contributing towards their development objectives.

Therefore, it is a need of the hour to examine the factors that determine FDI inflows to developing nations and factors that influences the flow of FDI out of the developing economies.

The Research Problem Statement is as below.

Whether there is any significant relationship between Factor Endowments and FDI flows.

1.3 Research Questions:

Two research questions raised after identification of the research problem are;

1. Which factors pull the FDI to Developing Nations?
2. Which factors push the FDI out of Developing Nations?

1.4 Objectives of the study:

1. To study the Trend and Growth of FDI inflows into and FDI outflows from Developing Nations.
2. To identify the factors that determine FDI inflows to Developing Nations.
3. To identify the factors that determine FDI inflows to Oil-exporting and Non-oil-exporting Developing Nations
4. To explore the factors influencing FDI outflows from Developing Nations.
5. To explore the factors influencing FDI outflows from Oil-exporting and Non-oil-exporting Developing Nations.
6. To compare the determinants of FDI inflows and FDI outflows of developing nations.

1.5 Need and Significance of the study:

Foreign capital played an important role in the early stages of industrialization. The problems of development of developing countries today are different from advanced countries. However, foreign capital if properly directed and utilized can assist the development and growth of developing countries in the world. Foreign capital helps accelerate the pace of economic growth by facilitating imports required for development programmes, to increase a country's export, transfer of technology, produce higher productivity and increase total investment in the economy.

The reforms of allowance of FDI played a significant role in the performance of developing economies. Similarly, an increase in FDI outflows has also become a part of recent academic discussions. Thus, it is necessary to study the trends of FDI flow and factors determining FDI inflows and outflows of developing countries.

The examination of factor determinants shall provide important policy insights to various Governments of Developing Nations to attract FDI and also to prevent an exodus of capital from their countries.

1.6 Scope of the study:

The study shall include conceptual framework of FDI, brief view of FDI at global level, trends and growth of select developing nations, i.e. 153 developing nations for FDI inflows and 136 developing nations for FDI outflows and period is 47 years from 1970 to 2016. In order to study the factors influencing FDI inflows and outflows of developing nations, the study covers the period from 1996 to 2015 (i.e. 20 years) for maximum of 92 developing nations in the world.

The Variables influencing FDI Inflows shall include FDI inflows as Dependent Variable and Market Size (GDP), Economic growth (GDP Growth Rate), Trade openness (Imports and Exports % of GDP), External debts, Inflation (CPI), Infrastructure Development (Electric Power Consumption per capita), Reserves (Total Reserves), Compensation of employees (Labour Cost), Imports, Natural resources, Political stability, Foreign Exchange rate and Corruption control are 13 independent factors.

The variables influencing FDI outflows shall include FDI outflows as Dependent Variable and Economy size (GDP), Economic growth (GDP Growth Rate), Trade openness (Imports and Exports % of GDP), Inflation (CPI), Infrastructure Development (Electric power consumption), Compensation of employees (Labour cost), Imports, Natural Resources, Political Stability, Foreign Exchange Rate, Corruption control, Exports % of GDP and Lending Interest rate (Cost of capital) are 13 independent variables.

1.7 Organization of the study (Chapterisation):

The chapterisation of the study is as given below:

Chapter I   Introduction: Discusses the research area in details and familiarises the reader with the theoretical concept of research area i.e. FDI, its meaning, definitions, types, need and importance, benefits and theories, identifies the Research Problem, states the Research Questions, highlights the objectives of the research study, explains the need and significance, scope of the study and organization of the study.

Chapter II   Review of Literature: Contains a detailed review of the literature available on the research study which includes FDI inflows and FDI outflows.

Chapter III   Research Methodology: Highlights the methodology applied for conducting the research study. It discusses the period of the study, sample size, data sources, data collection methods, research hypothesis and tools used for data analysis.

Chapter IV   Trend and Growth of FDI Inflows and Outflows of Developing Nations: Discusses and presents the trend and growth of FDI Inflows and Outflows of select Developing Nations in the form of charts, graphs and diagrams.

Chapter V   Determinants of FDI Inflows to Developing Nations: Determines the factors influencing the flow of FDI to Developing Nations using

descriptive statistics, correlation matrix and panel data multiple regression analysis.

Chapter VI   Determinants of FDI Inflows to Oil-exporting and Non-oil-exporting Developing Nations: Examines the factors determining the flow of FDI to Oil-exporting Developing Nations and Non-oil-exporting Developing Nations using descriptive statistics, correlation matrix and panel data multiple regression analysis.

Chapter VII Determinants of FDI Outflows from Developing Nations: Determines the factors affecting FDI outflows from Developing Nations using descriptive statistics, correlation matrix and panel data multiple regression analysis.

Chapter VIII Determinants of FDI Outflows from Oil-exporting and Non-Oil-exporting Developing Nations: Examines the factors affecting FDI outflows from Oil-exporting Developing Nations and Non-Oil-exporting Developing Nations using descriptive statistics, correlation matrix and panel data multiple regression analysis.

Chapter IX   Comparison of Determinants of FDI Inflows and Outflows of Developing Nations: Compare the determinants of FDI inflows and FDI outflows of developing nations.

Chapter X   Discussion, Findings and Conclusion: Discuss the results of the study, conclusion, theoreticalcontribution, policy implications, limitations of the study and scope for further research.

Chapter II

Review of Literature

FDI has been one of the most attractive topics among researchers at an international level. Several researchers, financial analysts and economists have done significant work in the field of FDI. The review of some of the important research studies is presented below.

Peter Drucker (1992) (as quoted in Bhati, 2006), the management Guru, stated that "it is simply not possible to maintain substantial market standing in an important area unless one has physical presence as a producer" in a global economy. In modern times, FDI rather than foreign trade is a chief driving force and an engine of growth of an economy under a global system.

John Dunning (1981) (as quoted in Khachoo et al. 2012) proposed an all-inclusive theoretical structure of FDI flows. He established an eclectic theory of FDI called OLI Paradigm (Ownership-Location-Internalization), a theory that even today has not lost its authenticity and relevance. It represents a combination of three partial theories of FDI, which focused on ownership advantages, location advantages and the internalization advantages.

2.1 Review of Literature relating to Factor Determinants of FDI Inflows:

The major studies explaining the factor determinants of FDI inflows are stated herein below;

Duran (1999) using the Panel data and time series techniques examined the drivers of FDI for the period 1970-1995. It was concluded that the size, growth, domestic savings, country's solvency, trade openness and macroeconomic stability variables are the major drivers of FDI inflows.

Thomas (2000) in his Ph. D. thesis indicated that manufacturing is one common sector in India and Pakistan which has a higher share in total FDI inflows and also FDI is oriented towards the domestic market. Infrastructure is the most high profile of all sectors in the context of FDI in these countries. During later years of reforms FDI

investment in the transportation sector accounted for the highest share (11.62 %) followed by Electrical equipment (11.38 %) in total inflows of India. With regards to locational choices, FDI in India was concentrated in Maharashtra state during 1991-95 and in Karnataka state (15.06%) in 1998-99. Export oriented FDI does not materialize in Pakistan. Globalization process helped to attract FDI in India.

Sharma S. and Sharma R. (2003) examined the relationship between FDI inflows and GDP using data of 29 countries and concluded that FDI is directly related to development as measured by income. However, no evidence was found to support that the rates of growth of GDP and FDI are related.

Palit, (2004) in his Ph. D. thesis analysed the industry specific determinants, state level determinants and country level determinants of aggregate FDI inflows to India employing the OLS technique under panel econometric models. The results of the study indicate that return on equity capital deployed and FII inflows positively encourage greater FDI inflows to India. The Market size acts as a strong pull factor for FDI in India, and thus, it is confirmed that FDI in India is 'domestic market-oriented'. Inflows of non-resident deposits is not a significant determinant of FDI. It is also found that FDI in India does not respond to exports.

Nonnenberg and Mendonca (2004) analysed the data of 33 developing countries for the period 1975 to 2004 and observed that factors like market size measured by GNP, growth rate, availability of skilled labour, receptivity of foreign capital, the country risk rating and stock market behaviour are the important determinants of FDI flows to developing countries.

Bhati Usha (2006) examined the factors influencing FDI inflows to 62 developing countries of the world and summarised that per capita GDP significantly influence FDI inflows during each period 1989–1994, 1995-99, and 2000-2003. Another significant determinant of FDI for the period 1989-94 and 1995-1999 is exports as a percentage of GDP. The other socio-economic determinants such as adult literacy, external debt, inflation rate and electric power consumption had an insignificant effect in this study. The determinants of inward FDI were examined using step wise multiple regressions model.

Sahoo (2006) conducted a panel data co-integration test and enumerated the impact of determinants of FDI in South Asia and found that FDI and its determinants such as market size, labour growth force, infrastructure index and trade openness have long-run equilibrium relationship in South Asian countries.

Demirhan E. and Masca M. (2008) explore the determining factors of FDI Inflows in 38 developing countries over the period 2000 to 2004 using Time series analysis and Panel data multiple regression analysis. Authors concluded that Growth rate of per capita GDP, Telephone main lines per 1000 people and Degree of openness are statistically significant and have a positive impact but inflation rate and tax rate are statistically significant and reflect negative impact whereas Labour cost and political risk are insignificant factors.

Mottaleb K. A., Kalirajan K. (2010) investigated the determinants of FDI in 68 developing countries for the period 2005 to 2007. Using panel data regression analysis, it is found that GDP Growth rate, Abundant Labour Force, Improved Infrastructure and Communication system, Business Environment and Foreign Aid are positively and significantly influence FDI inflows of developing countries.

Narayanamurthy et al (2010) examines the factors determining FDI inflows of BRICS countries by employing panel data analysis for the period 1975 to 2007 and finds that the Market size, Labour cost, Infrastructure, Currency value and Gross Capital Formation are the potential determinants of FDI inflows of BRICS countries whereas the Economic Stability and Growth prospects, Trade openness seems to be the insignificant determinants.

Sharma, (2010) in her Ph. D. thesis examined the determinants influencing the flow of FDI in India. After applying Vector Error Correction Model (VECM) on Quarterly data for the period 1990-91 to 2008-09, she found the result that GDP, Openness, Reserves, Exchange rate, Inflation and Long Term Debt (LTD) are statistically significant in India. Out of these variables, Openness, Inflation and Reserves are the major contributors of India's FDI inflow.

Ranjan et al (2011) explore FDI inflow determinants in Brazil, Russian Federation, India and China (BRIC) employing random effect model on Panel data set of 35 years

from 1975 to 2009. The empirical results show that market size, trade openness, labour cost, infrastructure facilities, macroeconomic stability and growth prospects are the determinants of FDI inflow in BRIC nations. It is also inferred that macroeconomic stability and growth prospects have very little impact, and gross capital formation and labor force are insignificant variables.

Shylajan C. S. (2011) reviewed the major factors that determine the flow of FDI in India during the period 1993 to 2006 applying Multiple Regression Analysis. He confirmed that FDI is related positively with real GDP but inversely related to inflation.

Seetanah and Rojid (2011) supplemented the earlier literature and brought new evidence of determinants of a successful FDI recipient African country, i.e. Mauritius. Using a Differenced Vector Autoregressive (DVAR) model, it is concluded that trade openness, wages and quality of labour are the most important factors for the flow of FDI to Mauritius. The Market size has a lesser impact on FDI, probably due to limited population size, domestic market and good export opportunities from Mauritius.

Khachoo A. Q., Khan M. I. (2012) identified the factors determining FDI Inflows to 32 developing countries for the period 1982 to 2008 using Ordinary Least Square, Pedroni's Panel Unit Root and cointegration Tests. Authors inferred that Market size (GDP), Infrastructure (Electric power consumption), Total Reserves and Labour cost (wage rate) except Trade openness (Imports and Exports % of GDP) have a strong bearing on inflows of overseas capital.

Sahni P. (2012) examined the determinants of FDI in India over the period 1992-93 to 2008-09. The author used Time Series Analysis, Multiple Regression Analysis (OLS) and found that GDP, Inflation (WPI)) and Trade Openness are important factors in attracting FDI Inflows in India during the post–reform period, but Foreign Exchange Reserves was found to be statistically insignificant variable.

Jadhav P. (2012) explored the role of economic, institutional and political factors in attracting FDI in BRICS (Brazil, Russia, India, China & South Africa) economy and the comparative weightage of these factors in attracting FDI. Using panel unit-root test and multiple regressions for ten years, i.e. 2000-2009, the author examined the

significant determinants of FDI in BRICS. Market Size, natural resources, Trade openness, are treated as economic determinants and Macroeconomic Stability (Inflation Rate), Political stability/No violence, Regulatory Quality, Government Effectiveness, Voice and accountability, Control of corruption, Rule of Law as institutional and political determinants of FDI.

The result implies that market size measured by real GDP is a significant determinant, which means that investment in BRICS is motivated by market-seeking purpose. Findings also indicate that trade openness, natural resource availability, the rule of law and voice and accountability are statistically significant. Market size and trade openness have a positive effect on total inward FDI, whereas Natural resource availability has negative effect on total inward FDI, it means that FDI is not motivated by resource-seeking purpose in BRICS economies. Finally, it is concluded that economic factors are more significant than institutional and political factors in BRICS economies.

Chauhan, (2012) in her Ph. D. thesis used an OLS multiple regression method on the data set of $1975 - 2009$ for BRICS economies and observed that Gross Fixed Capital Formation (GFCF) has positive impact in case of India and South Africa. It is highly correlated with China's Market size. Worker's Remittances and Compensation did not show any significant impact on FDI. Inflation also does not have a very significant impact on FDI except Brazil. Real Effective Exchange Rate (REER) also not found to be significant. The statistical analysis evidence that Market size, Openness, Industry production and investment in infrastructure are the most important factors influencing FDI. Openness show clear and significant impact on FDI inflow except in the case of South Africa. This process of liberalization leads to developments in economic and political spheres.

Karmali D. (2013) determined the factors that influence FDI Inflows in India for 27 years, i.e. 1985-86 to 2011-12. Using VAR, Johansen's Multivariate cointegration Analysis and Augmented-Dicky Fuller Test the author concluded that there exists a long term relationship between FDI Inflows and independent variables i.e. GDP, Exchange Rate, External Debt, Inflation Rate and Trade Openness. However, contrary to the expected view, domestic inflation has a positive relation with FDI Inflows.

Parul (2015) in his Ph. D. thesis examined the emerging trends and determinants of FDI inflows to India in the post-liberalization period. For identifying the factors influencing on inward flow of FDI large sample size comprising of 62 developing countries was used. The stepwise regression analysis was applied on data for the period 1989 to 2005, which was further categorized into 1989-94, 1995-1999 and 2000-2005. The author brought out the findings that per capita GDP has a significant influence on FDI inflows during each period. Another significant determinant of FDI for the period 1989-94 and 1995-1999 is exports as a percentage to GDP. However, the remaining socio-economic variables like adult literacy, inflation rate, external debt and power consumption are usually important determinants but found to be insignificant in the current study.

With regards to the trends of FDI in post-liberalization period, the study revealed that FDI inflows through FIPB/SIA route have always been the highest among the various routes since 1991. The actual FDI flows have shown an upward trend from 1991 to 1997. In the period 1998 to 2003, the FDI inflows, However, shows an increasing trend in 2001 and 2002 but went down considerable in 2003.

As far as state-wise approvals of cumulative FDI are concerned, only five states Maharashtra, Delhi, Tamil Nadu, Karnataka and Gujarat have accounted for 52.80% of total FDI inflows in the country from 1991to 2004.

The sectoral composition of FDI indicated that the sector of electrical equipments (including a computer, software and electronics) is the largest recipient of such investment, i.e. 13.71% of cumulative FDI inflows.

The position of investing countries to India revealed that five developed and advanced countries namely, US, UK, Germany, Switzerland and Japan accounted for almost half of the FDI approvals (amount) during the period 1991–1994. The developed countries invested nearly 60 percent of the total FDI in India. US stands at the top with a 30.46% share in total FDI followed by Europe and Singapore.

Madan R. and Chowdhry N. (2016) analysed the impact of macroeconomic variables on the FDI inflow in India using Time Series Regression Model and VAR Model for the period 1995 to 2014. The results conclude that Imports, IIP, exchange rate, employment ratio, total reserves, nifty 50 and internet users are statistically significant influencing FDI inflows whereas inflation rate, GDP, GDP growth, GDP deflator, labour force participation rate, taxes on international trade and population are insignificant factors.

Bandekar B. and Sankaranarayanan K.G. (2016) examined the determinants of FDI in emerging economies like India and China. The study also compared the major factors attracting FDI to India as against the factors influencing FDI to China. The study analysed the Indian data and Chinese data for the period 1991-2012 applying OLS method of regression and found that India's FDI flow has increased due to its large size market, higher market growth rate, globalization policy, low cost of capital, exports promotions and infrastructure development. On the other hand, in the case of China, the size of the market, economic development by creating strategic infrastructure were identified as major drivers of FDI inflows. Thus, market size was the most important and the only common factor for the flow of FDI to India and China.

Bandekar B. and Sankaranarayanan K.G. (2017) explored the trends of individual and aggregate FDI inflows in BRICS countries using the annual dataset for the period 1991 to 2015. The study further examined the determinants of FDI inflows to Brazil, Russia, India, China and South Africa, i.e. BRICS countries using the annual dataset for the period of 22 years, i.e. 1991 to 2012. The study employed panel data analysis and found that Economic Growth, Economic stability, Natural Resources, Exchange Rate, Market size, Total Reserves and National Income are the potential determinants of FDI inflows to BRICS countries whereas Trade openness, Gross Capital Formation and Infrastructure facilities are insignificant determinants.

Saini & Singhania (2018) investigated the potential determinants of FDI in developed and developing countries based on panel data analysis using static and dynamic modeling for 20 countries (11 developed and 9 developing) over the period 2004-2013. For the static model, Hausman Test (1978) and for a dynamic model, GMM is used. The outcome of this study depicts that in developed countries, FDI seeks policy-

related factors i.e. GDP growth, trade openness and freedom index and in developing countries, FDI express positive association for economic determinants, i.e. Gross Fixed Capital Formation (GFCF), trade openness and efficiency variables.

Bandekar B., and Sankaranarayanan K.G. (2018) analyzed and compared the factors that determine the flow of FDI into developing nations like India and Russia. The empirical analysis is based on the constructed database of India and Russia, consisting of FDI and other variables for 25 years i.e. 1991-2015. OLS method of regression is used for analyzing the data. The findings prove that FDI has been attracted to India due to two factors, i.e. globalization policy (trade openness) and availability of abundant natural resources, whereas large market size, trade openness and low labor cost were identified as major factors for the flow of FDI to Russia. Therefore globalization policy (i.e. trade openness) is the very important and the common determinant of FDI inflows to India and Russia. The author also felt that high level of FDI inflows seems to be the key component to solve the problems of modernization and diversification of Indian and Russian economy.

Uddin and others (2019) examined the relationship between institutional factors and FDI inflows in Pakistan and found that certain institutional determinants such as government size, legal structure and strong property rights, freedom to trade and civil liberty have a strong positive effect on FDI inflows. Out of these variables, regulations proved to be the most important factor to influence the flow of FDI to Pakistan. The authors also found evidence that there was a structural break in FDI flows in Pakistan in the early 1990s along with market liberalization programme. Post structural break period confirmed that institutional factors are stronger to attract foreign investment. They also added that the military government has a strong effect in attracting FDI to Pakistan as compared to democratic government.

The various studies explaining the relationship between FDI inflows and its individual factor determinant is sumarised here as under:

I]   FDI Inflows and Imports:

Mundell (1957), (quoted in Stephen et.al.1993) stated that FDI flows into those countries that are importing goods from abroad. Hymer (1970) also concluded that there is a significant positive relationship between imports and FDI inflows. Stephen et al. (1993) also found that in connection with FDI, the estimated coefficient of previous periods' imports is positive and significant. Madaan and Chowdhry (2016) also examined the causal relationship between imports and FDI inflows for the period 1995 to 2014 and evident that imports are a statistically significant variable influencing FDI inflows in India.

However, Bhagawati (1978) found that the countries adopting import substitution strategy attract less FDI. Abdul Ghafoor Awan et al (2014) also found that Import has significant but negative influence over the flow of FDI in Pakistan.

II]   FDI Inflows and Market Size (GDP):

The Market as FDI determinant has two parts, i.e. Market size and Market Growth Rate. Market size, as measured by GDP, plays a key role in attracting FDI inflows. Studies conducted by Hill and Munday (1992) and Lucas (1993) show that market size is a significant determinant of FDI. Tsai (1994) in his empirical study also proved that Market size has a positive impact on FDI inflows in India. Chen (1997) also agrees that market size is a significant determinant of FDI inflows in developing countries.

Holland and others (2000) reviewed studies for Europe and proved that Market size is a significant factor. However, Clegg (1995) (quoted in Castro, 2000) found that for the data of entire period, i.e. 1951-90 market size was insignificant, but on splitting the data 1951-72 and 1973-90, market size turned significant in 1951-72. (Chakrabarti, 2001) analysed the FDI determinants in developing countries and examined the strong correlation between FDI and market size, which changed the domestic country's economic condition. Chakraborty and Basu (2002) explored the relationship between net inflow of FDI and real GDP. Asiedu (2002) inferred that market size is statistically significant variables for fostering FDI.

Kishore Nawal (2003) expressed that FDI has helped in accelerating the economic growth more in case of developing countries, which require capital, technology and better management for faster economic growth. FDI is influenced by market size (Campos and Kinoshita, 2003 and Addison and Heshmati, 2003). Venkateswarlu and Rao (2004) bring out a strong positive relation between FDI and per capita GDP. Palit, (2004) also supported that Market size acts as a strong pull factor for FDI in India, and thus, it is confirmed that India's FDI is 'domestic market-oriented'.

Naeem, Ijaz, and Azam (2005) also supplemented that the economic factor like market size is significant in Pakistan. The study of Bende-Nabende (2002) and (Krugell, 2005) from Africa found market size as one of the most important and long-run determinants of FDI and adds that economy with a large market size attracts more FDI. Bhati (2006) also summarized the same for 62 developing countries for the period 1989-2003.

Demishan and Masca (2008) analysed the data of 30 developing countries over the period 2000 -2004 and explored that investors prefer growing economies to large economies since Market Size (growth rate of GDP per capita) has positively affected FDI. Mottaleb and Kalirajan (2010) with data of 68 developing countries found that market size, i.e. GDP is a positively significant factor. The Market size has been widely accepted significant determinant of FDI inflows by nearly all studies. (Bhavan et.al 2011; Ting & Tang 2010; Leitao & Faustino 2010; Leitao 2010; Hailu 2010; Schneier & Matei 2010; Mohamed & Sidiropouios 2010, Sharma, 2010).

Singhania and Gupta (2011) with the help of best fit ARIMA model declared that only GDP is statistically significant and had a significant impact on FDI inflows into India. A study by C. S. Shylajan (2011) reviewed the major factors of FDI inflow in India for the period 1993 to 2006 and inferred that FDI is related positively with real GDP. Sapna Hooda (2011) examined data for the period 1991-92 to 2008-09 and noted that GDP is one of the important macroeconomic determinants of FDI Inflows in India.

There is a positive relationship between FDI flow and GDP, and therefore Market size is main determinant of FDI inflows to 32 developing countries for the period 1982-2008 (Khachoo and others, 2012). Sahni P. (2012) examined determinants using data 1992- 93 to 2008-09 and also indicated that GDP is important factor in attracting FDI

inflows to India. Chauhan, (2012) also confirms that market size is the most important factor for FDI inflows to BRICS. Karmali D. (2013) added that there exists a long term positive relationship between FDI Inflows and India's GDP for the period 1985-86 to 2011-12. Parul (2015) also agrees that per capita GDP has a significant influence on FDI inflows in India during each period 1989-94, 1995-1999 and 2000-2005. Similarly, GDP and GDP per capita influenced positively with the entrance of FDI inflow in Pakistan during the period 2000 to 2012 as accepted universally (Saini, Madan, & Batra, 2016).

However, Seetanah and Rojid (2011) brought new evidence that Market size has a lesser impact on the flow of FDI to Mauritius, probably due to limited population size, domestic market and good export opportunities. Sisili T. and Elango (2013) studied FDI determinants in India for the period 1997 to 2008 and concluded that FDI inflows are negatively influenced by the size of the market. Madaan and Chowdhry (2016) examined the causal relationship between GDP and FDI inflows in the Indian environment for the period 1995 to 2014 and evident that GDP is an insignificant variable to determine FDI inflows in India.

III] FDI Inflows and Market Growth (GDP Growth):

Tsai (1994), in his empirical study proved that Market growth measured by GDP growth have a positive impact on FDI inflows in India. Balasubramanyam et al. (1996) clearly show that FDI is a major element of economic growth in developing countries. Agarwal (2000) analyzed the economic impact of FDI in South Asia and found that relationship of FDI with GDP growth is negative before 1980 but mildly positive over the late '80s and strongly positive in early '90s thus it is beneficial in more open economies. Holland and others (2000) reviewed studies for Europe and proved that Market growth is a significant factor. However, Clegg (1995) (quoted in Castro, 2000) found that for the data of entire period, i.e. 1951-90 market growth rate, were insignificant but on splitting the data market growth rate became significant in 1973-90.

Buckley and others (2002) point out that the rate of growth of FDI has positive effect upon GDP growth. The economic prosperity of the country positively influence the growth of FDI added Quazi and Mahmud (2004). The study of Bende-Nabende

(2002) and (Krugell, 2005) from Africa found market growth as one of the most important and long-run determinants of FDI and adds that countries that have high and sustained growth rates receive more FDI flows compared to unstable economies. Bhati (2006) studied 69 developing nations during the period 1989-2003 and concluded that per capita GDP and GDP Growth significantly influence FDI inflows. Demirhan and Masca (2008) also confirm that GDP per capita growth rate is statistically significant for the flow of FDI in 38 developing countries for the period 2000-2004.

Wang Grace Miao (2009) examined the impact of FDI inflows on 12 Asian Economies during the period 1987-97 and found that FDI in the manufacturing sector has a significant and positive impact on economic growth in the host economies. Mottaleb and Kalirajan (2010) with data of 68 developing countries, found that the market (i.e. GDP) growth rate is a positively significant factor. There is a positive relationship between FDI flow and economic growth. A similar finding is noted by some empirical studies (Azam 2010, Adhikary 2011, Bhavan et al. 2011) which further states that FDI is key factor for world's growth engine and therefore countries create socio-economic conditions favorable for FDI attraction.

Jumaev and Hanaysha (2012) examined the period from 1984 to 2006. To conclude, FDI to Malaysia is positively and significantly related to change in GDP. Sisili T. and Elango (2013) studied FDI determinants in India for the period 1997 to 2008 concluded that FDI inflows are positively influenced by the growth of the market. Saleem, F. et al. (2013) conducted a study for a time period of 1990 to 2011 and reports that FDI inflows are negatively influenced by the growth of GDP in Pakistan. Saini & Singhania (2018) also investigated that in developed countries, FDI seeks policy-related factors, i.e. GDP growth.

However, the study conducted by Sharma and Sharma (2003) found no relation between FDI inflow and the GDP growth rate for the data of 29 countries. Madaan and Chowdhry (2016) examined the causal relationship between GDP growth and FDI inflows for the period 1995 to 2014 and evident that GDP growth is insignificant variable to determine FDI inflows in India.

IV] FDI Inflows and Natural Resources:

Resource-seeking FDI is motivated by the availability of natural resources in FDI recipient nations. Natural resources play an important role in FDI attraction. The study conducted by Achinivu (1990) on Malaysia and Taiwan indicated that availability of raw material was a significant determinant of FDI. Similarly, Campos and Kinoshita (2003) conclude that FDI is influenced by abundant natural resources. Deichmann (2003) also proved natural resources as one of the important determining factors for FDI in Euro-Asian countries. Many studies (Asiedu 2002, 2006, Dupasquier & Osajwe 2006) explained that natural resources in African countries attract more FDI. Moreira (2009) in the literature based study in Africa, concludes that Africa has managed to lure foreign investment because of the availability of natural and mineral resources.

However, (Soon, 1990) in a study on German FDI in ASEAN found this factor to be insignificant, World Investment Report (1998) also shows the decreased importance of natural resource over the years.

V] FDI Inflows and Labour cost:

Labour cost is also an important factor in attracting FDI. Achinivu (1990) and Lucas (1993) observed labour cost to be a significant determinant of FDI. Tsai (1994) found strong support for cheap labour during the period 1983-1986 but weak support for the years 1975 to 1978 towards FDI. Kerr and Monsingh (2001) also noted that wage level is one of the determinants of the level of FDI flows to China over the period 1980 to 1998. Campos and Kinoshita (2003) observed labour cost to be a significant determinant of FDI. Moreira (2009), in the literature based study in Africa, concludes that Africa has managed to lure foreign investment because of its cost-effective labour. Seetanah and Rojid (2011) also concluded that wages and quality of labour are the most important factors for the flow of FDI to Mauritius.

Labour cost (wage rate) is one of the important factors of FDI inflows to developing countries. It means higher labour cost would discourage FDI inflows (khachoo and others, 2012). Krugell (2005) along with Pigato (2001), Lemi and Asefa (2003) Yasin (2005) and Odenthal (2001), Fedderke and Romm (2006), Asiedu (2006), Schneider

and Frey (1985), Culem (1988), Moore (1993), Love and Lage-Hidalgo (2000) explains that availability of cheap labour positively influence FDI inflows but also adds that along with the cost of labour, productivity of labour also matters.

However, Wheeler and Mody (1992) inferred labour cost to be an insignificant factor within a sample of developing countries. Demirhan and Masca (2008) also noticed that Labour cost (wages rate) is not a statistically significant factor for FDI flows in 38 developing countries during the period 2000-2004. Chauhan, (2012) also noted that Labour cost measured by Worker's Remittances and Compensation does not have a significant impact on FDI inflows to BRICS.

VI] FDI Inflows and Infrastructure:

Vernon (1966) suggested that the host nation must provide adequate infrastructure to facilitate the flow of FDI. UNCTAD World Investment Report (1998) confirms that FDI can be influenced by the level of infrastructures. Nagaraj R. (2003) also documented that FDI in Telecom and software industries were significant in India and China for the period 1991-2000. Addison and Heshmati (2003) investigated the determinants of FDI inflows to developing countries over a period 1970 to 1999 and stated that the spread of ICT is likely to affect FDI significantly and positively. Demishan and Masca (2008) have noticed that infrastructure (measured by Telephone main lines per 1000 people) have positively affected FDI. Infrastructure and communication system is a major factor to attract FDI (Mottaleb and Kalirajan, 2010). An infrastructure facility (measured by Electric Power Consumption) is the main determinant of FDI (Khachoo and others, 2012). Chauhan, (2012) also confirms that investment in infrastructure is the most important factor for FDI inflows to BRICS. Madaan and Chowdhry (2016) also examined the causal relationship between infrastructure (measured by internet users) and FDI inflows for the period 1995 to 2014 and evident that internet user is statistically significant variable influencing FDI inflows in India.

However, Asiedu (2002) inferred that infrastructure is statistically insignificant variable for fostering FDI. Bhati (2006) also commented that the infrastructure facility (measured by Electric Power Consumption) had an insignificant relation with FDI.

Parul (2015) in his study, also found that power consumption is an insignificant factor influencing the flow of FDI to India.

VII] FDI Inflows and Foreign Exchange Rate:

Achinivu (1993) found a foreign exchange to be a significant variable. Shin-ya and Tsuyoshi (1998) examined that FDI in Japan is highly influenced by Yen Exchange Rate. Goldberg and Klein (1998) also observed a significant relationship between real exchange rate and FDI from Japan and the U.S into South-East Asian Countries. Kerr and Monsingh (2001) also agree that the exchange rate is one of the determinants of FDI flows to China over the period 1980 to 1998. Garibaldi and others (2001) based on a panel of 26 transition economies between 1990 and 1999, also concluded that the exchange rate had a significant impact on FDI inflows. Sharma, (2010) and Jumaev and Hanaysha (2012) experienced positive and significant relation of FDI with Exchange Rate. Sapna Hooda (2011) examined data for the period 1991-92 to 2008-09 and noted that Exchange Rate is one of the important macroeconomic determinants of FDI Inflows in India. Sisili T. & Elango (2013) studied FDI determinants in India for the period 1997 to 2008 and concluded that FDI inflows are negatively influenced by fluctuations in the exchange rate. Karmali D. (2013) added that there exists a long term relationship between FDI Inflows and exchange rate in India for the period 1985-86 to 2011-12. Madaan and Chowdhry (2016) also examined the causal relationship between exchange rate and FDI inflows for the period 1995 to 2014 and evident that the exchange rate is statistically significant variable influencing FDI inflows in India.

However, Moore (1993) found no significant relation between FDI and Exchange Rate. Similarly, Chauhan, (2012) noted that Real Effective Exchange Rate does not have a significant impact on FDI inflows to BRICS.

VIII]   FDI Inflows and Trade openness:

The benefits of FDI can be maximized only in a relatively free and market oriented environment where the private economic decision does not diverge greatly from the social good (Asian Development Review, 1993). Sach and Warner (1995) indicated that export-oriented FDI links the local economy to the international economy.

Openness to both imports and exports has been proved to be a powerful force for growth. Balasubramanyam et al. (1996) clearly noted that the openness of developing economies encourages FDI inflows. Agarwal (2000) found that FDI is more likely to be beneficial in more open economies, i.e. in the early '90s. Kerr and Monsingh (2001) concluded that the degree of openness is one of the determinants of the level of FDI flows to China over the period 1980 to 1998.

Nunnenkamp and Spatz (2002) find a significant relationship between FDI inflows and foreign trade restrictions. Asiedu (2002) inferred that the openness of the economy is a statistically significant variable for fostering FDI. Openness to trade has a positive impact on FDI inflows (Addison and Heshmati, 2003). Economic freedom and openness positively influence the growth of FDI added Quazi and Mahmud (2004). Naeem, Ijaz, and Azam (2005) also supplemented that trade openness is significant in Pakistan.Demirhan and Masca (2008) also confirmed that trade openness is an important determinant for FDI to 38 developing economies. Moreira (2009), in the literature based study in Africa concludes that Africa has managed to lure foreign investment because of its trade openness policies. Most of the studies find that trade openness has a positive relation with FDI and they used a proportion of trade in GDP as a proxy (Bhavan et al. 2011; Ting & Tang 2010; Leitao & Faustino 2010; Leitao 2010, Sharma 2010). Seetanah and Rojid (2011) also concluded that trade openness is the most important factor in the flow of FDI to Mauritius.

Sahni P. (2012) used time series data for the period 1992-93 to 2008-09 and indicated that Trade Openness is an important factor in attracting FDI inflows in India during the post-reform period and has positive relation. Chauhan, (2012) also confirms that openness is the most important factor for FDI inflows to BRICS. Karmali D. (2013) added that there exists a long term positive relationship between FDI Inflows and trade openness of India for the period 1985-86 to 2011-12. Similarly, Trade openness has strong positive influence on the entry of FDI in Pakistan during the period 2007 to 2012 as accepted universally (Saini, Madan, & Batra, 2016). Saini & Singhania (2018) also investigated that FDI expresses positive association for economic determinant, i.e. trade openness for the period 2004-2013 in developed countries and developing countries.

However, the study conducted by Khachoo and others (2012) also comments that openness is not significant determinant as foreign investors did not place much importance to the openness of the host country.

IX] FDI Inflows and Political stability:

The study conducted by Soon (1990) found political stability as a significant determinant of FDI. Political stability or risk decides whether to invest or not in a particular area (Dunning 1993; Moosa 2002). Lucas (1993) confirmed political risk a major reason for less flow of FDI. Similarly, Singh and Jun (1995) inferred that political risk is significant determinants of FDI inflows. Addison and Heshmati (2003) investigated the determinants of FDI inflows to developing countries over the period 1970 to 1999 and stated that democratization affects FDI significantly and positively. Political instability negatively influences the growth of FDI added Quazi and Mahmud (2004). Pradeep (2011) also agrees that political image or stability influences FDI inflows in India.

Whereas, Asiedu (2002) noted that political risk is a statistically insignificant variable for fostering FDI. Political risk indicates political actions that affect sales or causes damage to property or harm the employees, which create operational restrictions. (Daniel et al. 2002). Demirhan and Masca (2008) also confirm that political risk is an insignificant factor for FDI inflows in 38 developing countries for the period 2000-2004. Bhati (2006) also proved that political risk is not an important factor for the flow of FDI to developing countries. Political risk factors usually affect foreign investments in that country (Dunning 1993, Dupasquier & Osajwe 2006, Zenegnaw A. H. 2010). FDI flows and Military conflcts possess an inverse relation (Li 2008).

X] FDI Inflows and Inflation:

Garibaldi and others (2001) based on a panel of 26 transition economies between 1990 and 1999, concluded that inflation had a significant impact on FDI inflows. Naeem, Ijaz, and Azam (2005) also supplemented that the economic factor like inflation is significant for the flow of FDI in Pakistan. Bhati (2006) studied 69 developing nations during the period 1989-2003 and concluded that a low inflation rate is an important determinant for a large flow of FDI to developing countries.

Demirhan and Masca (2008) also confirm that the low inflation rate is statistically significant for large FDI inflows in 38 developing countries for the period 2000-2004. Jumaev and Hanaysha (2008) also found inverse and significant relation of FDI with the inflation rate in Malaysia. Sharma (2010) again found this variable to be significant for India's FDI inflow.

Singhania and Gupta (2011) with the help of best fit ARIMA model, declared that the inflation rate is a statistically significant factor and had a significant impact on FDI inflows into India. A study by C. S. Shylajan (2011) reviewed the major factors of FDI inflow in India for the period 1993 to 2006 and inferred that FDI is inversely related to inflation. Kok and Ersoy (2011) investigated the best determinants of FDI in 24 developing countries and showed that inflation has a negative impact. Inflation (WPI) is an important determinant which attracts FDI to India (Sahni P. 2012). Shumaila N. et al. (2012) in their study for the period 1980 to 2010 made a case for a positive relation between capital inflows (FDI) and inflation in Pakistan. Sahni P. (2012) used time series data for the period 1992-93 to 2008-09 and indicated that inflation (WPI) is an important factor in attracting FDI inflows in India during the post-reform period and has positive relation. Saleem, F. et al (2013) conducted a study for a time period of 1990 to 2011 and proved that there exists a positive relationship between FDI and inflation in Pakistan. Karmali D. (2013) added that there exists a long term relationship between FDI Inflows in India and inflation rate for the period 1985-86 to 2011-12, but contrary to expected view, domestic inflation has a positive relation with FDI Inflows.

However, Chauhan, (2012) noted that inflation does not have a significant impact on FDI inflows to BRICS. Parul (2015) found that the inflation rate is usually important determinant but noted to be insignificant in his study relating to India. Madaan and Chowdhry (2016) examined the causal relationship between inflation and FDI inflows in the Indian environment for the period 1995 to 2014 and confirmed that inflation is an insignificant variable to determine the FDI inflows to India.

XI] FDI Inflows and External Debt:

Naeem, Ijaz, and Azam (2005) supplemented that external debt is significant for the flow of FDI in Pakistan. Karmali D. (2013) added that there exists a long term

relationship between FDI Inflows and India's External Debt for the period 1985-86 to 2011-12. Kok and Ersoy (2011) also investigated that Total Debt as a percentage of GDP has a negative impact on FDI in 24 developing countries. Abdul Ghafoor Awan et al. (2014) also found that External debt has a significant but negative influence over the flow of FDI in Pakistan.

However, Bhati (2006) studied 69 developing nations during the period 1989-2003 and concluded that economic indicator external debt had an insignificant effect in the study. Parul (2015) also confirmed that external debt is an insignificant variable in his study related to India.

XII] FDI Inflows and Corruption:

Some research works highlights that inefficient institutions discourage foreign investments (Gastanaga et.al 1998; Campos et.al 1999; Asiedu and Villamil 2000; Wei; 2000). Nations which have better quality institutions attract FDI (Mehic et.al 2009). Corruption makes local bureaucracy less transparent and poses an obstacle to foreign investors (Smarzynska and Wei, 2002). Habib M. and Zurawicki L. (2002), and Smarzynska and Wei (2002) found that corruption reduces FDI inflows. Ajayi (2006) stated that a country that is corrupt with a high crime rate could not attract much FDI because of corruption cost and it creates uncertainty. Moreira (2009) in the literature based study in Africa also conclude that factors like corruption have acted as an obstacle in attracting more FDI in the region. Mohamed, Sidiropoulos (2010) also agrees that institutional variables are the major determinants of FDI in countries of MENA region.

Whereas, Wijeweera and Dollery (2009) inferred that corruption is not a statistically significant determinant of FDI.

XIII] FDI Inflows and Reserves:

Lucas (1993) noted a positive relation between FDI and foreign exchange reserves. Sapna Hooda (2011) and Sharma (2010) noted that Reserves is one of the important macroeconomic determinants of FDI Inflows in India for the period 1991-92 to 2008-09. Total reserve is one of the important factors for FDI inflows inferred Khachoo and

others (2012). Madaan and Chowdhry (2016) also examined the causal relationship between total reserves and FDI inflows in Indian environment for the period 1995 to 2014 and evident that total reserves are statistically significant variable influencing FDI inflows in India.

However, Sahni P. (2012) used time series data for the period 1992-93 to 2008-09 and indicated that Foreign Exchange Reserves was found to be statistically insignificant variable.

XIV] FDI Inflows and National Income:

Abdul Ghafoor Awan et al. (2014) found that national income measured by Gross National Income (GNI) has a significant and positive influence over the flow of FDI in Pakistan. GNI has strong negative impact on the entry of FDI in Pakistan during the period 2000 to 2012, as stated in theory. (Saini, Madan, & Batra, 2016)

XV] FDI Inflows and Exports:

The countries adopting export promotion strategy attract more FDI than the countries adopting the import substitution strategy (Bhagawati, 1978). Schmitz and Helmberger (1970), as well as Dunning and Norman (1983) (quoted in Stephen et al. 1993) contend that FDI creates vertically integrated production units and therefore increases the amount of international trade. Singh and Jun (1995) also inferred that export orientation is the strongest variable of FDI Inflows. Balasubramanyam et al. (1996) clearly show that export-promoting macroeconomic policy encourages FDI inflows in developing economies. Kumar Nagesh (2000) studied the Indian economy and inferred that export oriented FDI facilitates exporting activity of domestic enterprises. A positive correlation between higher FDI flows, higher growth in services and exports also cannot be negated (Matoo et al. 2001). Bhati (2006) studied 69 developing nations during the period 1989-2003 andsummarized exports as a percentage of GDP as a significant determinant of FDI inflows of developing economies. Abdul Ghafoor Awan et al (2014) also found that Export has significant and positive influence over flow of FDI in Pakistan. Parul (2015) also agrees that exports as a percentage to GDP is a significant determinant of FDI for the period 1989-94 and 1995-1999.

However, Stephen et al. (1993) found that in connection with FDI, the coefficient of previous periods' exports is negative and significant. Palit, (2004) also found that FDI in India does not respond to exports.

XVI] FDI Inflows and Other Macro-Economic Factors:

Kerr and Monsingh (2001), in their study, found that the level of interest rates and taxation regime are the determinants of FDI flows to China over the period 1980 to 1998. Garibaldi and others (2001) based on a panel of 26 transition economies between 1990 and 1999, concluded that the factors such as fiscal deficit and risk analysis had a significant impact on FDI inflows.

Asiedu (2002) using the least square method inferred that return on investment is statistically significant variable for fostering FDI. Charkraborty and Basu (2002) explored the relationship between net inflow of FDI and the proportion of import duties in tax revenue. Nunnenkamp and Spatz (2002) find a significant relationship between FDI inflows and per capita GNP, risk factors and cost factors.

Addison and Heshmati (2003) investigated the determinants of FDI inflows to developing countries over a period 1970 to 1999 and stated that Level of risk affects FDI negatively. Human capital and size of FDI in previous years positively influence the growth of FDI added Quazi and Mahmud (2004). Palit, (2004) observed that the factors like return on equity capital deployed and FII inflows positively encourage greater FDI inflows to India, but inflows of non-resident deposits is not a significant determinant of FDI.

Krugell (2005) along with Pigato (2001), Lemi and Asefa (2003) Yasin (2005) and Odenthal (2001), Fedderke and Romm (2006), Asiedu (2006), Schneider and Frey (1985), Culem (1988), Moore (1993), Love and Lage-Hidalgo (2000) explains that along with the cost of labour, productivity of labour also matters. Even the availability of skilled human capital is crucial. Naeem, Ijaz, and Azam (2005) also supplemented that economic factors like a domestic investment and indirect taxes are significant in Pakistan.

Bhati (2006) studied 69 developing nations during the period 1989-2003 and concluded that social factor like adult literacy had insignificant effect in the study. The low tax rate is important determinant for FDI to developing countries.

Demirhan and Masca (2008) studied the determining factors of FDI Inflows in 38 developing countries for the period 2000-2004 and explored that Growth rate of per capita GDP, Telephone main lines per 1000 people(in logs) (Infrastructure) have positive and statistically significant relation. Tax rate has a negative and statistically significant relation. Jumaev and Hanaysha (2008) found a positively significant relation of FDI inflows with Malaysian lending rate and labour force.

Moreira (2009) in the literature based study in Africa, concludes that lengthy administrative procedures in setting up business have acted as an obstacle in attracting more FDI in the region. Business environment and foreign aid are also significant factors (Mottaleb and kalirajan, 2010). Sharma (2010) found that Long Term Debt (LTD) is one of the statisticall significant variable for India's FDI inflow.

Labour skills influence FDI inflows in India (Pradeep, 2011). Singhania and Gupta (2011) with the help of best fit ARIMA model conclude that scientific research is statistically significant and that FDI Policy changes during the years 1995-1997 had a significant impact on FDI inflows into India. A study by C. S. Shylajan (2011) reviewed the major factors of FDI inflow in India for the period 1993 to 2006 and inferred that FDI is related positively with previous period FDI inflow.

Chauhan, (2012) confirmed that Industry Production is one more important factor influencing FDI inflows to BRICS economies, but Gross Fixed Capital Formation does not create an impact.

Sisili.T. and Elango (2013) studied FDI determinants in India for the period 1997 to 2008 and concluded that FDI inflows are positively influenced by the ratio of domestic investment to GDP.

Madaan and Chowdhry (2016) examined the causal relationship between macroeconomic variables and FDI inflows in Indian environment for the period 1995 to 2014 and evident that IIP, employment ratio, nifty 50 are statistically significant

variables influencing FDI inflows in India, whereas GDP deflator, labour force participation rate, taxes on international trade and population are insignificant variables to determine FDI inflows in India.

To sum up, most of the researchers noted that large import of goods and services, big market size measured by GDP or GDP per capita, sound economic growth or development measured by GDP growth rate, availability of natural resources, low labour cost, adequate infrastructure, exchange rate, trade openness, political stability, low inflation rate, low external debt, low corruption level, high reserves, high national income, large exports are the major factors responsible for large inflow of FDI whereas few researchers tested interest rate, indirect taxes and duties, return on investment, GNP, human capital, domestic investment, business environment, labour skills, foreign aid, employment ratio, population, adult literacy, lengthy administrative procedures, etc. and checked their relation with FDI inflows.

2.2 Review of Literature relating to Factor Determinants of FDI Outflows:

There is significant scope for research on OFDI from emerging countries other than China. Although, OFDI research on China has increased tremendously over the last decade, research about other countries is still in its (Paul & Benito, 2017). The established theories of FDI were developed in the context of developed countries; there is scope for new conceptualizations which deal with different dimensions of OFDI from emerging countries (Paul & Benito, 2017).

The important studies explaining the determinants of FDI outflows are stated herein below:

Buckle et al. (2007) in his study examined pull factors like host country's market size, growth rate, natural resource endowments, ownership advantages, political risk, cultural proximity, inflation and openness to FDI. Authors also examined push factors such as China's outward FDI liberalization policy, the distance between home and host country and export orientedness. The result is that that market size (measured by GDP), cultural proximity (measured by the size of Chinese Diaspora in the host country), FDI policy liberalization and export orientedness had a significant and

positive effect on Chinese outward FDI. It is also noted that state-owned enterprises accounted for a major proportion of China's outward FDI and that the Chinese government played a very important role in boosting outward FDI.

Banga (2008) provides a home-country determinants of FDI from developing countries. He classified these into capability-related drivers, domestic drivers and trade-related drivers. Capability-related drivers are the necessary skills, technology, information and capital which are needed to undergo outward FDI. An inward FDI flow is an important capability driver since they transfer technology and FDI managerial skills to the host country. Domestic drivers are the constraints of domestic firms like poor infrastructure, high cost of capital, high cost of labour and the limited domestic market size that forces a country's firms to create production facilities in foreign countries in order to escape from these home constraints.

Finally, foreign trade or trade openness is an important FDI driver. According to the product life-cycle theory, outward FDI is a logical next step taken by a firm whose initial business is exporting to the host country, thereby becoming familiar with foreign markets.

Using regression analysis, Banga (2008) showed that most exports and imports are significant trade-related drivers of outward FDI, as are previous FDI inflows to the home country. Poor infrastructure facilities and high real wages, but not the small size of the domestic market, are also important determinants of FDI outflow.

Kayam (2009), using UNCTAD (2006), considers local-market conditions, trade conditions, domestic costs of production, local business conditions and home government policies as the home-country drivers of outward FDI. Kayam proved that outward FDI increases with foreign competition entering from FDI inflow in the domestic market as FDI inflow pushes out domestic investment, forcing local entrepreneurs to seek investment opportunities in a foreign country. Improvement in government stability, bureaucratic quality and investment profile of the home country decreases outflows of capital.

Masron and Shahbudin (2010), using cointegration test, examined the determinants of FDI outflow from Thailand and Malaysia. The domestic cost of production, local

market and business competition and the liberalization of capital markets (globalization) are identified as significant factors driving FDI out of these nations.

Tolentino (2010) examined the effect of selected home-country specific national macroeconomic variables, i.e. openness of the economy, interest rates and exchange rates on Chinese and Indian outward FDIs using VAR model on multiple time series data from 1982 to 2006 and 1980 to 2006 repetively. The author hypothesizes that lower interest rates (capital abundance) lead to higher capital outflows. On the other hand, an appreciation of the home-country's exchange rate encourages outward FDI. The author concludes that increasing globalization diminishes the role of home country-specific national factors and openness is the single most important factor responsible for the largest share of India's FDI outflow. China's FDI does not respond to any of the independent variables whereas India's FDI responds to all independent variables.

Baskaran *et al*. (2011) using six case studies from China, India and South Africa, with regards to outward FDI, found that the motivations of outward FDI are the same as those that drive developed-country MNCs to invest in other countries: to move up-value chain, to secure raw materials and to gain access to markets, technology and other sources of competitive advantage in the host countries.

Nunnenkamp, Peter and others (2012) assessed the determinants of India's FDI outflows across a large sample of host countries in the period 1996-2009. The study comprises variables, i.e. GDP, GDP per capita, GDP Growth, Inflation, Trade openness, Stock of Current FDI to GDP, the Heritage Index, the existence of a bilateral investment (or tax) treaty, natural resources and patents in relation to population. The findings show that inflation is not a significant determinant of outward FDI, market-related factors, i.e. GDP, GDP per capita, GDP Growth has dominated the location choices of Indian Direct Investors, India's outward FDI is hardly affected by Natural Resources endowments. India's outward FDI is hardly affected by motives to access raw materials or superior technologies. Market related factors have dominated the location choices of Indian Direct Investors. A larger Indian Diaspora (Heritage Index) in the host countries attracts more FDI.

Das Khanindra ch. (2013) examined various home country determinants of outward FDI for sample of 56 developing countries for the period 1996-2010. The findings of the study indicated that the home country's level of economic development (GDP per Capita), globalization (openness), political risk, science and technology investments and currency strength (Exchange rate) are five important determinants of outward FDI from developing countries. Outward FDI is encouraged by the economic development and globalization of developing countries. However, the negative sign of political risk on outward FDI highlighted the need for improving political governance. The study also recommended that developing countries must work towards enhancing their technological capacity through research and development.

Bano & Jose, (2015) identified key determinants of outward FDI using correlation and regression analysis for the data of 1980 to 2011 of Asian developing countries. They found that FDI outflows are closely associated with high levels of GDP, high domestic savings, large foreign reserves, export orientation and large FDI inflows. FDI inflows are an important determinant of outflows of developed-country whereas GDP, exports and international reserves are statistically important determinants for outward FDI of developing countries. They suggest that for a developing country to become a capital supplier through FDI, it must possess a high domestic savings rate, an export-oriented economy, a rapidly growing GDP and substantial international reserves.

Singh, (2017) examined the long run relationship between FDI outflows, exports and GDP in India for the period 1980-2014 and indicated that all variables are co-integrated. VAR Granger Causality/Block exogeneity Wald Test shows a unidirectional causality running from exports to FDI outflows both in the long run and short run. The positive and statistically significant coefficient of export proves that export is one of the determinants of FDI outflows, whereas GDP has a negative but insignificant impact on FDI outflows. After incorporation of LPG policy, it is found that GDP has a positive but insignificant impact on FDI outflows

I] FDI Outflows and Export, Import:

Mundell (1957) was the first person who initially explained the relationship between FDI and trade. With the help of the Heckscher-Ohlin model of international trade, he

showed that FDI and trade are perfect substitutes. Trade and FDI flows depend on differences in factor endowment and factor prices of various countries and factor prices can be equalized through international trade flows or international factor mobility. FDI, a part of factor mobility across countries, is a substitute for trade.

Bhagwati J. (1978) proved that growth-enhancing effects of FDI are stronger in those countries which follow Export Promotion (EP) policy than those following Import Substitution (IS). Similar findings are confirmed by Balasubramanyam et al (1996) who investigated the role of FDI in growth in context of 46 developing countries using OLS and Generalised Instrumental Variable (GIVE) applied data from 1975 to 1985 and find that FDI grows in Export Promotion (EP) countries and no significant influence on FDI outflow in Import Substitution (IS) countries.

Liu et al (2001) examine the causal linkages between FDI and Trade in China based on a panel data covering 19 home countries over the period 1984-1998 applying Multivariate Granger Causality Test within Vector Autoregressive (VAR) framework suggests that growth of China's imports Granger causes growth of FDI from home country which is consistent with product life cycle theory. It means that more imports lead to more FDI.

Buckle et al. (2007) realized that export orientedness had a significant and positive effect on Chinese outward FDI. Similarly, Banga (2008) also confirmed that most exports and imports are significant trade-related drivers of outward FDI.

Chang and Gayle (2009) examine the export versus FDI decisions by a firm using balanced panel data of US MNCs' direct sales through export and foreign subsidiaries to 56 countries for the period 1999 to 2004 and suggested that exporting firm may undertake FDI to serve the foreign country with local production.

Dasgupta (2009) and Liu et al (2015) have explored the relationship between FDI outflows and exports in the context of emerging countries like India and China. Dasgupta (2009) using VAR Model and Granger Causality Test examine the long run causal effects of Indian Exports and Imports on FDI outflows for the period 1970-2005 and indicated the unidirectional causality from export and import to FDI outflows. The coefficient of exports has a negative sign whereas the coefficient of

imports has a positive sign. This confirms that trade is a driving force behind the FDI outflows.

Shawa and Shen (2013) applied the Cointegration and Granger Causality Tests and analysed the causality relationship between OFDI and Exports of Tanzania over the period 1980-2012. The study indicates that there exists a long run relationship between variables. Only a unidirectional relationship was found between FDI and Export with causality from FDI to export but no causality from export to FDI.

Liu et al. (2015) explored the relationship between FDI outflows (OFDI) and exports and revealed a pattern of complementation between FDI outflows (OFDI) and exports for China and developing countries whereas a pattern of a substitution effect for USA and OECD countries. Further, suggest that development stage of OFDI is determined by complementary or substitute effect between FDI outflows and exports and in early phase OFDI complements export, and in maturity stage OFDI substitutes exports.

Singh (2017) examined the positive and statistically significant coefficient of export and proves that export is one of the determinants of FDI outflows.

The various studies explaining the relationship between FDI outflows and its individual factor determinant is sumarised here as under:

II]   FDI Outflows and Economic Development or Growth (GDP):

Dunning (1981) relates the dynamics of foreign investment with a country's stages of economic development or growth. As a country develops, advantages getting from foreign –owned firms that might invest in that country and that of its own firms that might invest overseas, undergo change (Dunning, 2001). Thus, FDI outflows are totally dependent on the country's level of economic development or growth measured by GDP per capita. Regressions of outward FDI on GDP per capita form a potential view of the development process (Liu et al. 2005). Market-related factors i.e. GDP, GDP per capita, GDP Growth, have dominated the location choices of India's outward FDI. (Nunnenkamp Peter and others, 2012)

However, Erdilek (2003), Hansen (2010) and Verma and Brennan (2011) are of the inverse opinion that every nation may not pass through the stages of investment

development. Similar findings are confirmed by Shawa and Shen (2013) who applied the Cointegration and Granger Causality Tests and analysed the causality relationship between OFDI and GDP Growth of Tanzania over the period 1980-2012 and indicated that there exists a long run relationship between variables but no causality was confirmed between GDP growth and FDI. Belloumi (2014) applied a similar test and examined the causal relationship between economic growth and OFDI of Tunisia for the period 1970-2008 and found that there is a long run relationship among variables when FDI is the dependent variable. Long run relationships are found insignificant for economic growth and trade openness. The Granger Causality Test also indicates that there is no significant causal relationship between FDI and economic growth. Similarly Singh (2017) says GDP has a positive but insignificant impact on FDI outflows.

III] FDI Outflows and Trade openness:

There has been an extensive discussion in the international business literature about the influence of trade liberalization of the country's economy on FDI. Empirical studies on the significance of trade openness of the home country in determining outward FDI have drawn mixed conclusions. Few studies (Kravis and Lipsey, 1982; Culem, 1988; Edwards, 1990; Pantelidis and Kyrkilis, 2005) show a strong positive effect of trade openness on FDI as against weak positive relation depicted in other studies (Schmitz and Bieri, 1972). In contrast to this, Chiou Wei and Zhu (2007) inferred that trade openness is not a significant determinant of outward FDI. Wheeler and Mody (1992) presented a better position and noted a strong positive effect of openness on FDI in manufacturing sector and a weak negative link in the electronics industry. While assessing the relationship between FDI and openness (measured by the ratio of import and export to GDP) Chakrabarti (2001) stated that there is more likely to be a correlation between country's openness to trade and FDI than between FDI and other variables. Ghosh (2007) found a positive correlation between openness and FDI but no causality running from trade openness to FDI. This differs from results of Aizenman and Noy (2006) who reported that Granger causality from FDI to Trade (50%) and trade to FDI (31%) account for most of the linear feedback between trade and FDI.

Tolentino (2010) examined the relationship between a few home country-specific macroeconomic factor i.e. trade openness and outward FDI flows of China and India and concluded that China's FDI does not respond to a shock to trade openness until 9 years. Contrary to this, India's FDI responds to a shock to trade openness in the first 8 years. Thus, openness is the single most important factor responsible for the largest share of India's FDI outflow.

However, Belloumi (2014) applied Cointegration and Granger Causality Test examined the causal relationship between trade openness and OFDI of Tunisia for the period 1970-2008 and found that there is a long run relationship among variables when FDI is the dependent variable. But, the long run relationship is found insignificant for trade openness.

IV] FDI Outflows and Interest Rate:

Interest rate is a proxy for country's capital abundance or shortage, with an inverse relation between the interest rate and outward FDI, since low-interest rate with home country's capital abundance reduces the opportunity cost of capital and increases the profitability of investment in a foreign country. Therefore the ability to raise capital at the preferential rate is one more ownership advantage of MNCs over local companies in host countries (Cushman, 1985). However, Barrell and Pain (1996) noted a positive relationship between the cost of capital and outward FDI. Billington (1999) pointed out that interest rates are one of the significant factors of FDI in seven industrialized countries. Similar findings have been reported while examining the effect of interest rates on FDI in Australia (Yang et al, 2000) and South Korea (Jeon and Rhee, 2008). Hong and Kim (2003) also confirmed that the low-interest rate in European Union countries is an influential factor in locating Korean MNCs in manufacturing sector. The impact of interest rates varies across host countries (Chowdhury and Wheeler, 2008). Tolentino (2010) examined the relationship between home country-specific macroeconomic factor i.e. interest rates and outward FDI flows of China and India and concluded that China's FDI does not respond to a shock to interest rate until 9 years. Contrary to this, India's FDI responds to a shock to the interest rate in first 8 years.

V] FDI Outflows and Exchange Rate:

Academic studies have explained the theoretical and empirical relationships between the home country's exchange rates on outward FDI. Such a relationship shows the heterogeneous impact of exchange rates on FDI observed across countries, types of investment and time (Pain and Van Welsum, 2003). Aliber (1970) found that by lowering the capital requirement of outward FDI in domestic currency unit and reducing the export competitiveness, the appreciation of the home country's currency encourages outward FDI. Froot and Stein (1989) prepared a model which explains that currency movements changes the relative wealth positions of countries and show how the depreciation of dollar increases the propensity of foreign firms to invest in United States by reducing their capital costs for FDI. Klen and Rosengren (1994) demonstrated in his analysis that the exchange rate is one of the fundamental determinants of American FDI in six developed countries for the period 1979 to 1988. Qin (2000) examined the relationship between exchange rate risks and two-way FDI and discussed in one sector, two countries model that higher exchange rate volatility leads to larger FDI whereas a decrease in producer's exchange rate risk drives two -way FDI. Back and Kwok (2002) assessed the effects of the foreign exchange rate and found that firms with stronger home currency have a higher probability of selecting and observing greater changes in wealth. Russ (2007) explored exchange rate as a determinant of FDI and proved that MNC's response depends on whether exchange rate volatility arises in the firm's home or host country. Empirical studies show causal relationship between home country's exchange rate and outward FDI for various countries which is proved in Gopinath et al (1998) and Bolling et al (2007) in United States, Georgopoulos (2008) for Canada, Blonigen (1997) and Guo and Trivedi (2002) for Japan, Choi and Jeon (2007) and Kyrkilis and Pantelidis (2003) for various developed and developing countries and found a positive correlation between home country's exchange rate and outward FDI. Studies of Froot and Stein (1989), Blonigen (1995) and Blonigen and Feenstra (1996) noted a negative correlation between the home country's exchange rate and FDI. However, Tuman and Emmert (1999) detected an insignificant effect of exchange rate on FDI. Chakrabarti (2001) ascertained a low correlation between a country's exchange rate and FDI. Tolentino (2010) examined the relationship between home country's exchange rates and outward FDI flows of China and India and concluded that China's FDI does not

respond to change in exchange rate until 9 years. Contrary to this, India's FDI responds to exchange rates in the first 8 years .

VI]   FDI Outflows and Inflation:

The determinants of India's FDI outflows across a large sample of host countries assessed for the period 1996-2009 and evident that inflation is not a significant determinant of outward FDI (Nunnenkamp, Peter and others, 2012).

VII] FDI Outflows and Natural Resources:

India's outward FDI is hardly affected by Natural Resources endowments in the period 1996-2009 (Nunnenkamp, Peter and others, 2012).

VIII]   FDI Outflows and other macro economic factors:

Nunnenkamp Peter and others (2012) assessed the determinants of India's FDI outflows across a large sample of host countries in the period 1996-2009 and concluded that India's outward FDI is hardly affected by motives to access raw materials or superior technologies. Market-related factors have dominated the location choices of Indian Direct Investors. A larger Indian Diaspora (Heritage Index) in the host countries attracts more FDI.

To sum up, most of the researchers noted that home country's size of economy measured by high levels of GDP, liberalization or globalization policy, large imports, large exports, poor infrastructure, high cost of capital, high cost of labour, limited domestic market size, large FDI inflows, openness, home country's level of economic development measured by GDP per capita, political risk, science and technology investments, currency strength measured by exchange rate, high domestic savings, large foreign reserves and low interest rate are major factors responsible for FDI outflows whereas few researchers tested inflation rate, natural resources, local business conditions, home government policies, foreign competition, government stability, bureaucratic quality, investment profile, cultural proximity or Diaspora and checked their relation with FDI outflows.

2.3 Research Gap:

Increase in FDI inflows into and outflows from developing economies have grabbed the attention of the globe. Till now, various empirical studies have been conducted by researchers to identify the factors that influence the inflow of FDI and have focused on the pull factors or features of host countries that attract or deter FDI inflows. Nevertheless, the variables which were identified as a determinant of FDI vary from study to study, period to period and from country to country. Therefore, it is difficult to derive one list of determinants as some determinants have gained, and some have lost the importance over a period of time. Some of the factors are not yet examined, some are not studied in depth, and some are examined for a short period of five to ten years, considering a limited sample of developing countries.

The empirical literature on outward FDI has remained fairly thin and limited. Existing studies have tried to study the outward FDI experience of a few developing countries covering a limited period. Most of the studies focus on host country determinants, and limited attention is given to source or home country determinants or push factors of outward FDI.

The increase in outward FDI from developing nations has originated a new phenomenon. Namely, a reverse flow of FDI (Reverse FDI), i.e. from developing nations to developed or other developing nations. This raises issues with regards to the determinants, particularly the home (source or origin) country determinants that propel FDI outflows. In view of the above, there is a need to study the factors of host countries that pull the FDI to developing nations and factors of home countries that push the FDI out of developing nations.

Chapter III

Research Methodology

Research Methodology is a way to systematically solve the research problem. Research Methodology may be understood as a science of studying how research is done scientifically, in which we study the various steps that are generally adopted to study research problem along with the logic behind them (Kothari, 2007).

This chapter discusses the research methodology employed for carrying out the study. It includes the period of the study, data sources used to extract the data, sample size used for study, research hypothesis formulated and the statistical tools, techniques and econometric models used to analyze the data.

The research methodology is divided into five sections. Section I highlights the Period of the Study, Section II reflects the Data Sources used for carrying out the study, Section III shows the Sample Size selection and the method used for selecting the sample from the population, Section IV states the research hypothesis, Section V displays the Statistical tools, techniques and econometric models employed for analyzing the data and Section VI mentions the procedure for data analysis.

3.1 Period of the study:

The period of the study ranges from the year 1970 to 2016 (47 years) to study the trend and growth of FDI inflows to and FDI outflows from developing nations. Further, the period is restricted to 20 years from 1996 to 2015 to examine the factor determinants of FDI inflows to and FDI outflows from developing nations, due to non availability of data before the year 1996. The word nation is used as a synonym for country. (https://www.collinsdictionary.com/dictionary/english/country)

3.2 Variables Employed in the study:

The Variables employed in the study are:

Table 3.1 Variables employed in the study

Sr. No.	Variables	Proxy (If any)	Abbreviations	Source
A	Dependent Variable – FDI Inflows	FDI Inflows (US $ Millions)	**FDIIF**	**UNCTAD**
	Dependent Variable – FDI Outflows	FDI Outflows (US $ Millions)	**FDIOF**	**UNCTAD**
B	Independent Variables			
1	Market Size/ Economy size	GDP (current US$)	**GDP**	**WB WDI**
2	Economic Growth	GDP Growth Rate (%)	**GDPGR**	**WB WDI**
3	Trade Openness	Imports and Exports % of GDP	**IMPEXP**	**WB WDI**
4	External Debts	External debt (% of Exports)	**EXTDBT**	**WB WDI**
5	Inflation	Inflation rate (CPI) (%)	**INFLN**	**WB WDI**
6	Infrastructure Development	Electric Power Consumption (Kwh Per Capita)	**EPC**	**WB WDI**
7	Reserves	Total Reserves (includes gold, current US$)	**RESRV**	**WB WDI**
8	Labour Cost	Compensation of Employees (Current LCU)	**COMPE**	**WB WDI**
9	Imports	Imports of Goods & Services (% of GDP)	**IMP**	**WB WDI**
10	Natural Resources	Savings of Natural Resources (% of GNI)	**NRES**	**WB WDI**
11	Political Stability	Political Stability Index (-2.5 (Weak) to 2.5 (Strong)	**POLSTB**	**WB WGI**
12	Exchange Rate	Official Exchange Rate (LCU per US$)	**EXCHRT**	**WB WDI**
13	Corruption Control	Corruption Control Index (-2.5 (Weak) to 2.5 (Strong)	**CORUPC**	**WB WGI**
14	Exports	Exports of Goods & Services (% of GDP)	**EXP**	**WB WDI**
15	Cost of capital	Lending Interest Rate (%)	**LENDIR**	**WB WDI**

UNCTAD – United Nations Conference on Trade and Development

WB WDI – World Bank's World Development Indicators

WB WGI – World Bank's Worldwide Governance Indicators

LCU – Local Currency Unit

3.3 Meaning of Variables Employed

1] FDI Inflows and Outflows. (US $ Millions)

According to UNCTAD statistics, investments by the direct investor classified as FDI are equity capital, the reinvestment of earnings and the provision of long-term and short-term intra-company loans (between parent and affiliate enterprises). Data are in Million U. S. Dollars.

2] GDP (current US $):

GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. Data are in current U.S. dollars. Dollar figures for GDP are converted from domestic currencies using single year official exchange rates. GDP is used as a proxy for Market size and Economy size.

3] GDP Growth Rate (annual %)

GDP Growth Rate is an annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2010 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. GDP growth rate is used as a proxy for Economic Growth.

4] Electric Power Consumption (kwh per capita)

Electric power consumption measures the production of power plants and combined heat and power plants less transmission, distribution, and transformation losses and own use by heat and power plants. Data is measured in Kwh per capita. Electric power consumption is used as a proxy for Infrastructure Development.

5] Exports of goods and services (% of GDP)

Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. They exclude compensation of employees and investment income (formerly called factor services) and transfer payments. Data is measured as a percentage of GDP.

6] Imports of goods and services (% of GDP)

Imports of goods and services represent the value of all goods and other market services received from the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. They exclude compensation of employees and investment income (formerly called factor services) and transfer payments. Data is measured as a percentage of GDP.

7] Imports and Exports % of GDP

Import and Export % of GDP is calculated as Imports % of GDP plus Exports % of GDP divided by two. Import Export % of GDP is used as a proxy for Trade Openness.

8] Total reserves (current US $)

Total reserves comprise holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities. The gold component of these reserves is valued at year-end (December 31) London prices. Data are in current U.S. dollars.

9] Inflation Rate (Consumer Price Index) (annual %)

Inflation as measured by the consumer price index (CPI) reflects the annual percentage change in the cost to the average consumer of acquiring a basket of

goods and services that may be fixed or changed at specified intervals, such as yearly.

10] Official Exchange Rate (LCU per US$)

Official exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar). Data is measured as Local Currency Unit (LCU) per US $.

11] Lending Interest Rate (%)

Lending Interest rate is the bank rate that usually meets the short- and medium-term financing needs of the private sector. This rate is normally differentiated according to the credit worthiness of borrowers and objectives of financing. The terms and conditions attached to these rates differ by country, However, limiting their comparability. Data is measured in the form of a percentage. Lending Interest rate is used as a proxy for Cost of Capital.

12] Political Stability Index

Political Stability and Absence of Violence/Terrorism reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. Data is measured as an estimate of governance, which ranges from approximately -2.5 (weak) to 2.5 (strong) governance performances.

13] Adjusted Savings: Natural Resources Depletion (% of GNI)

Natural resource depletion is the sum of net forest depletion, energy depletion, and mineral depletion. Net forest depletion is unit resource rents times the excess of round wood harvest over natural growth. Energy depletion is the ratio of the value of the stock of energy resources to the remaining reserve lifetime (capped at 25 years). It covers coal, crude oil, and natural gas. Mineral depletion is the ratio of the value of the stock of mineral resources to the remaining reserve lifetime (capped at 25 years). It covers tin, gold, lead, zinc, iron, copper, nickel,

silver, bauxite, and phosphate. Data is measured as a percentage of Gross National Income. Adjusted Savings: Natural Resources Depletion is used as a proxy for Natural Resources.

14] Corruption Control Index

Control of Corruption reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Data is measured as an estimate of governance, which ranges from approximately -2.5 (weak) to 2.5 (strong) governance performances.

15] External debt stocks (% of exports of goods, services and primary income)

External debt stocks mean total external debt stocks as a percentage to exports of goods, services and primary income. Data is measured as a percentage of exports of goods, services and primary income. External debt stock is used as a proxy for External debt.

16] Compensation of employees (Current LCU)

Compensation of employees consists of all payments in cash, as well as in kind (such as food and housing), to employees in return for services rendered, and government contributions to social insurance schemes such as social security and pensions that provide benefits to employees. Data is measured in the current Local Currency Unit (LCU). Compensation of employees is used as a proxy for Labour Cost.

3.4 Data Sources and Data Collection:

3.4.1 Data Sources:

This sub section states the sources from where the data is collected. Present study completely depends on the secondary data collected from various sources, which include UNCTAD's World Investment Reports (WIR), IMF's World Economic Outlook Report, UNCTAD statistics, World Bank's World Development Indicators (WDI) and World Bank's Worldwide Governance Indicators (WGI). Extensive library

work is also carried out by referring Ph.D. Theses, dissertations, journals, books, magazines, research papers, reports, etc. for a detailed review of the literature.

For this study, we require data on the following aspects which is obtained from the respective sources as mentioned below:

1. Data on Foreign Direct Investment (FDI) Inflows and Outflows is obtained from UNCTAD Statistics.
   (http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx)

2. Data on Gross Domestic Product (GDP), GDP Growth Rate, Imports as a percentage of GDP, Exports as a percentage of GDP, External Debt as a percentage of Exports, Inflation Rate (Consumer Price Index (CPI), Electric Power Consumption (EPC), Total Reserves, Compensation of Employees, Natural Resources Depletion, Official Exchange Rate and Lending Interest Rate are obtained from World Bank's World Development Indicators (WDI).
   (http://databank.worldbank.org/data/source/world-development-indicators)

3. Data on Political Stability Index and Corruption Control Index are obtained from the World Bank's Worldwide Governance Indicators (WGI).
   (https://datacatalog.worldbank.org/dataset/worldwide governance-indicators)

3.4.2 Data collection Frequency:

This sub section states the frequency of data collection for all the variables included in the study. Annual data is collected for all the parameters viz. Foreign Direct Investment (FDI) Inflows and Outflows, Gross Domestic Product (GDP), GDP Growth Rate, Imports as a percentage of GDP, Exports as a percentage of GDP, External Debt as a percentage of Exports, Inflation Rate (Consumer Price Index (CPI), Electric Power Consumption (EPC), Total Reserves, Compensation of Employees, Natural Resources Depletion, Official Exchange Rate, Lending Interest Rate, Political Stability Index and Corruption Control Index.

3.4.3 Type and size of data:

This sub section explains the type of data and the size of data used for this study. The type of data used in the existing study is unbalanced long panel data. Panel data is a combination of cross-sectional and time series data. Long panel means cross sections are more than the time. In this study, nations are cross sections and years are time. Objective 2 covers 92 nations, Objective 3 covers 44 oil-exporting nations and 48 non-oil-exporting nations, Objective 4 covers 56 nations, Objective 5 covers 29 oil-exporting nations and 27 non-oil-exporting nations and time is 20 years for these objectives.

3.4.4 Sample Size Selection:

There are total 195 countries in the world out of which 157 countries are developing countries in the world according to IMF's World Economic Outlook Report, April 2012 and World Bank Data, published in 2014 (Refer Table 3.2). Out of the total universe of 157 developing nations, 153 developing nations (Refer Table 3.3) are chosen as a sample to study the trend and growth of FDI inflows and 136 developing nations (Refer Table 3.4) are chosen as a sample to study the trend and growth of FDI outflows in objective 1 due to non-availability of data and/or absence of capital flows of the countries.

Further, out of 153 developing nations, 92 nations (Refer Table 3.5) is chosen as a sample to study the determinants of FDI inflows of developing nations in objective 2, out of that 44 nations (Refer Table 3.6) are selected as a sample to study the determinants of FDI inflows of oil-exporting developing nations and remaining 48 nations (Refer Table 3.7) is a sample to study the determinants of FDI inflows of non-oil-exporting developing nations in objective 3.

To study the factors determining FDI outflows from developing nations, 56 nations out of 136 (Refer Table 3.8) are chosen as a sample in objective 4. Further, out of 56 nations, 29 oil-exporting nations (Refer Table 3.9) are selected to study the factors determining FDI outflows and remaining 27 non-oil-exporting nations (Refer Table 3.10) are selected as sample to study the factors determining FDI outflows in objective 5.

The criteria used for selecting the sample nations are as given below:

1. Only developing nations are considered for the study.
2. Nations with data availability of FDI flows are included in the study. Thus, in objective 1, countries with Nil FDI inflows and countries with Nil FDI outflows are not taken into consideration.
3. Nations with data availability of all independent variables are included in the study. Thus, in objective 2, only 92 nations and in objective 4, only 56 nations are considered as a sample.
4. Years from 1970 to 2016 are considered to study trend and growth of FDI flows but years from 1996 to 2015 are considered to study the factor determinants due to inconsistency in data before 1996.
5. The judgmental sampling method of Non-probability sampling methods has been used for extracting the sample nations from the population.

The sample nations are shown in tables (Table 3.3 to 3.10) stated below.

The description of Sample size vis-à-vis objectives is shown in Table 3.2.

Table 3.2 Description of Sample size vis-à-vis objectives

Sr. No. of Objectives	Natureof Data	Period of Data	Population (Developing Countries)	SampleSize	Reason for Exclusion of Remaining Countries
1 (FDI Inflows)	Time Series	1970 to 2016	157	153	Non-availability of data or Nil
1 (FDI Outflows)	Time Series	1970 to 2016	157	136	Non-availability of data or Nil
2 (FDI Inflows)	Panel Data	1996 to 2015	157	92	Non-availability of data
3 (Oil-exporting)	Panel Data	1996 to 2015	-	44	-
3 (Non-Oil-exporting)	Panel Data	1996 to 2015	`-	48	-
4 (FDI Outflows)	Panel Data	1996 to 2015	157	56	Non-availability of data
5 (Oil-exporting)	Panel Data	1996 to 2015	-	29	-
5 (Non-Oil-exporting)	Panel Data	1996 to 2015	-	27	-

Table 3.3 – Sample of 153 Developing Nations (FDI Inflows) (For objective 1)

Sr. No.	Developing Nations	Sr. No.	Developing Nations	Sr. No.	Developing Nations
1	Afghanistan	52	Grenada	103	Pakistan
2	Albania	53	Guatemala	104	Palau
3	Algeria	54	Guinea	105	Panama
4	Angola	55	Guinea-Bissau	106	Papua New Guinea
5	Antigua & Barbuda	56	Guyana	107	Paraguay
6	Argentina	57	Haiti	108	Peru
7	Armenia	58	Honduras	109	Philippines
8	Azerbaijan	59	Hungary	110	Poland
9	Bahamas	60	India	111	Qatar
10	Bahrain	61	Indonesia	112	Romania
11	Bangladesh	62	Iran	113	Russia
12	Barbados	63	Iraq	114	Rwanda
13	Belarus	64	Jamaica	115	Samoa
14	Belize	65	Jordan	116	Sao Tome and Principe
15	Benin	66	Kazakhstan	117	Saudi Arabia
16	Bhutan	67	Kenya	118	Senegal
17	Bolivia	68	Kiribati	119	Serbia
18	Bosnia & Herzegovina	69	Korea, Dem. People's Rep. (North Korea)	120	Seychelles
19	Botswana	70	Kuwait	121	Sierra Leone
20	Brazil	71	Kyrgyzstan	122	Solomon Islands
21	Bulgaria	72	Lao People's Dem.Rep	123	Somalia
22	Burkina Faso	73	Latvia	124	South Africa
23	Burundi	74	Lebanon	125	Sri Lanka
24	Cambodia	75	Lesotho	126	St. Kitts & Nevis
25	Cameroon	76	Liberia	127	St. Lucia
26	Cape Verde	77	Libya	128	St. Vincent & Grenadines
27	Central African Republic	78	Lithuania	129	Sudan
28	Chad	79	Macedonia	130	Suriname
29	Chile	80	Madagascar	131	Swaziland
30	China	81	Malawi	132	Syrian Arab Republic
31	Colombia	82	Malaysia	133	Tajikistan

32	Comoros	83	Maldives	134	Tanzania
33	Congo	84	Mali	135	Thailand
34	Costa Rica	85	Marshal Islands	136	Timor-Leste
35	Cote d'Ivoire	86	Mauritania	137	Togo
36	Croatia	87	Mauritius	138	Tonga
37	Dem. Rep. of Congo	88	Mexico	139	Trinidad & Tobago
38	Djibouti	89	Micronesia	140	Tunisia
39	Dominica	90	Moldova	141	Turkey
40	Dominican Republic	91	Mongolia	142	Turkmenistan
41	Ecuador	92	Montenegro	143	U.A.E
42	Egypt	93	Morocco	144	Uganda
43	El Salvador	94	Mozambique	145	Ukraine
44	Equatorial Guinea	95	Myanmar	146	Uruguay
45	Eritrea	96	Namibia	147	Uzbekistan
46	Ethiopia	97	Nauru	148	Vanuatu
47	Fiji	98	Nepal	149	Venezuela
48	Gabon	99	Nicaragua	150	Viet Nam
49	Gambia	100	Niger	151	Yemen, Arab Republic
50	Georgia	101	Nigeria	152	Zambia
51	Ghana	102	Oman	153	Zimbabwe

Source: Author's compilation from World Bank

Table 3.4 Sample of 136 Developing Nations (FDI Outflow) (For objective 1)

Sr. No.	Developing Nations	Sr. No.	Developing Nations
1	Albania	69	Liberia
2	Algeria	70	Libya
3	Angola	71	Lithuania
4	Antigua & Barbuda	72	Macedonia
5	Argentina	73	Madagascar
6	Armenia	74	Malawi
7	Azerbaijan	75	Malaysia
8	Bahamas	76	Mali
9	Bahrain	77	Marshal islands
10	Bangladesh	78	Mauritania
11	Barbados	79	Mauritius
12	Belarus	80	Mexico
13	Belize	81	Moldova
14	Benin	82	Mongolia
15	Bolivia	83	Montenegro
16	Bosnia & Herzegovina	84	Morocco
17	Botswana	85	Mozambique
18	Brazil	86	Namibia
19	Bulgaria	87	Nauru
20	Burkina Faso	88	Niger
21	Burundi	89	Nigeria
22	Cambodia	90	Oman
23	Cameroon	91	Pakistan
24	Cape Verde	92	Palau
25	Central African Republic	93	Panama
26	Chad	94	Papua New Guinea
27	Chile	95	Paraguay
28	China	96	Peru
29	Colombia	97	Philippines
30	Congo	98	Poland
31	Dem. Rep. of the Congo	99	Qatar
32	Costa Rica	100	Romania
33	Cote d'Ivoire	101	Russian Federation
34	Croatia	102	Rwanda

35	Dominica	103	St Kitts & Nevis
36	Dominican Republic	104	St. Lucia
37	Ecuador	105	St. Vincent & Grenadines
38	Egypt	106	Samoa
39	El Salvador	107	Sao Tome and Principe
40	Equatorial Guinea	108	Saudi Arabia
41	Fiji	109	Senegal
42	Gabon	110	Serbia
43	Georgia	111	Seychelles
44	Ghana	112	Sierra Leone
45	Grenada	113	Solomon Island
46	Guatemala	114	South Africa
47	Guinea	115	Sri Lanka
48	Guinea-Bissau	116	Sudan
49	Guyana	117	Suriname
50	Haiti	118	Swaziland
51	Honduras	119	Syrian Arab Republic
52	Hungary	120	Tanzania
53	India	121	Thailand
54	Indonesia	122	Togo
55	Iran	123	Tonga
56	Iraq	124	Trinidad & Tobago
57	Jamaica	125	Tunisia
58	Jordan	126	Turkey
59	Kazakhstan	127	Uganda
60	Kenya	128	Ukraine
61	Kiribati	129	U.A.E.
62	Korea (North)	130	Uruguay
63	Kuwait	131	Vanuatu
64	Kyrgyzstan	132	Venezuela
65	Laos	133	Viet Nam
66	Latvia	134	Yemen
67	Lebanon	135	Zambia
68	Lesotho	136	Zimbabwe

Source: Author's compilation from World Bank

Table 3.5 Sample of 92 Developing Nations (For objective 2)

Sr. No.	Developing Nations	Sr. No.	Developing Nations	Sr. No.	Developing Nations
1	Albania	32	Guinea-Bissau	63	Philippines
2	Algeria	33	Guyana	64	Poland
3	Argentina	34	Honduras	65	Qatar
4	Armenia	35	Hungary	66	Romania
5	Azerbaijan	36	India	67	Russia
6	Bahrain	37	Indonesia	68	Saudi Arabia
7	Barbados	38	Iran	69	Serbia
8	Belarus	39	Jamaica	70	Seychelles
9	Belize	40	Jordan	71	Sierra Leone
10	Bolivia	41	Kazakhstan	72	South Africa
11	Brazil	42	Kenya	73	Sri Lanka
12	Bulgaria	43	Kuwait	74	St. Kitts & Nevis
13	Cameroon	44	Kyrgyzstan	75	St. Lucia
14	Chile	45	Latvia	76	St. Vincent & Grenadines
15	China	46	Lebanon	77	Suriname
16	Colombia	47	Lithuania	78	Swaziland
17	Congo	48	Macedonia	79	Tanzania
18	Costa Rica	49	Malaysia	80	Thailand
19	Cote d'Ivoire	50	Mauritius	81	Tonga
20	Croatia	51	Mexico	82	Trinidad & Tobago
21	Dominica	52	Moldova	83	Tunisia
22	Dominican Republic	53	Mongolia	84	Turkey
23	Ecuador	54	Morocco	85	Turkmenistan
24	Egypt	55	Namibia	86	U.A.E
25	El Salvador	56	Nicaragua	87	Ukraine
26	Fiji	57	Nigeria	88	Uruguay
27	Gabon	58	Oman	89	Uzbekistan
28	Georgia	59	Pakistan	90	Venezuela
29	Ghana	60	Panama	91	Viet Nam
30	Grenada	61	Paraguay	92	Zimbabwe
31	Guatemala	62	Peru		

Source: Author's compilation from World Bank

Table 3.6 Sample of 44 Oil-exporting Developing Nations (FDI Inflows) (For Objective 3)

Sr. No.	Developing Nations	Sr. No.	Developing Nations	Sr. No.	Developing Nations
1	Albania	16	Egypt	31	Philippines
2	Algeria	17	Gabon	32	Poland
3	Argentina	18	Georgia	33	Qatar
4	Azerbaijan	19	Guatemala	34	Romania
5	Bahrain	20	Indonesia	35	Russia
6	Barbados	21	Iran	36	Saudi Arabia
7	Belize	22	Kazakhstan	37	Suriname
8	Bolivia	23	Kuwait	38	Thailand
9	Brazil	24	Lithuania	39	Trinidad & Tobago
10	Cameroon	25	Malaysia	40	Tunisia
11	China	26	Mexico	41	Turkmenistan
12	Colombia	27	Mongolia	42	U.A.E
13	Congo	28	Nigeria	43	Venezuela
14	Cote d'Ivoire	29	Oman	44	Viet Nam
15	Ecuador	30	Peru		

Source: Author's compilation from World Bank

Table 3.7 Sample of 48 Non-Oil-exporting Developing Nations (FDI Inflows) (For Objective 3)

Sr. No.	Developing Nations	Sr. No.	Developing Nations	Sr. No.	Developing Nations
1	Armenia	17	India	33	Serbia
2	Belarus	18	Jamaica	34	Seychelles
3	Bulgaria	19	Jordan	35	Sierra Leone
4	Chile	20	Kenya	36	South Africa
5	Costa Rica	21	Kyrgyzstan	37	Sri Lanka
6	Croatia	22	Latvia	38	St. Kitts & Nevis
7	Dominica	23	Lebanon	39	St. Lucia
8	Dominican Republic	24	Macedonia	40	St. Vincent & Grenadines
9	El Salvador	25	Mauritius	41	Swaziland
10	Fiji	26	Moldova	42	Tanzania
11	Ghana	27	Morocco	43	Tonga
12	Grenada	28	Namibia	44	Turkey
13	Guinea-Bissau	29	Nicaragua	45	Ukraine
14	Guyana	30	Pakistan	46	Uruguay
15	Honduras	31	Panama	47	Uzbekistan
16	Hungary	32	Paraguay	48	Zimbabwe

Source: Author's compilation from World Bank

Table 3.8 Sample of 56 Developing Nations (FDI Outflows) (For objective 4)

Sr. No.	Developing Nations	Sr. No.	Developing Nations	Sr. No.	Developing Nations
1	Argentina	21	India	41	Poland
2	Bahrain	22	Indonesia	42	Qatar
3	Barbados	23	Iran	43	Romania
4	Belize	24	Jamaica	44	Russia
5	Bolivia	25	Jordan	45	Saudi Arabia
6	Brazil	26	Kenya	46	Seychelles
7	Bulgaria	27	Kuwait	47	South Africa
8	Cameroon	28	Latvia	48	Sri Lanka
9	Chile	29	Lebanon	49	Swaziland
10	China	30	Malaysia	50	Thailand
11	Colombia	31	Mauritius	51	Tunisia
12	Costa Rica	32	Mexico	52	Turkey
13	Croatia	33	Morocco	53	Ukraine
14	Dominican Republic	34	Namibia	54	U.A.E.
15	Ecuador	35	Nigeria	55	Venezuela
16	Egypt	36	Pakistan	56	Zimbabwe
17	Fiji	37	Panama		
18	Gabon	38	Paraguay		
19	Honduras	39	Peru		
20	Hungary	40	Philippines		

Source: Author's compilation from World Bank

Table 3.9 Sample of 29 Oil-exporting Developing Nations (FDI Outflows) (For objective 5)

Sr. No.	Developing Nations	Sr. No.	Developing Nations
1	Argentina	16	Malaysia
2	Bahrain	17	Mexico
3	Barbados	18	Nigeria
4	Belize	19	Peru
5	Bolivia	20	Philippines
6	Brazil	21	Poland
7	Cameroon	22	Qatar
8	China	23	Romania
9	Colombia	24	Russia
10	Ecuador	25	Saudi Arabia
11	Egypt	26	Thailand
12	Gabon	27	Tunisia
13	Indonesia	28	U.A.E.
14	Iran	29	Venezuela
15	Kuwait		

Source: Author's compilation from World Bank

Table 3.10 Sample of 27 Non-Oil-exporting Developing Nations (FDI Outflows) (For Objective 5)

Sr. No.	Developing Nations	Sr. No.	Developing Nations
1	Bulgaria	15	Mauritius
2	Chile	16	Morocco
3	Croatia	17	Namibia
4	Costa Rica	18	Pakistan
5	Dominican Republic	19	Panama
6	Fiji	20	Paraguay
7	Honduras	21	Seychelles
8	Hungary	22	South Africa
9	India	23	Sri Lanka
10	Jamaica	24	Swaziland
11	Jordan	25	Turkey
12	Kenya	26	Ukraine
13	Latvia	27	Zimbabwe
14	Lebanon		

Source: Author's compilation from World Bank

3.5 Research Hypotheses:

The hypothesis is "a tentative generalization, the validity of which remains to be tested" (Lundberg, 1942). Based on the objectives of the study, a null hypothesis and an alternative hypothesis are constructed. They are as follows:

3.5.1 Research Hypotheses for Objective 2:

H_1 *: There is no significant relationship between FDI inflows of DevelopingNations and its determinants.*

H_{1a} *: There is no significant fixed effect in the panel data.*

H_{1b} *: There is no significant random effect in the panel data.*

H_{1c} *: Random Effect Model is appropriate.*

3.5.2 Research Hypotheses for Objective 3:

H_2 *: There is no significant relationship between FDI inflows of Oil Exporting Developing Nations and its determinants.*

H_{2a} *: There is no significant fixed effect in the panel data.*

H_{2b} *: There is no significant random effect in the panel data.*

H_{2c} *: Random Effect Model is appropriate.*

3.5.3 Research Hypotheses for Objective 3:

H_3 *: There is no significant relationship between FDI inflows of Non-Oil Exporting Developing Nations and its determinants.*

H_{3a} *: There is no significant fixed effect in the panel data.*

H_{3b} *: There is no significant random effect in the panel data.*

H_{3c} *: Random Effect Model is appropriate.*

3.5.4 Research Hypotheses for Objective 4:

H_4 *: There is no significant relationship between FDI outflows from Developing Nations and its determinants.*

H_{4a} *: There is no significant fixed effect in the panel data.*

H_{4b} *: There is no significant random effect in the panel data.*

H_{4c} *: Random Effect Model is appropriate.*

3.5.5 Research Hypotheses for Objective 5:

H_5 *: There is no significant relationship between FDI outflows from Oil Exporting Developing Nations and its determinants.*

H_{5a} *: There is no significant fixed effect in the panel data.*

H_{5b} *: There is no significant random effect in the panel data.*

H_{5c} *: Random Effect Model is appropriate.*

3.5.6 Research Hypotheses for Objective 5:

H_6 *: There is no significant relationship between FDI outflows from Non-Oil-exporting Developing Nations and its determinants.*

H_{6a} *: There is no significant fixed effect in the panel data.*

H_{6b} *: There is no significant random effect in the panel data.*

H_{6c} *: Random Effect Model is appropriate.*

3.6 Statistical Tools, Techniques and Econometric Models:

This section deals with measures, statistical techniques and econometric models employed to carry out data analysis.

1. To study the trend and growth of FDI inflows and outflows, the growth rate, annual growth rate, Average Annual Growth Rate (AAGR) and Compound Annual Growth Rate (CAGR) have been calculated. Tables, Bar graphs and Line graphs are prepared through Tabular and Graphical Presentation methods to explain the same.

2. To study the impact of factors determinants on FDI inflows and outflows of developing nations, Panel Data Multiple Regression Econometric Models have been used.

   a. Descriptive statistics are applied to understand the Measures of Central Tendency i.e. Mean, Minimum value, Maximum value, Measures of Dispersion i.e. Standard Deviation (SD) and The coefficient of variation (CV) of all the variables.

   b. Correlation analysis has been used to study the degree of a statistical association between the variables used for the study. Correlation explains how close two variables are to having a linear relationship with each other.

   c. Panel Data Regression Models have been used to evaluate the impact of socio economic factors like Market size (GDP), Economic Growth (GDP Growth Rate), Trade openness (Imports and Exports as a percentage of GDP), External Debt (as a percentage of Exports), Inflation (CPI), Infrastructure development (Electric Power Consumption (EPC), Reserves, Labour Cost (Compensation of Employees), Imports (as a percentage of GDP), Natural Resources (% of GNI), Political stability, Exchange Rate and Control of Corruption on the flow of FDI in developing nations.

   d. Panel Data Regression Models are also used to evaluate the impact of socio economic factors like Economy Size (GDP), Economic Growth (GDP Growth Rate), Trade openness (Imports and Exports as a

percentage of GDP), Inflation (CPI), Infrastructure development (Electric Power Consumption (EPC), Labour Cost (Compensation of Employees), Imports (as a percentage of GDP), Natural Resources (% of GNI), Political Stability, Exchange Rate, Control of Corruption, Exports (as a percentage of GDP) and Cost of capital (Lending Interest Rate) on the flow of FDI from developing nations.

The following Panel Data Econometric Equation is used to evaluate the impact of factors on FDI inflows.

$$Y_{it} = a + \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it} + \beta_4 x_{4it} + \beta_5 x_{5it} + \beta_6 x_{6it} + \beta_7 x_{7it} + \beta_8 x_{8it} + \beta_9 x_{9it} + \beta_{10} x_{10it} + \beta_{11} x_{11it} + \beta_{12} x_{12it} + \beta_{13} x_{13it} + u_{it}$$

Where, Y = FDI inflows in Million \$ (Dependent Variable),

a = Constant

β = Regression Coefficients of variables

u = error term

i = 1, 2, _ _ _ _ N (Cross Sectional Units i.e. Countries)

t = 1, 2, _ _ _ _ N (Time Period i.e. Years)

Independent Variables:

X_1 = Market size (GDP in \$)

X_2 = Economic Growth (GDP Growth Rate in %)

X_3 = Trade Openness (Imports and Exports as a % of GDP)

X_4 = External Debt (as a % of Exports)

X_5 = Inflation (CPI in %)

X_6 = Infrastructure Development (Electric Power Consumption (EPC) in Kwh per capita)

X_7 = Reserves (Total Reserves in \$)

X_8 = Labour Cost (Compensation of Employees in LCU)

X_9 = Imports (as a % of GDP)

X_{10} = Natural Resources (% of GNI)

X_{11} = Political stability (Index -2.5 to +2.5)

X_{12} = Exchange Rate (LCU per \$)

X_{13} = Control of Corruption (Index -2.5 to +2.5)

The following Panel Data Econometric Equation is used to evaluate the impact of factors on FDI outflows.

$$Y_{it} = a_+ \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it} + \beta_4 x_{4it} + \beta_5 x_{5it} + \beta_6 x_{6it} + \beta_7 x_{7it} + \beta_8 x_{8it} + \beta_9 x_{9it} + \beta_{10} x_{10it} + \beta_{11} x_{11it} + \beta_{12} x_{12it} + \beta_{13} x_{13it} + u_{it}$$

Where, Y = FDI outflows in Million $ (Dependent Variable)

a = Constant

β = Regression Coefficients of variables

u = error term

i = 1, 2, _ _ _ _ N (Cross Sectional Units i.e. Countries)

t = 1, 2, _ _ _ _ N (Time Period i.e. Years)

Independent Variables:

X_1 = Economy Size (GDP)

X_2 = Economic Growth (GDP Growth Rate in %)

X_3 = Trade Openness (Imports and Exports as a % of GDP)

X_4 = Inflation (CPI in %)

X_5 = Infrastructure Development (Electric Power Consumption (EPC) in Kwh per capita)

X_6 = Labour Cost (Compensation of Employees in LCU)

X_7 = Imports (as a % of GDP)

X_8 = Natural Resources (% of GNI)

X_9 = Political stability (Index -2.5 to +2.5)

X_{10} = Exchange Rate (LCU per $)

X_{11} = Control of Corruption (Index -2.5 to +2.5)

X_{12} = Exports (as a % of GDP)

X_{13} = Cost of capital (Lending Interest Rate in %)

3.7 Procedure for Data Analysis:

3.7.1 Descriptive Statistics:

Descriptive statistics are a method of organizing, summarizing, and presenting data in an informative way. (Lind, Marchal, & Wathen, 2010) Descriptive statistics are used to understand the Measures of Central Tendency, i.e. Mean, Minimum value, Maximum value, Measures of Dispersion, i.e. Standard Deviation (SD), The coefficient of variation (CV) of all the variables. It also includes Tables and Graphic presentation.

3.7.2 Correlation Analysis:

Correlation analysis is one of the methods of determining the relationship between the variables. Karl Pearson's coefficient of correlation (Simple correlation) is the most widely used method of measuring the degree of relationship between the two variables.

The value of correlation 'r'lies between +1 and -1. A positive value of 'r 'indicates a positive correlation between the two variables, (i.e. changes in both variables take place in the statement direction), whereas the negative value of ' r ' indicate negative correlation (i.e. changes in two variables taking place in the opposite direction). A zero value of 'r'indicates that there is no association between the two variables. If the value of 'r' is +1, it indicates a perfect positive correlation, and when it is -1, it indicates a perfect negative correlation. The value of 'r' nearer to +1 or -1 indicates high degree of correlation between the two variables (Kothari, 2007).

3.7.3 Regression Analysis:

Regression is the determination of a statistical relationship between two or more variables. There are two types of regression i.e. Simple and Multiple regressions. However, the present study covers Multiple Regression.

Multiple regressions:

When there are two or more than two independent variables, the analysis concerning relationship is known as multiple correlation and equation describing such a

relationship as the multiple regression equation. Multiple regression equation is shown below.

$$Y\text{^} = a + b_1X_1 + b_2X_2$$

Where, $Y\text{^}$ = Estimated value of Y for a given value of X

X_1 and X_2 are two independent variables, Y is the dependent variable, a is constant and b_1 and b_2 are regression coefficients.

In Multiple Regression Analysis, the regression coefficients (b_1 and b_2) become less reliable as the degree of correlation between the independent variables (X_1 and X_2) increases. If there is a high degree of correlation between the independent variables, there are chances of the problem of multicollinearity. Prediction for the dependent variable can be made even when multicollinearity is present, but it is necessary to ensure that multicollinearity is reduced to the minimum. (Kothari, 2007)

3.7.4 Panel Data Modeling:

This study uses Panel Data Modeling for data analysis since the data used is panel data. Therefore, the concept of panel data modeling is explained below.

Panel data is also called longitudinal data or cross-sectional time-series data. This data have "observations on the same units in several different time periods" (Kennedy, 2008: 281). A panel data set has multiple entities, each of which has repeated measurements at different time periods.

Panel data models examine group effects (individual-specific), time effects or both in order to deal with heterogeneity or individual effect that may or may not be observed.(e.g. Nation is a unit (individual or entity) and the year is a time period).

These effects are either fixed effect or random effect. A Fixed Effect Model examines if intercepts vary across group or time period, whereas a Random Effect Model explores differences in error variance components across individual or time period. A one-way model includes only one set of dummy variables while a two-way model considers two sets of dummy variables.

Pooled OLS Model: (Ordinary Least Square)

If individual effect u_i (cross-sectional or time specific effect) does not exist ($u_i = 0$), Ordinary Least Squares (OLS) produces efficient and consistent parameter estimates.

$$y_{it} = \alpha + X_{it}'\beta + \varepsilon_{it} \,(u_i = 0)$$

OLS consists of five core assumptions (Greene, 2008: 11-19; Kennedy, 2008: 41-42).

a. **Linearity** says that the dependent variable is formulated as a linear function of a set of independent variable and the error (disturbance) term.

b. **Exogeneity** says that the expected value of disturbances is zero or disturbances are not correlated with any regressor.

c. Disturbances have the same variance (**a homoskedasticity**) and are not related to one another (**b nonautocorrelation**)

d. The observations on the independent variable are **not stochastic** but fixed in repeated samples without measurement errors.

e. **Full rank** assumption says that there is no exact linear relationship among independent variables (**no multicollinearity**).

Violation of above assumptions results as the OLS estimator is no longer Best Linear Unbiased Estimator (BLUE). Then panel data models provide a way to deal with these problems.

Fixed V/S Random Effects:

Panel data models examine fixed and/or random effects of individual or time. The major difference between fixed and random effect models lies in the role of dummy variables. A parameter estimate of a dummy variable is a part of the intercept in a fixed effect model and an error component in a random effect model. Slopes remain the same across the group or time period in either fixed or random effect model.

Table 3.11: Details of Fixed Effect Model and Random Effect Model

	Fixed Effect Model	**Random Effect Model**
Functional form	$y_{it}=(\alpha+ u_i)+ X_{it}^{'}\beta+ v_{it}$	$y_{it}=\alpha+ X_{it}^{'}\beta+(u_i+ v_{it})$
Assumption	-	Individual effects are not correlated with the regressor
Intercepts	Varying across the group and/or time	Constant
Error variances	Constant	Randomly distributed across group and/or time
Slopes	Constant	Constant
Estimation	LSDV, within effect estimation	GLS, FGLS (EGLS)
Hypothesis test	F test	Breusch-Pagan LM test

Note: LSDV - Least Squares Dummy Variable, GLS - Generalized Least Squares

FGLS - Feasible Generalized Least Squares,

EGLS - Estimated Generalized Least Squares

A fixed group effect model examines individual differences in intercepts, assuming the same slopes and constant variance across individual (group and entity). Since an individual specific effect is time-invariant and considered a part of the intercept, u_i is allowed to be correlated with other regressor; i.e. OLS assumption 2 is not violated. This fixed effect model is estimated by Least Squares Dummy Variable (LSDV) regression (OLS with a set of dummies) and within effect estimation methods.

A random effect model assumes that individual effect (heterogeneity) is not correlated with any regressor and then estimates error variance specific to groups (or times). Hence, u_i is an individual specific random heterogeneity or a component of the composite error term. Therefore a random effect model is also called an Error Component Model (ECM). The intercepts and slopes of regressor are the same across the individual. The difference among individuals (or time periods) lies in their individual specific errors, not in their intercepts.

A random effect model is estimated by Generalized Least Squares (GLS) when a covariance structure of individual i, Σ (sigma), is known. The Feasible Generalized Least Squares (FGLS) or Estimated Generalized Least Squares (EGLS) method is used to estimate the entire variance-covariance matrix V (Σ in all diagonal elements and 0 in all off-diagonal elements) when Σ is not known. There are various estimation methods for FGLS including the maximum likelihood method and simulation (Baltagi and Cheng, 1994).

A random effect model reduces the number of parameters to be estimated but will produce inconsistent estimates when the individual specific random effect is correlated with regressors (Greene, 2008: 200-201).

Fixed effects are tested by the F test, while random effects are examined by the Lagrange Multiplier (LM) test (Breusch and Pagan, 1980). If the null hypothesis (H_o) is not rejected (accepted) in either test, the pooled OLS regression is favored. The Hausman specification test (Hausman, 1978) compares a random effect model to its fixed counterpart. If the null hypothesis is not rejected (accepted), a random effect model is favored.

If one cross-sectional or time-series variable is considered (e.g., country), this is called a one-way fixed or random effect model. Two-way effect models have two sets of dummy variables for individual and/or time variables (e.g., country and year) and thus entail some issues in estimation and interpretation.

Testing Fixed and Random Effects:

A fixed effect is tested by F-test, while a random effect is examined by Breusch and Pagan's (1980) Lagrange Multiplier (LM) test. The F-Test compares a fixed effect model and OLS to see how much fixed effect model can improve the goodness-of-fit, whereas LM Test contrasts a random effect model with OLS. The similarity between random and fixed effect estimators is tested by a Hausman test.

F-test for Fixed Effects:

In a regression, the null hypothesis (H_o) is that all dummy parameters except for one for the dropped is zero. The alternative hypothesis is that at least one dummy

parameter is not zero. This hypothesis is tested by an F test, which is based on loss of goodness-of-fit. This test contrasts LSDV (robust model) with the pooled OLS (efficient model) and examines the extent that the goodness-of-fit measures (SSE or R^2) changed.

If the null hypothesis is rejected then it is concluded that there is a significant fixed effect in the panel data or a significant increase in goodness-of-fit in the fixed effect model; therefore, the fixed effect model is better than the pooled OLS.

Breusch-Pagan LM Test for Random Effects:

Breusch and Pagan's (1980) Lagrange Multiplier (LM) test examines if the individual (or time) specific variance components are zero. The LM statistic follows the chi-squared distribution with one degree of freedom. If the null hypothesis (H_o) is rejected, then it may be concluded that there is a significant random effect in the panel data and that the random effect model can deal with heterogeneity better than the pooled OLS.

Hausman Test for Comparing Fixed and Random Effects:

To know whether fixed effect or random effect is more relevant and significant in the panel data, the Hausman specification test compares fixed and random effect models under the null hypothesis that individual effects are not correlated with any regressor in the model (Hausman, 1978). If the null hypothesis of no correlation is not violated, LSDV and GLS are consistent, but LSDV is inefficient; otherwise, LSDV is consistent but GLS is inconsistent and biased (Greene, 2008: 208). The estimates of LSDV and GLS should not differ systematically under the null hypothesis. The Hausman test uses that "the covariance of an efficient estimator with its difference from an inefficient estimator is zero" (Greene, 2008: 208)

Hausman test examines if "the random effects estimate is insignificantly different from the unbiased fixed effect estimate" (Kennedy, 2008: 286). If the null hypothesis (H_o) of no correlation is rejected, then it is concluded that individual effects are significantly correlated with at least one regressor in the model and thus the random effect model is problematic. Therefore, there is a need to select a fixed effect model.

If the null hypothesis (H_o) is not rejected, then it assumes the similarity of the covariance matrices renders such a problem (Greene, 2008: 209). Therefore, a random effect model is selected.

Selection of Appropriate Model:

In order to select an appropriate model for a panel, the following table (Table 4.10) needs to be followed. If both null hypotheses of F-test and LM test are not rejected, your best model is the pooled OLS. If the null hypothesis of an F-test in a fixed effect model is rejected and the null of a Breusch-Pagan LM test in a random effect model is not, a fixed effect model is a case. If there is both a significant fixed and random effect in the panel data, then Hausman Test is conducted to compare a fixed effect model and a random effect model. If the null hypothesis of Hausman Test is rejected, fit a random effect model; otherwise, a fixed effect model is preferred.

The result includes goodness-of-fit measures (e.g., F score, SSE, and R^2), parameter estimates with their standard errors, and test results (i.e., F-test, LM test, Hausman test). The rules for the selection of an appropriate model are stated in Table 3.12 (Park, 2011).

Table 3.12 Rules for Selection of Appropriate Panel Data Regression Model:

Fixed Effect Model	Random Effect Model	Appropriate Model Selection
(F test)	(B-P LM test)	
H_o is not rejected	H_o is not rejected	Pooled OLS
(No fixed effect)	(No random effect)	
H_o is rejected	H_o is not rejected	Fixed Effect Model
(fixed effect)	(No random effect)	
H_o is not rejected	H_o is rejected	Random Effect Model
(No fixed effect)	(random effect)	
H_o is rejected	H_o is rejected	If the null hypothesis (H_o) of a Hausman test is rejected; choose a fixed effect model. If H_o is not rejected, fit a Random effect model.
(fixed effect)	(random effect)	

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Chapter IV

Trend and Growth of FDI Inflows and Outflows of Developing Nations

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The trend and growth of FDI inflows and outflows of developing nations are described in the following pages.

4.1 Trend and Growth of FDI Inflows to Developing Nations:

This section of the chapter explains the trend and growth of the flow of FDI in developing nations. The trend of FDI flow may include increasing and decreasing trend. Growth, growth rate, annual growth rate, Average Annual Growth Rate (AAGR) and Compound Annual Growth Rate (CAGR) of FDI inflows has been described.

4.1.1 Research Methodology Applied

To study the trend and growth of FDI inflows to developing nations, the period ranges from the year 1970 to 2016 i.e. 47 years. Foreign Direct Investment (FDI) inflows used for this purpose is measured in Million $. FDI inflows data is annual data. Out of the total universe of 157 developing nations, 153 developing nations (Refer Table 3.3) are chosen as a sample. To carry out data analysis, the trend of FDI inflows, growth, growth rate, annual growth rate, Average Annual Growth Rate (AAGR) and Compound Annual Growth Rate (CAGR) have been calculated. To explain the above analysis, Tables, Bar graphs, Line graphs are also prepared using Tabular and Graphical Presentation methods. Descriptive statistics are applied to understand the Measures of Central Tendency, i.e. Mean, Minimum value, Maximum value and Measures of Dispersion, i.e. Standard Deviation (SD) and The coefficient of variation (CV). Simple Regression method is applied using Gretl software to calculate Compound Annual Growth Rate (CAGR).

4.1.2 Empirical Analysis and Discussion

Empirical Analysis and Discussion include descriptive statistics, graphical presentation of growth, growth rate, annual growth rate, Average Annual Growth Rate (AAGR) and simple regression analysis to calculate Compound Annual Growth Rate (CAGR) of FDI inflows to developing nations.

4.1.2.1 Descriptive Statistics of FDI Inflows

This sub section contains the Descriptive Statistics of FDI Inflows to Developing Nations as shown in Table 4.1

Table 4.1: Descriptive Statistics of FDI Inflows to Developing Nations

(in USD Millions)

Mean	2,17,448.9
Standard Deviation	2,67,062
Minimum	3,224.964
Maximum	7,74,803.3

Source: Author's Compilation from UNCTAD Statistics.

Table 4.1 displays the performance of FDI inflows through descriptive statistics, which further reflects that the mean value of FDI inflows of developing nations is 2,17,448.9 USD millions, and the Standard Deviation is 2,67,062 USD millions. The minimum value of FDI inflows is 3,224.96 USD millions, and the maximum value of FDI inflows is 7,74,803.3 USD millions.

4.1.2.2 Trend of FDI Inflows to Developing Nations

The trend of the flow of FDI to developing nations is explained with the help of Bar chart shown in Figure 4A. The trend is shown in the form of absolute values, i.e. US Dollar Millions.

Figure 4A- Trend of FDI Inflows to Developing Nations
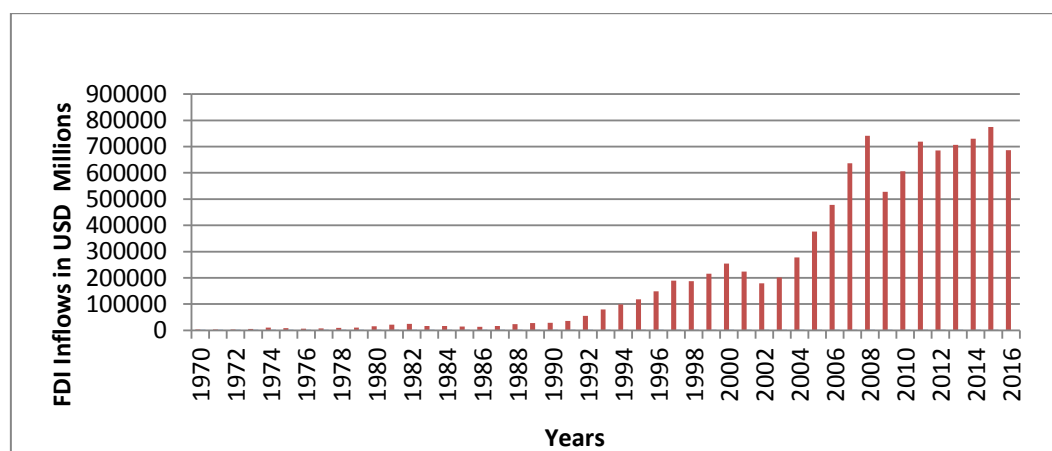
Source: Author's Compilation from UNCTAD Statistics.

Interpretation:

Figure 4 A explains the trend of FDI inflows to developing nations. There is an increasing trend of FDI inflows from the year 1970 till 2016. However, there were few ups and downs in between. From 1970 till 2000 it was increasing, i.e. 2,54,239 USD millions but in the year 2002 FDI decreased to 179478 USD millions. The The decline of 2000 -2002 may be due to the 1998–2002 Argentine Great Depression or early 2000s recession or 2002 stock market crash. (The 1998–2002 Argentine Great Depression was an economic depression in Argentina, which began in the third quarter of 1998 and lasted until the second quarter of 2002). (The early 2000s recession was a decline in economic activity which mainly occurred in developed countries. The recession affected the European Union during 2000 and 2001 and the United States in 2002 and 2003) (In 2002, stock prices took a sharp downturn (some say "stock market crash" or "the Internet bubble bursting") in stock markets across the United States, Canada, Asia, and Europe.)

Again, the FDI inflows started increasing till 2008, i.e. 7,41,166 USD millions and decline to 5,27,366 USD millions in 2009, and FDI inflows crossed the level of 2008 after six years, i.e. in the year 2015, i.e. 7,74,803 USD millions. The decrease of FDI inflows to developing nations in the year 2008 to 2009 may be due to the Great Recession. (Great Recession was a period of general economic decline observed in world markets during the early 2010s. The scale and timing of the recession varied from country to country). In terms of overall impact, the International Monetary Fund concluded that it was the worst global recession since World War II.According to the US National Bureau of Economic Research (NBER) the recession, as experienced in US, began in December 2007 and ended in June 2009, thus extending over 19 months. The Great Recession was related to the financial crisis of 2007–08 and U.S. subprime mortgage crisis of 2007–09. The Great Recession has resulted in the scarcity of valuable assets in the market economy and the collapse of the financial sector in the world economy.

Again, the FDI inflows decline in 2016, i.e. 6,86,396 USD millions. FDI inflow to developing nations was highest in the year 2015 at 7,74,803 USD millions.

4.1.2.3 Growth of FDI Inflows to Developing Nations

The growth of FDI inflows to developing nations is explained with the help of line diagram shown in Figure 4 B. Growth is calculated as FDI of the current year minus FDI of the previous year. It is shown in form of US Dollar Millions.

Figure 4 B: Growth of FDI Inflows to Developing Nations.
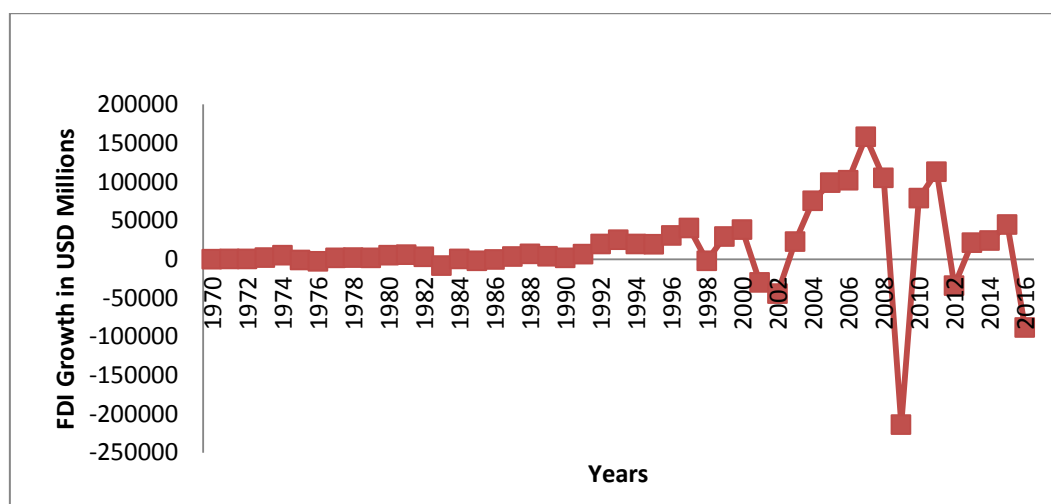
Source: Author's Compilation from UNCTAD Statistics.

Figure 4 B depicts the growth of FDI inflows to developing nations over the previous years. Till 1982 there was a positive growth every year. It is further noted that the growth of FDI inflows was negative in the year 1983, i.e. 8,348 USD millions, then in year 1998 i.e. 2,204 USD millions, in the year 2001 i.e. 30,261, in the year 2002 i.e. 44,500 USD millions, in 2009, i.e. 2,13,800 USD millions, in 2012, i.e. 34,146 USD millions and 2016, it was 88,407 USD millions. The growth was heavily declined in the year 2009, and it was highly positive in the year 2007, i.e. 1,57,963 USD millions. The growth declined over 1998-2002 may be due to the 1998–2002 Argentine Great Depression or early 2000s recession or 2002 stock market crash as explained earlier.

The growth of FDI inflow of developing nations shows a major decline in 2009 and 2012 may be due to the 2007-2009 US-based Great Recession as explained earlier. The growth was negative again in 2016, i.e. 88,407 USD millions.

4.1.2.4 Growth Rates of FDI Inflows to Developing Nations

The growth rates of FDI inflows to devefloping nations are explained with the help of the Line Diagram shown in Figure 4 C. Growth rate is calculated as FDI growth divided by FDI of the previous year multiplied by 100. It is shown in the form of a percentage.

Figure 4 C: Growth Rates of FDI Inflows to Developing Nations
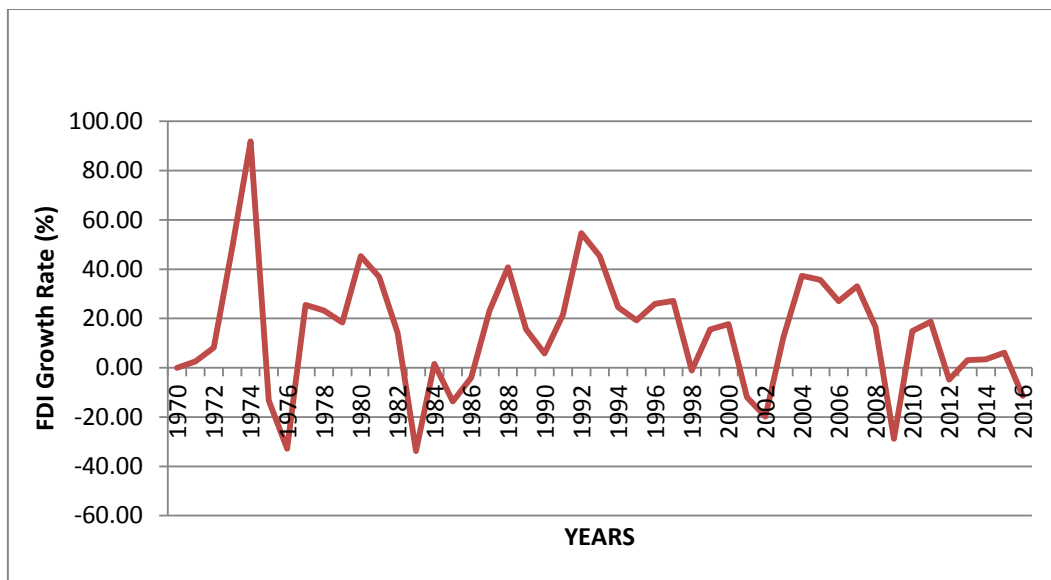
Source: Author's Compilation from UNCTAD Statistics.

Figure 4C depicts the Growth Rates of FDI inflows to developing nations over the previous years. From 1970 till 1974 the growth rates of FDI inflows were positive. It is also noted that the growth rates of FDI inflows was negative in the year 1975 i.e. 13.25%, in year 1976 i.e. 32.87%, in year 1983 i.e. 33.84%, in year 1986 i.e 4%, in year 1998 i.e. 1.17%, in year 2001i.e. 11.90%, in year 2002 i.e 19.87%, in 2009 i.e. 28.85%, in 2012 i.e 4.75% and in 2016, it was 11.41%.   The growth rates were lowest in the years 1983, 1976 and 2009. The growth rate was very high in the year 1974 and 1992, i.e. 91.81% and 54.61% respectively. The growth rate was negative over 1998 - 2002 may be due to the 1998–2002 Argentine Great Depression or early 2000s recession or 2002 stock market crash as explained earlier.

The growth rate of FDI inflows of developing nations was lower in 2009 and in 2012 may be due to the 2007- 2009 US-based Great Recession as explained earlier. The growth rate was negative again in 2016, i.e. 11.41%.

4.1.2.5 Average Annual Growth Rate (AAGR) of FDI Inflows to Developing Nations.

The Average Annual Growth Rates (AAGR) of FDI inflows to developing nations are explained with the help of Line graphs shown in Figure 4 D. Average Annual Growth Rate is calculated as Sum of annual growth rates divided by a number of years. It is shown in the form of a percentage.

Figure 4 D: Average Annual Growth Rate (%) of FDI Inflows to Developing Nations.

Source: Author's Compilation.

Figure 4 D displays the Average Annual Growth Rates of FDI inflows to developing nations. For 21 years from 1970 to 1990, the average growth rate of FDI inflows was 14.47%. It is also noted that for the next 26 years from 1991 to 2016, the annual growth rate of FDI inflows was nearly equal, i.e. 14.69 %. The combined average growth rate for a total of 47 years from 1970 to 2016 was 14.58 %. It is a good sign that the annual growth rate of FDI inflows of developing nations is positive.

4.1.2.6 Compound Annual Growth Rate (CAGR) of FDI Inflows to Developing Nations

Compound Annual Growth Rate (CAGR) is computed using a simple regression method through Gretl software. FDI inflows in log form are considered as the dependent variable and time trend as an independent variable. OLS regression model is shown in Table 4.2 to explain the CAGR.

Table 4.2: Compound Annual Growth Rate (CAGR) of FDI Inflows to Developing Nations

OLS Regression Model (T = 47)

Dependent variable: l_FDI_IF

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	8.00647	0.101283	79.0501	<0.00001	***
Time	**0.129164**	0.00367394	35.1568	<0.00001	***

R-squared	0.964871	Adjusted R-squared	0.964091
F(1, 45)	1236.000	P-value(F)	2.28e-34

Source: Author's Compilation.

Instantaneous/ Annual Growth Rate (in Gretl) = 0.129164 X 100 = 12.92%

Compound Annual Growth Rate (CAGR) (in Gretl / Excel) = (exp(0.129164)-1) X 100 = 13.7876720646588 = 13.79%

Table 4.2 explains the growth rate of FDI inflows at a point of time, i.e. one year, which is referred to as instantaneous or annual growth rate, it is 12.92% and the growth rate over a period of time, i.e. 47 years, which is referred to as Compound Annual Growth Rate (CAGR), it is comparatively higher, i.e. 13.79 %.

4.2 Trend and Growth of FDI Outflows from Developing Nations:

This section explains the trend and growth of flow of the FDI from developing nations. FDI flow reflects increasing and/or decreasing trend. Growth, growth rate, annual growth rate, Average Annual Growth Rate (AAGR) and Compound Annual Growth Rate (CAGR) of FDI outflows has been described.

4.2.1 Research Methodology Applied

The trend and growth of FDI outflows from developing nations is studied using the data of 47 years from the year 1970 to 2016. FDI outflow used for this purpose is measured in Million USD. FDI outflows data is applied on an annual basis. The

sample size is 136 developing nations (Refer Table 3.4). The trend of FDI outflows, growth, growth rate, annual growth rate, Average Annual Growth Rate (AAGR) and Compound Annual Growth Rate (CAGR) have been calculated as a part of data analysis. To explain the above analysis, Tables, Bar graphs, Line graphs are prepared through Tabular and Graphical Presentation methods. Descriptive statistics are also applied to understand the Measures of Central Tendency, i.e. Mean, Minimum value, Maximum value and Measures of Dispersion, i.e. Standard Deviation (SD) and The coefficient of variation (CV). Simple Regression method is applied using Gretl software to calculate Compound Annual Growth Rate (CAGR).

4.2.2 Empirical Analysis and Discussion:

Empirical Analysis and Discussion include descriptive statistics, graphical presentation of growth, growth rate, annual growth rate, Average Annual Growth Rate (AAGR) and simple regression analysis to calculate Compound Annual Growth Rate (CAGR) of FDI outflows.

4.2.2.1 Descriptive Statistics of FDI outflows

This sub section contains the Descriptive Statistics of FDI outflows from Developing Nations as shown in Table 4.3.

Table 4.3: Descriptive Statistics of FDI outflows from developing nations

(in USD Millions)

Mean	113509.1
Standard Deviation	171876.4
Minimum	39.68972
Maximum	596256.2

Source: Author's Compilation.

Table 4.3 displays the performance of FDI outflows through descriptive statistics which further reflects that the mean value of FDI outflows from developing nations is 1,13,509.1 USD millions, and the Standard Deviation is 1,71,876.4 USD millions. The minimum FDI outflows are 39.68 USD millions whereas maximum FDI outflows are 596256.2 USD millions.

4.2.2.2 Trend of FDI Outflows from Developing Nations

The trend of FDI outflow from developing nations is explained with the help of Bar chart shown in Figure 5 A. The trend is shown in the form of absolute values, i.e. US Dollar Millions.

Figure 4 E: Trend of FDI Outflows from Developing Nations
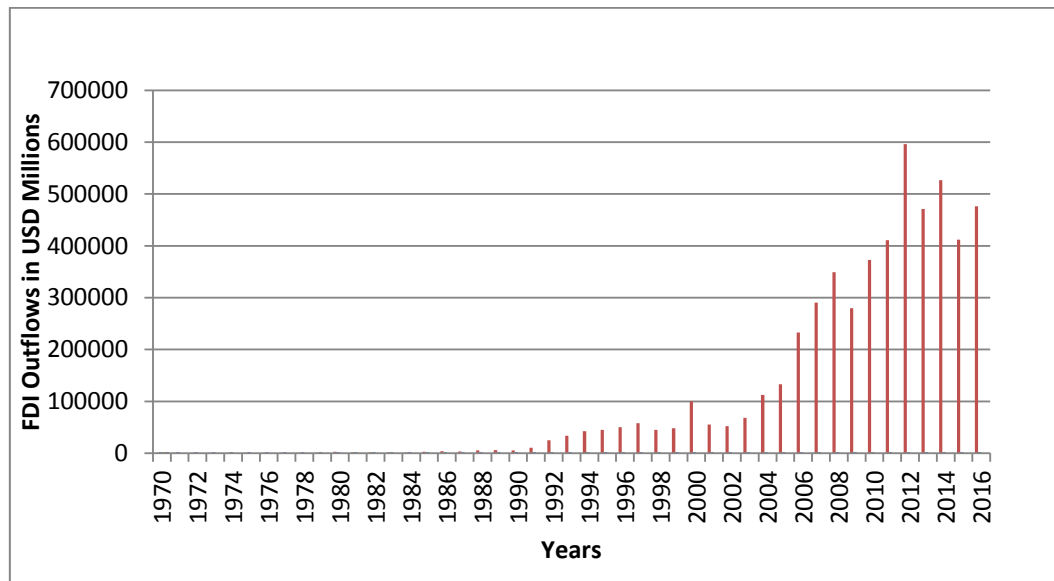
Source: Author's Compilation from UNCTAD Statistics.

Interpretation:

Figure 4 E explains the trend of FDI outflows from developing nations. There is an increasing trend of FDI outflows from the year 1970 till 2016. However, there were few ups and downs in between. From 1970 till 1997 it was continuously increasing, i.e. 58,061 USD millions but in the year 1998 FDI decreased to 44,696 USD millions. The year 2000 shows FDI outflow of 1,00,084 and again declined to half, i.e. 55,349 USD millions in 2001 and further decreased to 52,114 USD millions in 2002. The decline of 1998 - 2002 may be due to the 1998–2002 Argentine Great Depression or early 2000s recession or 2002 stock market crash, as explained earlier.

Again, the FDI outflows started increasing till 2008, i.e. 3,49,016 USD millions and decline to 2,79,561 USD millions in 2009 and FDI outflows crossed the level of 2008 after four years in 2012, i.e. 5,96,256 USD millions. The decrease of FDI outflows

from developing nations in the year 2009 to 2011 may be due to the 2007- 2009 US-based Great Recession as explained earlier.

Further, the FDI outflows decreased and reached 4,12,072 USD millions in 2015. FDI outflow from developing nations was highest in the year 2012 at 5,96,256 USD millions.

4.2.2.3 Growth of FDI Outflows from Developing Nations.

The growth of FDI outflows from developing nations is explained with the help of the Line graph shown in Figure 4 F. Growth is calculated as FDI of current year minus FDI of the previous year. It is shown in the form of US Dollar Millions.

Figure 4 F: Growth of FDI Outflows from Developing Nations.
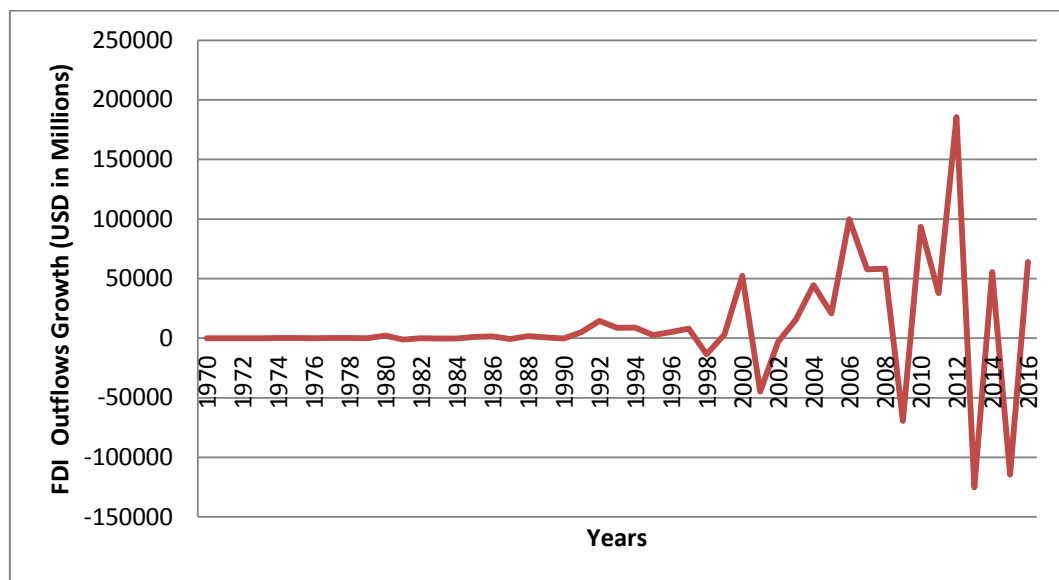
Source: Author's Compilation from UNCTAD Statistics.

Figure 4F depicts the growth of FDI outflows from developing nations over the previous years. Till 1997 the growth was at one pace, and there was no major negative growth. It is further noted that the growth of FDI outflows was very much negative in the year 1998, i.e. 13,364 USD millions, then in year 2001i.e. 44,735 USD millions, in the, year 2009, i.e. 69,455 USD millions, in 2013 i.e 1,25,205 USD millions and in 2015, it was 1,14,466 USD millions. The growth was heavily declined in the year 2009, 2013 and 2015 and it was highly positive in the year 2012 i.e. 1,85,528 USD millions. The growth declined in 1998 and 2001 may be due to the 1998–2002

Argentine Great Depression or early 2000s recession or 2002 stock market crash as explained earlier.

The growth of FDI outflow from developing nations shows a major decline in 2009 may be due to the 2007- 2009 US-based Great Recession as explained earlier. The growth was negative again in 2013 and 2015.

4.2.2.4 Growth Rates of FDI Outflows from Developing Nations

The growth rates of FDI outflows from developing nations are explained with the help of the Line diagram shown in Figure 4 G. Growth rate is calculated as FDI growth divided by FDI of the previous year multiplied by 100. It is shown in the form of a percentage.

Figure 4 G: Growth Rates of FDI Outflows from Developing Nations.
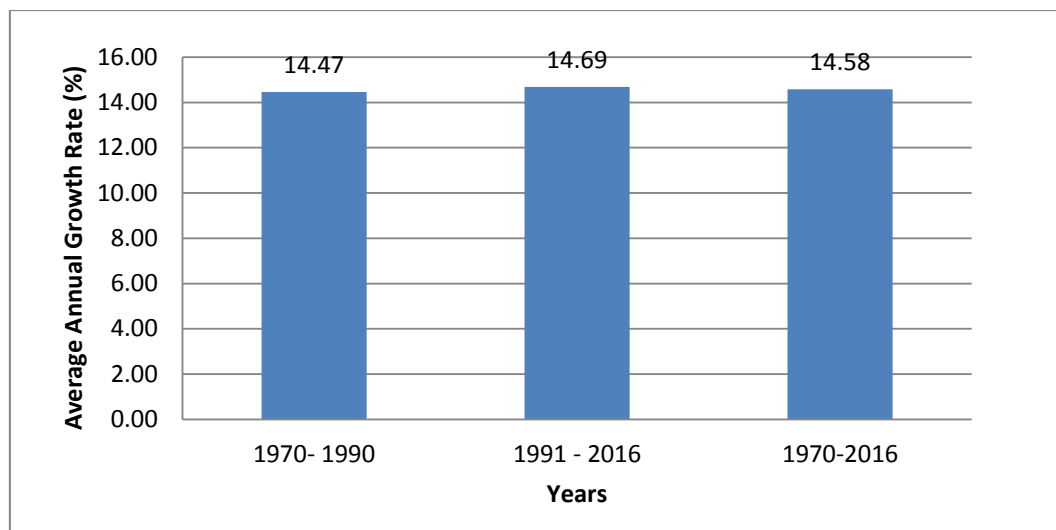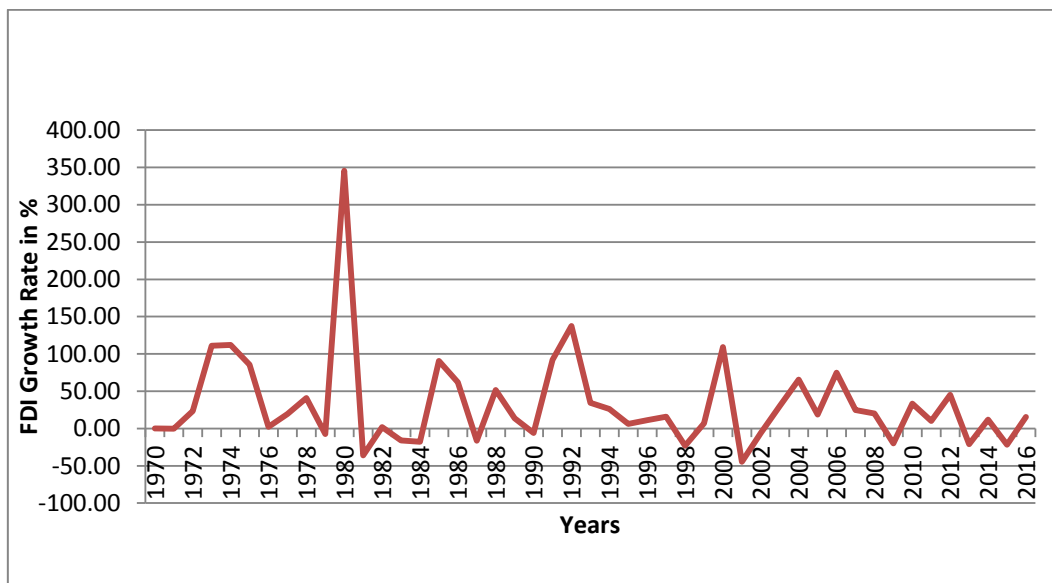

Source: Author's Compilation from UNCTAD Statistics.

Figure 4 G depicts the Growth Rates of FDI outflows from developing nations over the previous years. From 1970 till 1978, the growth rates of FDI outflows were positive. It is also noted that the growth rates of FDI outflows was negative in the year 1979 i.e. 7.51%, in year 1981 i.e. 36.17%, in year 1983 i.e. 16.03%, in year 1984 i.e. 17.75%, in year 1987 i.e. 16.20%, in year 1990 i.e. 5.82%, in year 1998 i.e. 23.02%, in year 2001i.e. 44.70%, in year 2002 i.e 5.85%, in 2009 i.e. 19.90%, in 2013 i.e. 21% and in 2015, it was 21.74%.   The growth rates were lowest in the years 1981, 1998

and 2001. The growth rate was very high in the year 1980 and 1992, i.e. 345.71% and 137.44% respectively. The growth rate was negative during 1998, 2001 and 2002 may be due to the 1998–2002 Argentine Great Depression or early 2000s recession or 2002 stock market crash, as explained earlier.

The growth rate of FDI outflows from developing nations was lower in 2009 and 2013 may be due to the 2007- 2009 US-based Great Recession as explained earlier. The growth rate was negative again in 2015, i.e. 21.74%.

4.2.2.5 Average Annual Growth Rate (AAGR) of FDI Outflows from Developing Nations

The Average Annual Growth Rates (AAGR) of FDI outflows from developing nations are explained with the help of Line diagram shown in Figure 4 H. Average Annual Growth Rate is calculated as the sum of annual growth rates divided by a number of years. It is shown in the form of a percentage.

Figure 4 H: Average Annual Growth Rate of (%) FDI Outflows from Developing Nations
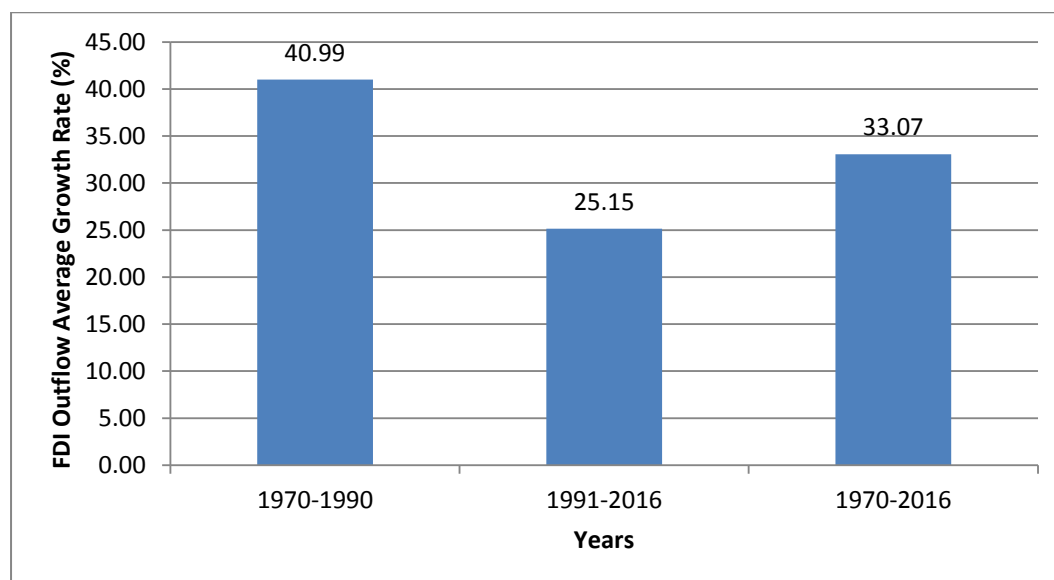
Source: Author's Compilation.

Figure 4 H show the Average Annual Growth Rate of FDI Outflows from Developing Nations. The average annual growth rate of FDI outflows for the period 1970 to 1990, i.e. 21 years results into 40.99% whereas the average annual growth rate for the

period 1991 to 2016, i.e. 26 years is 25.15%. The overall average annual growth rate for the period 1970 to 2016, i.e. 47 years is 33.07%. This proves that average growth rate of FDI outflows from developing nations during the period 1991-2016 is lower by 15% (approximately) as compared to 1970-1990 and it is also lower by 8% (approximately) as compared to 1970-2016.

4.2.2.6 Compound Annual Growth Rate (CAGR) of FDI Outflows from Developing Nations

Compound Annual Growth Rate (CAGR) is computed using a simple regression method through Gretl software. FDI outflows in log form are considered as dependent variable and time trend as an independent variable. OLS regression model is shown in Table 4.4 to explain the CAGR.

Table 4.4: Compound Annual Growth Rate (CAGR) of FDI Outflows from Developing Nations

OLS Regression Model (T = 47)

Dependent variable: l_FDI_Outflow

	Coefficient	Std. Error	t-ratio	p-value	
Const	4.5344	0.174273	26.0190	<0.00001	***
Time	**0.204714**	0.00632154	32.3835	<0.00001	***

R-squared	0.958855	Adjusted R-squared	0.957941
F(1, 45)	1048.692	P-value(F)	8.01e-33

Source: Author's Compilation.

Instantaneous / Annual Growth Rate (in Gretl) = 0.204714 X 100 = 20.47 %

CAGR (in Gretl) = (exp (0.204714)-1) X 100 = 22.7174 % = 22.72 %

Table 4.4 explains that the growth rate of FDI outflows at a point of time, i.e. one year, which is referred to as instantaneous or annual growth rate is 20.47 % and the growth rate over a period of time, i.e. 47 years, which is referred to as Compound Annual Growth Rate (CAGR) is comparatively higher, i.e. 22.72%.

At the end of this chapter, the first objective of this study is fulfilled, i.e. to study the trend and growth of FDI inflows and outflows of developing nations. Through the analysis, it is observed that there is an increasing trend in case of both FDI inflows as well as outflows of developing nations with few ups and downs. The decreasing trend was noted in 2002, 2009 and 2016, but it was also seen that FDI has reached at the height of 7,74,803 $ Millions for inflows and 5,96,256 $ Millions for outflows. Nevertheless, FDI inflows are growing at a CAGR of 13.79% and outflows at 22.72% over a timeframe of forty- seven years.

Chapter V

Determinants of FDI Inflows to Developing Nations

This chapter is based on the second objective, i.e. "To identify the factors that determine FDI inflows to Developing Nations." It analyses and detects the determinants of FDI inflows to developing nations. There are fourteen independent variables or factors under the study, out of which some factors may have a significant impact on the flow of FDI in select developing nations. Significant variables express the extent to which factors have an impact on the flow of FDI to developing nations.

5.1 Research Methodology Applied:

To study the determinants of FDI inflows to developing nations, the period of the study is from 1996 to 2015, i.e. for period of 20 years. The secondary data of all variables used in this chapter is annual data. The sample size is 92 developing nations (Refer Table 3.5) chosen based on the availability of data. The total numbers of observations are 1840. The data used is a long panel type. The data is analysed using statistical techniques like Descriptive statistics which is applied to understand the Measures of Central Tendency, i.e. Mean, Minimum value, Maximum value and Measures of Dispersion, i.e. Standard Deviation (SD) and The coefficient of variation (CV). Correlation analysis is used to study the extent of the relationship between FDI inflows and its independent variables. The study utilized Panel data modeling (Multiple regression analysis) explained in chapter III. Gretl software is used for analysis. The following research hypotheses are tested to prove whether the independent variables affect the flow of FDI in developing nations.

Research Hypotheses	Tools Used For Testing
H_1: *There is no significant relationship between FDI inflows of Developing Nations and its determinants.*	Multiple Regression Analysis
H_{1a}: *There is no significant fixed effect in the panel data.*	F Test
H_{1b}: *There is no significant random effect in the panel data.*	Lagrange Multiplier (LM) Test
H_{1c}: *Random Effect Model is appropriate.*	Hausman Test

5.2 Empirical Analysis and Discussion:

5.2.1 Descriptive Analysis

Table 5.1: Descriptive Statistics (92 Developing Nations)

Variable	Mean	Minimum	Maximum	Std. Dev.	C.V.
FDIIF	4574.5	1	3.14E+05	17546	3.8357
GDP	1.63E+11	1.81E+08	1.14E+13	6.35E+11	3.8902
GDPGR	4.0375	-28.1	34.5	4.2997	1.0649
IMPEXP	43.438	7.8178	118.82	18.82	0.43327
EXTDBT	173.11	6.9735	3789.1	239.49	1.3834
INFLN	41.22	-35.837	24411	786.23	19.074
EPC	2699.1	55.211	21911	3468.5	1.2851
RESRV	4.17E+10	4.04E+06	4.25E+12	2.50E+11	5.9918
COMPE	4.68E+12	2.06E+07	6.04E+14	3.38E+13	7.2231
IMP	45.437	8.9054	119.21	19.638	0.4322
NRES	7.4213	1.57E-05	83.015	10.847	1.4616
POLSTB	-0.1928	-2.8447	1.3643	0.82585	4.2835
EXCHRT	628.43	0.001323	29011	2442.8	3.8871
CORUPC	-0.25439	-1.5434	2.0091	0.70511	2.7718

Source: Author's Compilation.

Table 5.1 presents the descriptive statistics of all variables for the data of 92 developing nations used in this chapter. The table shows that FDI inflow of developing nations on an average is 4,574.5 million dollars. The minimum FDI inflow is 1 million dollars and the maximum is 3,14,000 million dollars. The standard deviation is 17,546 million dollars and the coefficient of variation is 3.83 million dollars. For twenty years, the mean of GDP 1,63,000 million dollars, GDP growth rate 4.04 %, imports and exports 43.44 % of GDP, external debt 173.11 % of exports, inflation rate 41.22 %, electric power consumption 2,699.1 kwh per capita, reserve fund 41,700 million dollars, compensation of employees 4,680 billion LCU, imports 45.43 % of GDP, natural resources 7.42 % of GNI, political stability index − 0.19, exchange rate 628.43 LCU per $ and corruption control index is − 0.25.

5.2.2 Correlation Analysis

Table 5.2: Correlation Matrix (92 Developing Nations)

F	G	GG	IE	ED	IF	EP	R	C	I	N	PS	EX	CP	
1.00	0.95	0.06	0.21	-0.08	-0.01	0.18	0.92	0.01	0.08	-0.03	0.04	-0.01	0.27	**F**
	1.00	0.03	0.14	-0.08	-0.01	0.16	0.95	0.06	0.02	-0.03	-0.01	0.01	0.21	**G**
		1.0	0.07	-0.12	-0.08	0.06	0.05	-0.03	0.03	0.17	0.00	0.04	-0.03	**GG**
			1.0	-0.24	0.00	0.29	0.24	-0.14	0.92	0.04	0.34	0.00	0.30	**IE**
				1.00	0.02	-0.25	-0.07	-0.02	-0.18	0.00	-0.18	0.00	-0.17	**ED**
					1.00	-0.03	-0.01	0.03	0.01	-0.01	-0.05	0.07	-0.07	**IF**
						1.0	0.18	-0.04	0.10	0.27	0.33	-0.12	0.44	**E**
							1.0	0.01	0.11	0.00	0.03	-0.02	0.23	**R**
								1.00	-0.16	0.05	-0.13	0.85	-0.08	**C**
									1.00	-0.17	0.34	-0.02	0.23	**I**
										1.00	-0.24	0.06	-0.22	**N**
											1.00	-0.10	0.65	**PS**
												1.00	-0.14	**EX**
													1.00	**CP**

Source: Author's Compilation.

Note: F – FDIIF, G – GDP, GG – GDPGR, IE – IMPEXP, ED – EXTDBT, IF – INFLN, E – EPC, R – RESRV, C – COMPE, I – IMP, N – NRES, PS – POLSTB, EX – EXCHRT, CP – CORUPC.

Table 5.2 shows that there is very high correlation (0.80 and above) between FDI and GDP (0.95) and FDI and Reserves (0.92) whereas all remaining variables i.e. GDP growth rate, trade openness, external debt, inflation, electric power consumption, compensation of employees, import, natural resources, political stability, exchange rate and corruption control reflect very low correlation (0.30 and below) with FDI inflow.

5.2.3 Regression Analysis.

This sub section of the chapter determines the factors influencing FDI inflows to developing nations with the help of Regression Analysis. The determinants of FDI inflows are extracted with the help of Pooled OLS model, Fixed Effect model and Random Effect Model and their comparison as shown in tables stated below.

A) Pooled OLS Model:

Table 5.3 Pooled OLS Model showing Determinants of FDI Inflows to Developing Nations

Variables	Coef.	S. E.	t-r	p-v
Const	−4269.03	931.104	−4.585	0.0001***
GDP	2.27E-08	9.49E-10	23.91	0.0001***
GDPGR	168.799	50.8484	3.32	0.0009***
IMPEXP	226.616	44.5713	5.084	0.0001***
EXTDBT	10.1603	2.42918	4.183	0.0001***
INFLN	−7.88732	5.28468	−1.492	0.1359
EPC	1.05787	0.17147	6.169	0.0001***
RESRV	2.19E-09	2.43E-09	0.9022	0.3672
COMPE	7.95E-12	1.77E-11	0.4494	0.6533
IMP	−155.688	39.8804	−3.904	0.0001***
NRES	15.2626	27.8149	0.5487	0.5833
POLSTB	−254.700	338.259	−0.7530	0.4517
EXCHRT	−0.210899	0.22001	−0.9586	0.338
CORUPC	3316.01	476.65	6.957	0.0001***
R^2	0.935599			
Adj. R^2	0.934693			
ANOVA	F(13,924)= 1032.579, p-v = 0.000			

a. *Dependent variable: FDI Inflows.*

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 5.3 shows one of the Panel data regression models, i.e. Pooled OLS model. Pooled OLS Model reflects value of R^2 as 0.9355 which implies that 93.55 % of the total variation in FDI inflows to developing nations is due to market size (GDP), GDP growth, Trade openness, External debts, Inflation, Infrastructure Development (EPC), Labour cost, Reserves, Imports, Natural Resources, Political stability, Exchange rate and Corruption control whereas remaining 6.45 % is due to other factors. Adjusted R^2 0.9346 implies that independent variables in the model account for 93.46 % variance in the dependent variable, i.e. FDI inflows. The difference between R^2 and Adjusted R^2 is small (0.0009), it means that sample size (n = 92 nations, t = 20 years, No. of observations = 1840) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 1032.57 and significance or p-value 0.00 < 0.05 indicates that the model is fit. The null hypothesis, i.e. 'There is no significant relationship between FDI inflows of developing nations and its determinants' is rejected and therefore alternate hypothesis i.e. 'There is a significant relationship between FDI inflows of developing nations and its determinants' is accepted with respect to significant variables i.e. GDP, GDP growth, Trade openness, External debt, Infrastructure development, Imports and Control of corruption. Thus, it is concluded that at least one independent variable is a significant predictor of FDI inflows to developing nations.

Hence, Regression Model under Pooled OLS model is seen as:

FDI Inflows (Y) = -4269.03 +2.27e-08 GDP + 168.799 GDPGR+ 226.616 IMPEXP+ 10.160 EXTDBT − 7.887 INFLN + 1.0578 EPC + 2.19e-08 RESRV + 7.95e-12 COMPE − 55.688 IMP + 15.262 NRES − 254.70 POLSTB − 0.211 EXCHRT + 3316.01 CORUPC + ε_{it}

Beta values express that FDI inflows are positively and significantly related to independent variables viz. Market size (GDP), GDP growth, Trade openness, External debts, Infrastructure Development (EPC), Imports and Corruption control at 1 % level of significance since the p-value is less than 0.01. However, other variables like Inflation, Reserves, Labour cost, Natural resources, Political stability and Exchange rate are not statistically significant.

B) Fixed Effect Model:

Table 5.4 Fixed Effect Model showing Determinants of FDI Inflows to Developing Nations

Variables	Coef.	S. E.	t-r	p-v
Const	−4081.18	1635.48	−2.495	0.0128**
GDP	1.97E-08	1.05E-09	18.77	0.0001***
GDPGR	42.3749	43.4264	0.9758	0.3294
IMPEXP	−76.7432	64.9405	−1.182	0.2376
EXTDBT	−0.836184	2.57779	−0.3244	0.7457
INFLN	−0.351418	4.28461	−0.08202	0.9347
EPC	2.58419	0.55229	4.679	0.0001***
RESRV	−1.04336e-09	2.55E-09	−0.4094	0.6823
COMPE	6.49E-12	1.61E-11	0.4038	0.6864
IMP	102.71	52.653	1.951	0.0514*
NRES	148.616	56.3628	2.637	0.0085***
POLSTB	1359.49	493.147	2.757	0.006***
EXCHRT	−0.369081	0.49267	−0.7491	0.454
CORUPC	−71.5366	792.359	−0.09028	0.9281
R^2	0.857098			
Adj. R^2	0.8473			
ANOVA	$F(13, 874) = 403.237$, p-v = 0.000			

a. *Dependent variable: FDI Inflows.*

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 5.4 shows one of the Panel data regression models, i.e. Fixed Effect Model. Fixed Effect Model shows value of R^2 as 0.8570 which implies that 85.70 % of the total variation in FDI inflows of developing nations is due to market size (GDP), GDP growth, Trade openness, External debts, Inflation, Infrastructure Development (EPC), Labour cost, Reserves, Imports, Natural Resources, Political stability, Exchange rate and Corruption control whereas remaining 4.30 % is due to other factors. Adjusted R^2

0.8473 implies that independent variables in the model account for 84.73 % variance in the dependent variable, i.e. FDI inflows. The difference between R^2 and Adjusted R^2 is small (0.0097), it means that sample size (n = 92 nations, t = 20 years, No. of observations = 1840) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 403.237 and significance value 0.00 < 0.05 indicates that the model is fit. The null hypothesis, i.e. 'There is no significant relationship between FDI inflows of developing nations and its determinants' is rejected and therefore alternate hypothesis i.e. 'There is a significant relationship between FDI inflows of developing nations and its determinants' is accepted with respect to significant variables, i.e. GDP, Infrastructure development, Imports, Natural resources and Political stability. Thus, it is concluded that at least one independent variable is a significant predictor of FDI inflows to developing nations.

Hence, Regression Model under Fixed Effect Model is looked as:

FDI Inflows (Y) = - 4081.18 + 1.97e-08 GDP + 42.37 GDPGR − 76.74 IMPEXP − 0.836 EXTDBT − 0.351 INFLN + 2.584 EPC − 1.045e-09 RESRV + 6.49e-12 COMPE + 102.71 IMP + 148.616 NRES + 1359.49 POLSTB − 0.369 EXCHRT − 71.536 CORUPC + ε_{it}

Beta values express that FDI inflows are positively and significantly related to independent variables viz. Market size (GDP), Infrastructure Development (EPC), Natural Resources and Political stability at 1% level of significance since the p-value is less than 0.01 and Imports at 10 % level of significance since the p-value is less than 0.10. However, other variables like GDP growth, Trade openness, External debts, Inflation, Reserves, Labour cost, Exchange rate and Corruption control are not statistically significant.

C) Random Effect Model:

Table 5.5 Random Effect Model showing Determinants of FDI Inflows to Developing Nations

Variables	*Coef*	*S. E.*	*Z*	*p-v*
const	−3670.45	1130.29	−3.247	0.0012***
GDP	2.25E-08	1.01E-09	22.21	0.0001***
GDPGR	120.556	46.8478	2.573	0.0101**
IMPEXP	170.556	51.6711	3.301	0.0010***
EXTDBT	5.16603	2.52917	2.043	0.0411**
INFLN	−4.41573	4.7576	−0.9281	0.3533
EPC	1.45117	0.23566	6.158	0.0001***
RESRV	−2.28582e-09	2.52E-09	−0.9077	0.3640
COMPE	9.03E-12	1.65E-11	0.5476	0.5840
IMP	−104.746	45.1061	−2.322	0.0202**
NRES	42.492	35.0698	1.212	0.2256
POLSTB	−15.1368	396.987	−0.03813	0.9696
EXCHRT	−0.137577	0.26122	−0.5267	0.5984
CORUPC	3400.59	588.067	5.783	0.0001***
R^2	0.90395			
Adj. R^2	0.9026			
ANOVA	F(13,924)= 668.94, p-v = 0.000			

a. *Dependent variable: FDI Inflows.*

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 5.5 shows one of the Panel data regression models, i.e. Random Effect Model. Random Effect Model reflects value of R^2 as 0.9039 which implies that 90.39 % of the total variation in FDI inflows of developing nations is due to market size (GDP), GDP growth, Trade openness, External debts, Inflation, Infrastructure Development (EPC), Labour cost, Reserves, Imports, Natural Resources, Political stability,

Exchange rate and Corruption control whereas remaining 9.61 % is due to other factors. Adjusted R^2 0.9026 implies that independent variables in the model account for 90.26 % variance in the dependent variable, i.e. FDI inflows. The difference between R^2 and Adjusted R^2 is small (0.0001), it indicates that sample size (n = 92 nations, t = 20 years, No. of observations = 1840) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 668.94 and significance value 0.00 < 0.05 indicates that the model is fit. The null hypothesis 'There is no significant relationship between FDI inflows of developing nations and its determinants' is rejected and therefore alternate hypothesis 'There is a significant relationship between FDI inflows of developing nations and its determinants' is accepted with respect to significant variables, i.e. GDP, GDP growth, Trade openness, External debts, Infrastructure Development (EPC), Imports and Corruption control Thus, it is concluded that at least one independent variable is a significant predictor of FDI inflows of developing nations.

Hence, the Regression Model under the Random Effect Model is looked as:

FDI Inflows (Y) = - 3670.45 + 2.25 e-08 GDP+ 120.556 GDPGR + 170.556 IMPEXP + 5.166 EXTDBT − 4.415 INFLN + 1.451 EPC − 2.28e-09 RESRV + 9.03e-12 COMPE − 104.746 IMP + 42.49 NRES − 15.13 POLSTB − 0.137 EXCHRT + 3400.59 CORUPC + ε_{it}

Beta values express that FDI inflows are positively and significantly related to independent variables viz. Market size (GDP), Trade openness, Infrastructure Development (EPC) and Corruption control at 1 % level of significance since the p-value is less than 0.01 and GDP growth and External debts at 5% level of significance since the p-value is less than 0.05 but it is negatively related to imports at 5% level of significance. Other variables like Inflation, Reserves, Labour cost, Natural Resources, Political stability and Exchange rate are not statistically significant.

D) Model Comparison:

This sub section of the chapter compares three regression models, i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model as shown in Table 5.6.

Table 5.6 Comparison of Models showing Determinants of FDI Inflows to Developing Nations

Variables	Pooled OLS Model				Fixed Effect Model				Random Effect Model			
Variables	*Coef*	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*z*	*p-v*
const	−4269.03	931.104	−4.585	0.0001 ***	−4081.18	1635.48	−2.495	0.0128 **	−3670.45	1130.29	−3.247	0.0012 ***
GDP	2.27E-08	9.49E-10	23.91	0.0001 ***	1.97E-08	1.05E-09	18.77	0.0001 ***	2.25E-08	1.01E-09	22.21	0.0001 ***
GDPGR	168.799	50.8484	3.32	0.0009 ***	42.3749	43.4264	0.9758	0.3294	120.556	46.8478	2.573	0.0101 **
IMPEXP	226.616	44.5713	5.084	0.0001 ***	−76.7432	64.9405	−1.182	0.2376	170.556	51.6711	3.301	0.0010 ***
EXTDBT	10.1603	2.42918	4.183	0.0001 ***	−0.836184	2.57779	−0.3244	0.7457	5.16603	2.52917	2.043	0.0411 **
INFLN	−7.88732	5.28468	−1.492	0.1359	−0.351418	4.28461	−0.08202	0.9347	−4.41573	4.7576	−0.9281	0.3533
EPC	1.05787	0.17147	6.169	0.0001 ***	2.58419	0.55229	4.679	0.0001 ***	1.45117	0.23566	6.158	0.0001 ***
RESRV	2.19E-09	2.43E-09	0.9022	0.3672	−1.04336e-09	2.55E-09	−0.4094	0.6823	−2.28582e-09	2.52E-09	−0.9077	0.3640
COMPE	7.95E-12	1.77E-11	0.4494	0.6533	6.49E-12	1.61E-11	0.4038	0.6864	9.03E-12	1.65E-11	0.5476	0.5840
IMP	−155.688	39.8804	−3.904	0.0001 ***	102.71	52.653	1.951	0.0514 *	−104.746	45.1061	−2.322	0.0202 **
NRES	15.2626	27.8149	0.5487	0.5833	148.616	56.3628	2.637	0.0085 ***	42.492	35.0698	1.212	0.2256
POLSTB	−254.700	338.259	−0.7530	0.4517	1359.49	493.147	2.757	0.006 ***	−15.1368	396.987	−0.03813	0.9696
EXCHRT	−0.210899	0.22001	−0.9586	0.338	−0.369081	0.49267	−0.7491	0.454	−0.137577	0.26122	−0.5267	0.5984
CORUPC	3316.01	476.65	6.957	0.0001 ***	−71.5366	792.359	−0.09028	0.9281	3400.59	588.067	5.783	0.0001 ***

R^2	0.935599	**0.857098**	0.90395
Adj. R^2	0.934693	**0.8473**	0.9026
ANOVA	$F_{(13,924)}$= 1032.579, p-v = 0.000	**$F_{(13, 874)}$ = 403.237, p-v = 0.000**	$F_{(13,924)}$= 668.94, p-v = 0.000
		Model Comparison Test-	
Test			**Appropriate Model**
F Test	F(50, 874) = 13.715, p-v = 2.58723e-079 i.e.0.000		Fixed Effect Model
LM Test	Chi-square(1) = 503.458, p-v = 1.68131e-111 i.e. 0.00		Random Effect Model
Hausman Test	**Chi-square(13) = 288.3, p-v = 6.72183e-054 i.e. 0.00**		**Fixed Effect Model**

a. Dependent variable: FDI Inflows.   Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 5.6 shows the Panel data regression models viz. Pooled OLS model, Fixed Effect model and Random Effect Model and their comparison determine the statistically significant factors which influence the flow of FDI to Developing Nations.

Firstly, Pooled OLS Model is compared with Fixed Effect Model. The fixed effect is tested by the F Test. F Test compares the fixed effect model and OLS to see how much fixed effect model can improve the goodness of fit. Table 6.6 shows that F statistics value is 13.715 and significance or p-value is 2.58723e-079, i.e. 0.00 which is less than 0.05, this indicates that and null hypothesis "There is no significant fixed effect in the panel data" is rejected and alternate hypothesis, i.e. There is a significant fixed effect in the panel data" is accepted. Therefore it is concluded that the fixed effect model is better than the pooled OLS.

Secondly, Pooled OLS Model is compared with Random Effect Model. A random effect is tested by Breusch-Pagan's Lagrange Multiplier (LM) Test. The LM statistics follow the chi-squared distribution with one degree of freedom. LM test contrasts a random effect model with OLS to see whether random effect model can deal with heterogeneity better than pooled OLS. Table 6.6 shows that chi-square value is 503.458 and significance or p-value is 1.68131e-111, i.e. 0.00 which is less than 0.05, this indicates that null hypothesis "There is no significant random effect in the panel data" is rejected and alternate hypothesis, i.e. "There is a significant random effect in the panel data" is accepted. The random effect model can deal with heterogeneity better than pooled OLS. Therefore it is concluded that the random effect model is better than the pooled OLS model.

Thirdly, to know which effect (fixed effect or random effect) is more relevant and significant in the panel data, the Hausman specification test is applied which compares fixed and random effect models under the null hypothesis "Random Effect Model is appropriate".

Table 5.6 shows that under, chi-square value is 288.3 and significance or p-value is 6.72183e-054, i.e. 0.00 which is less than 0.05, this indicates that null hypothesis is rejected and alternate hypothesis is accepted, i.e. Random Effect Model is not

appropriate. Therefore it is concluded that the fixed effect model is more appropriate than the random effect model.

The individual effects under fixed effect model are shown in Table 5.7

Table 5.7: Individual Effects of Developing Nations on FDI Inflows (FE Model)

Nations	Estimate	Std. Error	t-value	P Value
Albania	-5818.554	1936.512	-3.0047	0.0027347 ***
Algeria	-6300.838	2027.879	-3.1071	0.0019503 ***
Armenia	-6151.712	2116.093	-2.9071	0.0037401 ***
Azerbaijan	-8794.231	2386.692	-3.6847	0.0002431 ***
Belarus	-10801.22	2910.178	-3.7115	0.0002190 ***
Bolivia	-2837.432	1689.155	-1.6798	0.0933548*
Brazil	2590.284	1950.271	1.3282	0.18447
Bulgaria	-10784.784	3088.299	-3.4921	0.0005032 ***
China	32446.003	4724.031	6.8683	1.233e-11 ***
Colombia	2342.751	1821.563	1.2861	0.198742
Congo	-5916.241	3761.598	-1.5728	0.116127
Costa Rica	-5811.95	1860.129	-3.1245	0.0018399 ***
Cote d'lvoire	-31.006	1883.103	-0.0165	0.986867
Dominican Republic	-3692.54	1760.862	-2.097	0.0362798 **
Egypt	-3882.411	1611.526	-2.4092	0.0161955 **
EI Salvodar	-3860.293	1710.906	-2.2563	0.0242991 **
Georgia	-4950.285	1984.97	-2.4939	0.0128192 **
Ghana	-3614.674	1800.451	-2.0076	0.0449880 **
Guatemala	-2033.641	1560.406	-1.3033	0.192823
Honduras	-3544.996	2191.997	-1.6172	0.106186
India	-4027.295	1625.649	-2.4773	0.0134245 **
Indonesia	994.212	4124.122	0.2411	0.809556
Jamaica	-6456.049	2069.496	-3.1196	0.0018702 ***
Jordan	-6171.324	2285.026	-2.7008	0.0070518 ***
Kazakhstan	-10289.326	3018.084	-3.4092	0.0006813 ***
Kenya	-1076.508	1656.703	-0.6498	0.515999
Kyrgyzstan	-6323.067	2442.15	-2.5891	0.0097816 ***
Macedonia	-11245.944	2847.613	-3.9493	8.471e-05 ***
Malaysia	-8838.003	3277.716	-2.6964	0.0071444 ***
Mauritius	-7546.707	2242.855	-3.3648	0.0007994 ***
Mexico	-1411.952	2518.891	-0.5605	0.575252
Moldova	-7783.278	2505.971	-3.1059	0.0019583 ***
Mongolia	-6862.953	2245.186	-3.0567	0.0023056 ***
Morocco	-2235.772	1573.271	-1.4211	0.155645
Nicaragua	-2952.393	2116.243	-1.3951	0.163337
Nigeria	-1158.17	1899.099	-0.6099	0.542118
Pakistan	-757.392	1799.633	-0.4209	0.673962

Panama	-5445.821	2891.688	-1.8833	0.0599960*
Paraguay	-2683.04	3227.814	-0.8312	0.406074
Peru	132.776	1558.606	0.0852	0.932131
Philippines	-2464.445	1828.008	-1.3482	0.177957
Romania	-6212.553	2065.431	-3.0079	0.0027062 ***
Russia	-10301.979	3507.854	-2.9368	0.0034029 ***
South Africa	-14146.009	2811.971	-5.0306	5.934e-07 ***
Sri Lanka	-1173.623	1666.045	-0.7044	0.481349
Tanzania	-461.157	2183.969	-0.2112	0.832815
Thailand	-4048.598	2302.374	-1.7584	0.0790218 *
Tunisia	-4547	1846.097	-2.463	0.0139685 **
Turkey	-6020.839	1895.076	-3.1771	0.0015398 ***
Ukraine	-7938.691	2763.86	-2.8723	0.0041733 **
Venezuela	-10090.596	2338.718	-4.3146	1.782e-05 ***

Source: Author's Compilation.

*** Significant at 1 % level,** Significant at 5 % level,*Significant at 10 % level.

Table 5.7 depicts that Individual effects under fixed effect model are significant at 1 % level in 22 developing nations such as Albania, Algeria, Armenia, Azerbaijan, Belarus, Bulgaria, China, Costa Rica, Jamaica, Jordan, Kazakhstan, Kyrgyzstan, Macedonia, Malaysia, Mauritius, Moldova, Mongolia, Romania, Russia, South Africa, Turkey and Venezuela. Individual effects are significant at 5 % level in 8 developing nations i.e. Dominican Republic, Egypt, El Salvador, Georgia, Ghana, India, Tunisia and Ukraine. Individual effects are significant at 10 % level in 3 developing nations viz. Bolivia, Panama and Thailand. Individual effects are not significant in the remaining developing nations.

Table 5.6 proved that the fixed effect model is the best regression model. The independent variables viz. Market size (GDP), Infrastructure Development (EPC), Imports, Natural Resources and Political stability are positively significant. However, other variables like GDP growth, Trade openness, External debts, Inflation, Reserves, Labour cost, Exchange rate and Corruption control are not statistically significant.

Further, the table 5.6 explains that other things remaining constant, increase in GDP by 1 $ estimates to increase FDI inflows by 0.01 $, increase in EPC by 1 Kwh per capita increases FDI by 2.58 Million $, increase in Imports by 1 % leads to rise in FDI by 102.71 Million $, increase in savings of Natural resources by 1 % increases FDI by

148.61 Million $ and increase in Political stability index by 1 unit estimates to increase FDI inflows of developing nations by 1,359.49 Million $.

Figure 5 A highlights that the Market size, Infrastructure development, Import of goods and services, Savings of natural resources and Political stability are the factors which determine the flow of FDI into developing nations.

Figure 5 A: Determinants of FDI Inflows to Developing Nations

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┌─────────────────────────────────────────────────────────────┐
│        Determinants of FDI Inflows to Developing Nations     │
└─────────────────────────────────────────────────────────────┘

┌──────────┐ ┌──────────────┐ ┌─────────┐ ┌──────────┐ ┌──────────┐
│Market Size│ │Infrastructure│ │         │ │ Natural  │ │Political │
│  (GDP)    │ │ Development   │ │ Imports │ │Resources │ │Stability │
│   (+)     │ │   (EPC)       │ │  (+)    │ │   (+)    │ │   (+)    │
│           │ │   (+)         │ │         │ │          │ │          │
└──────────┘ └──────────────┘ └─────────┘ └──────────┘ └──────────┘
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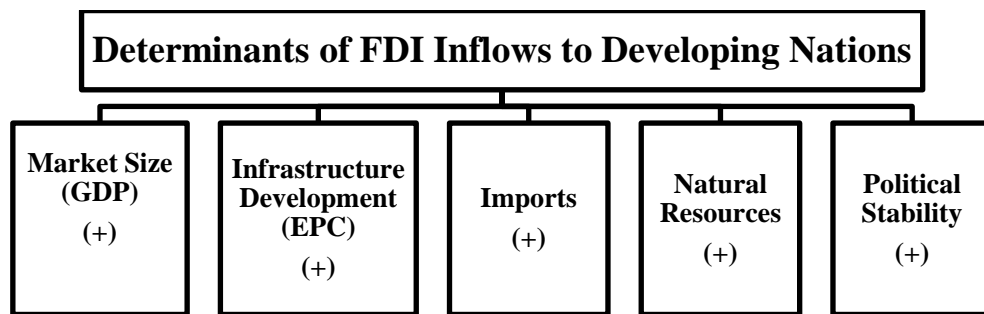
Source: Author's compilation from Table 5.6.

At the end of this chapter, the second objective of this study is fulfilled, i.e. to explore the factor determinants of FDI inflows to developing nations. The analysis proved that five out of thirteen factors are significant and they increase the flow of FDI to developing nations. These socio-economic and political factors are Market size measured by Gross Domestic Product, Infrastructure development measured by Electric Power Consumption, Imports of goods and services, Savings of Natural Resources and Political stability.

<div align="center">

Chapter VI

Determinants of FDI Inflows to Oil-exporting and Non-Oil-exporting Developing Nations

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The determinants of FDI Inflows to Oil-exporting and Non-oil-exporting Developing Nations are described in the following pages.

6.1 Determinants of FDI Inflows to Oil-exporting Developing Nations.

The first section of this chapter is based on the first part of the third objective, i.e. "To identify the factors that determine FDI inflows to Oil-exporting and Non-Oil-exporting Developing Nations". This section analyses and detects the determinants of FDI inflows to oil-exporting developing nations. There are thirteen independent variables or factors under the study, out of which some factors may have a significant impact on the flow of FDI in select oil-exporting developing nations. Significant variables express the extent to which factors have an impact on the flow of FDI in oil-exporting developing nations.

6.1.1 Research Methodology Applied:

To study the determinants of FDI inflows to oil-exporting developing nations, the period of the study is from 1996 to 2015, i.e. for a period of 20 years. The secondary data of all variables used in this chapter is annual data. The sample size is 44 developing nations (Refer Table 3.6) chosen based on the availability of data. The total numbers of observations are 880. The data used is a long panel type. The data is analysed using statistical techniques like Descriptive statistics which is applied to understand the Measures of Central Tendency, i.e. Mean, Minimum value, Maximum value and Measures of Dispersion, i.e. Standard Deviation (SD) and the coefficient of variation (CV). Correlation analysis is used to study the extent of the relationship between FDI inflows of oil-exporting developing nations and its independent variables. The study utilized Panel data modeling (Multiple regression analysis) explained in chapter III. Gretl software is used for analysis. The following research hypotheses are tested to prove whether the independent variables affect the flow of FDI in oil-exporting developing nations.

Research Hypotheses	Tools Used For Testing
H₂: There is no significant relationship between FDI inflows of Oil-exporting Developing Nations and its determinants.	Multiple regression analysis
H₂ₐ: There is no significant fixed effect in the panel data.	F Test
H₂ᵦ: There is no significant random effect in the panel data.	Lagrange Multiplier (LM) Test
H₂ᵪ: Random Effect Model is appropriate.	Hausman Specification Test

6.1.2 Empirical Analysis and Discussion:

Descriptive analysis, correlation analysis and panel data regression analysis are described in the following pages.

6.1.2.1 Descriptive Analysis

Table 6.1 Descriptive Statistics (44 Oil-exporting Developing Nations)

Variable	Mean	Minimum	Maximum	Std. Dev.	C.V.
FDIIF	7722.7	4	3.14E+05	24589	3.184
GDP	2.74E+11	6.41E+08	1.14E+13	8.82E+11	3.2206
GDPGR	4.4515	-14.814	34.5	4.3712	0.98198
IMPEXP	42.278	7.8178	118.82	20.052	0.47428
EXTDBT	139	6.9735	485.64	91.17	0.65592
INFLN	7.5223	-8.5252	154.76	12.163	1.617
EPC	3435.1	69.592	21911	4465.3	1.2999
RESRV	7.73E+10	4.04E+06	4.25E+12	3.59E+11	4.6447
COMPE	9.09E+12	4.98E+07	6.04E+14	4.84E+13	5.3212
IMP	40.028	8.9054	100.6	18.507	0.46234
NRES	11.935	1.57E-05	83.015	12.687	1.0629
POLSTB	-0.29247	-2.8447	1.2779	0.85482	2.9228
EXCHRT	1001.8	0.26883	29011	3383.8	3.3778
CORUPC	-0.28555	-1.5434	2.0091	0.72858	2.5515

Source: Author's Compilation.

Table 6.1 presents the descriptive statistics of all variables for the data of 44 developing nations used in this chapter. The table shows that FDI inflow of developing nations on an average is 7,722.7 million dollars. The minimum FDI inflow is 4 million dollars and the maximum is 3,14,000 million dollars. The standard deviation is 24,589 million dollars and the coefficient of variation is 3.184 million dollars. For twenty years, the mean of GDP is 2,74, 000 million dollars, GDP growth rate 4.45 %, imports and exports 42.28 % of GDP, external debt 139 % of exports, inflation rate 7.52 %, electric power consumption 3435.1 kwh per capita, reserve fund 77300 million dollars, compensation of employees 9,090 billion LCU, imports 40.03 % of GDP, natural resources 11.93 % of GNI, political stability index − 0.29, exchange rate 1001.8 LCU per $ and corruption control index is − 0.28.

6.1.2.2 Correlation Analysis

Table 6.2: Correlation Matrix (44 Oil-exporting Developing Nations)

F	G	GG	IE	ED	IF	EP	R	C	I	N	PS	EX	CP	
1.00	0.96	0.05	0.33	-0.16	-0.06	0.15	0.92	-0.01	0.23	-0.12	0.10	-0.03	0.38	F
	1.00	0.01	0.26	-0.15	-0.03	0.14	0.96	0.04	0.17	-0.13	0.06	-0.01	0.32	G
		1.00	0.16	-0.21	-0.14	0.09	0.05	-0.05	0.14	0.18	0.04	0.03	-0.01	GG
			1.00	-0.38	-0.21	0.34	0.36	-0.18	0.92	0.20	0.33	0.04	0.43	IE
				1.00	0.09	-0.22	-0.17	0.01	-0.32	-0.16	-0.03	-0.07	-0.10	ED
					1.00	-0.10	-0.05	0.11	-0.18	-0.05	-0.11	0.07	-0.19	IF
						1.00	0.16	-0.08	0.17	0.23	0.40	-0.16	0.55	E
							1.00	0.00	0.26	-0.07	0.08	-0.04	0.33	R
								1.00	-0.20	-0.01	-0.15	0.89	-0.09	C
									1.00	-0.02	0.32	0.07	0.36	I
										1.00	-0.17	-0.03	-0.22	N
											1.00	-0.07	0.60	PS
												1.00	-0.13	EX
													1.00	CP

Source: Author's Compilation.

Note: F – FDIIF, G – GDP, GG – GDPGR, IE – IMPEXP, ED – EXTDBT, IF – INFLN, E – EPC, R – RESRV, C – COMPE, I – IMP, N – NRES, PS – POLSTB, EX – EXCHRT, CP – CORUPC.

Table 6.2 shows that there is very high correlation (0.80 and above) between FDI and GDP (0.96), FDI and Reserves (0.92) whereas all remaining variables i.e. GDP growth rate, trade openness, external debt, inflation, electric power consumption, compensation of employees, import, natural resources, political stability, exchange

rate and corruption control reflect very low correlation (0.40 and below) with FDI inflow.

6.1.2.3 Regression Analysis

This sub section of the chapter determines the factors influencing FDI inflows to oil-exporting developing nations with the help of Regression Analysis. The determinants of FDI inflows are extracted with the help of Pooled OLS model, Fixed Effect model and Random Effect Model and their comparison, as shown in tables stated below.

A) Pooled OLS Model:

Table 6.3: Pooled OLS Model showing Determinants of FDI Inflows to Oil-exporting Developing Nations

Variables	Coef.	S. E.	t-r	p-v
Const	108.547	1840.92	0.05896	0.9530
GDP	2.24947e-08	1.37240e-09	16.39	0.0001***
GDPGR	227.667	83.0848	2.740	0.0064***
IMPEXP	96.3058	77.5121	1.242	0.2147
EXTDBT	6.09770	4.98603	1.223	0.2220
INFLN	−19.1236	27.4416	−0.6969	0.4862
EPC	1.88790	0.292023	6.465	0.0001***
RESRV	−9.20183e-010	3.35687e-09	−0.2741	0.7841
COMPE	1.46223e-011	2.42190e-011	0.6038	0.5463
IMP	−102.386	74.3618	−1.377	0.1692
NRES	77.6625	42.6070	1.823	0.0690*
POLSTB	−873.400	565.205	−1.545	0.1230
EXCHRT	−0.449959	0.325128	−1.384	0.1671
CORUPC	8076.28	935.339	8.635	0.0001***
R^2	0.949669			
Adj. R^2	0.948237			
ANOVA	$F_{(13,457)}$= 663.2993, p-v = 6.2e-287 i.e. 0.000			

a. Dependent variable: FDI Inflows.

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level

Table T – 6.3 shows one of the panel data regression models, i.e. Pooled OLS model. Pooled OLS Model reflects value of R^2 as 0.9496 which implies that 94.96 % of the total variation in FDI inflows of oil-exporting developing nations is due to market size (GDP), GDP growth, Trade openness, External debts, Inflation, Infrastructure Development (EPC), Labour cost, Reserves, Imports, Natural Resources, Political stability, Exchange rate and Corruption control whereas remaining 5.04 % is due to other factors. Adjusted R^2 0.9482 implies that independent variables in the model account for 94.82 % variance in the dependent variable, i.e. FDI inflows. The difference between R^2 and Adjusted R^2 is small (0.0014), it means that sample size (n = 44 nations, t = 20 years, No. of observations = 880) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 663.29 and significance or p-value 6.2e-287 i.e. 0.00 < 0.05 indicates that the model is fit. The null hypothesis 'There is no significant relationship between FDI inflows of oil-exporting developing nations and its determinants' is rejected and therefore alternate hypothesis 'There is a significant relationship between FDI inflows of oil-exporting developing nations and its determinants' is accepted with respect to significant variables, i.e. GDP, GDP growth, Infrastructure Development (EPC), natural resources and Corruption control. Thus, it is concluded that at least one independent variable is a significant predictor of FDI inflows of oil-exporting developing nations.

Hence, the Regression Model under the Pooled OLS Model is reflected as:

FDI Inflows (Y) = 108.547 +2.24 e-08 GDP + 227.667 GDPGR + 96.31 IMPEXP + 6.097 EXTDBT − 19.123 INFLN + 1.887 EPC − 9.20e-10 RESRV + 1.46 e-11 COMPE − 102.386 IMP + 77.66 NRES − 873.4 POLSTB − 0.449 EXCHRT + 8076.28 CORUPC + ε_{it}

Beta values express that FDI inflows are positively and significantly related to independent variables viz. market size (GDP), economic growth (GDPGR) Infrastructure Development (EPC) and Corruption control at 1 % level of significance since the p-value is less than 0.01 and natural resources at 10 % level of significance since the p-value is less than 0.10. However, other variables like Trade openness, External debts, Inflation, Reserves, Labour cost, Imports, Political stability and Exchange rate are not statistically significant.

B) Fixed Effect Model:

Table 6.4: Fixed Effect Model showing Determinants of FDI Inflows to Oil-exporting Developing Nations

Variables	*Coef.*	*S. E.*	*t-r*	*p-v*
Const	−4979.12	2963.06	−1.680	0.0936*
GDP	1.98197e-08	1.54146e-09	12.86	0.0001***
GDPGR	54.4189	77.6816	0.7005	0.4840
IMPEXP	−64.4909	115.590	−0.5579	0.5772
EXTDBT	−2.65921	5.29671	−0.5020	0.6159
INFLN	−20.7438	26.8218	−0.7734	0.4397
EPC	3.66582	0.936698	3.914	0.0001***
RESRV	−2.51975e-09	3.74045e-09	−0.6736	0.5009
COMPE	−1.54636e-012	2.27802e-011	−0.06788	0.9459
IMP	116.929	96.0404	1.218	0.2241
NRES	112.962	86.4006	1.307	0.1918
POLSTB	2048.54	889.975	2.302	0.0218**
EXCHRT	−0.349573	0.681587	−0.5129	0.6083
CORUPC	−1272.88	1318.68	−0.9653	0.3350
R^2	0.868483			
Adj. R^2	0.85724			
ANOVA	F(13, 433) = 219.95, p-v = 2.21692e-181 i.e. 0.000			

a.   *Dependent variable: FDI Inflows*

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 6.4 shows one of the Panel data regression models, i.e. Fixed Effect Model. Fixed Effect Model shows value of R^2 as 0.8684 which implies that 86.84 % of the total variation in FDI inflows of oil-exporting developing nations is due to market size (GDP), GDP growth, Trade openness, External debts, Inflation, Infrastructure Development (EPC), Labour cost, Reserves, Imports, Natural Resources, Political stability, Exchange rate and Corruption control whereas remaining 13.16 % is due to other factors. Adjusted R^2 0.8572 implies that independent variables in the model account for 85.72 % variance in the dependent variable i.e. FDI inflows. The

difference between R^2 and Adjusted R^2 is small (0.011), it means that sample size (n = 44 nations, t = 20 years, No. of observations = 880) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 219.95 and significance or p-value 2.21692e-181 i.e. 0.00 < 0.05 indicates that the model is fit. The null hypothesis 'There is no significant relationship between FDI inflows of oil-exporting developing nations and its determinants' is rejected and alternate hypothesis 'There is a significant relationship between FDI inflows of oil-exporting developing nations and its determinants' is accepted with respect to significant variables, i.e. GDP, Infrastructure Development (EPC) and Political stability. Thus, it is concluded that at least one independent variable is a significant predictor of FDI inflows of oil-exporting developing nations.

Hence, the Regression Model under the Fixed Effect Model is reflected as:

FDI Inflows (Y) = - 4979.12 + 1.98 e-08 GDP+ 54.418 GDPGR – 64.49 IMPEXP – 2.659 EXTDBT – 20.743 INFLN + 3.665 EPC – 2.519 e-09 RESRV – 1.546 e-12 COMPE + 116.929 IMP + 112.962 NRES + 2048.54 POLSTB – 0.349 EXCHRT – 1272.88 CORUPC + ε_{it}

Beta values express that FDI inflows are positively and significantly related to independent variables viz. Market size (GDP), Infrastructure Development (EPC) at 1% level of significance since the p-value is less than 0.01 and Political stability at 5% level of significance since the p-value is less than 0.05. However, other variables like GDP growth, Trade openness, External debts, Inflation, Reserves, Labour cost, Imports, Natural Resources, Exchange rate and Corruption control are not statistically significant.

C) Random Effect Model:

Table 6.5: Random Effect Model showing Determinants of FDI Inflows to Oil-exporting Developing Nations

Variables	*Coef*	*S. E.*	*Z*	*p-v*
Const	−491.927	1905.67	−0.2581	0.7963
GDP	2.26089e-08	1.40601e-09	16.08	0.0001***
GDPGR	204.017	82.2858	2.479	0.0132**
IMPEXP	107.358	81.3724	1.319	0.1871
EXTDBT	5.79968	5.04689	1.149	0.2505
INFLN	−17.9131	27.5599	−0.6500	0.5157
EPC	2.00989	0.316358	6.353	0.0001***
RESRV	−2.18287e-09	3.43044e-09	−0.6363	0.5246
COMPE	1.56076e-011	2.38796e-011	0.6536	0.5134
IMP	−100.773	77.4695	−1.301	0.1933
NRES	67.1165	45.2148	1.484	0.1377
POLSTB	−823.058	598.819	−1.374	0.1693
EXCHRT	−0.429483	0.338984	−1.267	0.2052
CORUPC	7635.06	974.368	7.836	0.0001***
R^2	0.94465			
Adj. R^2	0.94308			
ANOVA	F(13,457)= 600.012, p-v = 2.22e-16 i.e. 0.000			

a. *Dependent variable: FDI Inflows.*

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 6.5 shows one of the Panel data regression models, i.e. Random Effect Model. Random Effect Model shows value of R^2 as 0.9446 which implies that 94.46 % of the total variation in FDI inflows of developing nations is due to market size (GDP), GDP growth, Trade openness, External debts, Inflation, Infrastructure Development (EPC), Labour cost, Reserves, Imports, Natural Resources, Political stability, Exchange rate and Corruption control whereas remaining 5.54 % is due to other factors. Adjusted R^2 0.9430 implies that independent variables in the model account for 94.30 % variance

in the dependent variable, i.e. FDI inflows. The difference between R^2 and Adjusted R^2 is small (0.0016), which means sample size (n = 44 nations, t = 20 years, No. of observations = 880) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 600.01 and significance value 2.22e-16 i.e. $0.00 < 0.05$ indicates that the model is fit. The null hypothesis 'There is no significant relationship between FDI inflows of oil-exporting developing nations and its determinants' is rejected and alternate hypothesis 'There is a significant relationship between FDI inflows of oil-exporting developing nations and its determinants' is accepted with respect to significant variables, i.e. GDP, GDP growth, Infrastructure Development (EPC) and Corruption control. Thus, it is concluded that at least one independent variable is a significant predictor of FDI inflows of oil-exporting developing nations.

Hence, the Regression Model under the Random Effect Model is reflected as:

FDI Inflows (Y) = - 491.927 + 2.26e-08 GDP + 204.017 GDPGR + 107.358 IMPEXP + 5.799 EXTDBT − 17.913 INFLN + 2.009 EPC − 2.182 e-09 RESRV + 1.560e-11 COMPE − 100.773 IMP + 67.116 NRES − 823.058 POLSTB − 0.429 EXCHRT + 7635.06 CORUPC + ε_{it}

Beta values express that FDI inflows are positively and significantly related to independent variables viz. Market size (GDP), Infrastructure Development (EPC) and Corruption control at 1 % level of significance since the p-value is less than 0.01 and Economic growth (GDPGR) at 5% level of significance since the p-value is less than 0.05. However, other variables like Trade openness, External debts, Inflation, Reserves, Labour cost, Imports, natural resources, Political stability and Exchange rate are not statistically significant.

D) Model Comparison:

This sub section of the chapter compares three regression models, i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model as shown in Table 6.6.

Table 6.6: Comparison of Regression Models showing Determinants of FDI Inflows to Oil-exporting Developing Nations

Variables	Pooled OLS Model				Fixed Effect Model				Random Effect Model			
	Coef	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*Z*	*p-v*
const	108.547	1840.92	0.05896	0.9530	−4979.12	2963.06	−1.680	0.0936*	−491.927	1905.67	−0.2581	0.7963
GDP	2.249e-08	1.37240e-09	16.39	0.0001***	1.98197e-08	1.54146e-09	12.86	0.0001***	2.26089e-08	1.406e-09	16.08	0.0001***
GDPGR	227.667	83.0848	2.740	0.0064***	54.4189	77.6816	0.7005	0.4840	204.017	82.2858	2.479	0.0132**
IMPEXP	96.3058	77.5121	1.242	0.2147	−64.49	115.590	−0.5579	0.5772	107.358	81.3724	1.319	0.1871
EXTDBT	6.09770	4.98603	1.223	0.2220	−2.659	5.29671	−0.5020	0.6159	5.79968	5.04689	1.149	0.2505
INFLN	−19.1236	27.4416	−0.6969	0.4862	−20.74	26.8218	−0.7734	0.4397	−17.9131	27.5599	−0.6500	0.5157
EPC	1.88790	0.292023	6.465	0.0001***	3.665	0.936698	3.914	0.0001***	2.00989	0.316358	6.353	0.0001***
RESRV	−9.201e-10	3.356e-09	−0.2741	0.7841	−2.519e-09	3.740e-09	−0.6736	0.5009	−2.182e-09	3.430e-09	−0.6363	0.5246
COMPE	1.462e-011	2.421e-11	0.6038	0.5463	−1.546e-12	2.278e-011	−0.06788	0.9459	1.560e-011	2.387e-11	0.6536	0.5134
IMP	−102.386	74.3618	−1.377	0.1692	116.929	96.0404	1.218	0.2241	−100.773	77.4695	−1.301	0.1933
NRES	77.6625	42.6070	1.823	0.0690*	112.962	86.4006	1.307	0.1918	67.1165	45.2148	1.484	0.1377
POLSTB	−873.400	565.205	−1.545	0.1230	2048.54	889.975	2.302	0.0218**	−823.058	598.819	−1.374	0.1693
EXCHRT	−0.449959	0.325128	−1.384	0.1671	−0.349573	0.681587	−0.5129	0.6083	−0.429483	0.338984	−1.267	0.2052
CORUPC	8076.28	935.339	8.635	0.0001***	−1272.88	1318.68	−0.9653	0.3350	7635.06	974.368	7.836	0.0001***

R^2	0.949669	**0.868483**	0.94465
Adj R^2	0.948237	**0.85724**	0.94308
ANOVA	F(13,457)= 663.2993, p-v = 6.2e-287 i.e. 0.000	**F(13, 433) = 219.95, p-v = 2.21692e-181 i.e. 0.000**	F(13,457)= 600.012, p-v = 2.22e-16 i.e. 0.000
		Model Comparison Test	
Test			**Appropriate Model**
F Test	F(24, 433) = 8.90391, p-v = 1.81475e-025 i.e.0.00		Fixed Effect Model
LM Test	Chi-square(1) = 68.6847, p-v = 1.15533e-016 i.e. 0.00		Random Effect Model
Hausman Test	**Chi-square(14) = 183.694, p-v = 2.98852e-032 i.e. 0.00**		**Fixed Effect Model**

a. *Dependent variable: FDI Inflows.*

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level

Table 6.6 shows the Panel data regression models, viz. Pooled OLS model, Fixed Effect model and Random Effect Model and their comparison determine the statistically significant factors which influence the flow of FDI in oil-exporting developing nations.

Firstly, Pooled OLS Model is compared with Fixed Effect Model. The fixed effect is tested by the F Test. F Test compares the fixed effect model and OLS to see how much fixed effect model can improve the goodness of fit. Table 6.6 shows that F statistics value is 8.90 and significance or p-value is 1.81475e-025 i.e.0.00 which is less than 0.05, this indicates that null hypothesis "There is no significant fixed effect in the panel data" is rejected and alternate hypothesis is accepted i.e. "There is a significant fixed effect in the panel data." Therefore it is concluded that the fixed effect model is better than the pooled OLS model.

Secondly, Pooled OLS Model is compared with Random Effect Model. A random effect is tested by Breusch-Pagan's Lagrange Multiplier (LM) Test. The LM statistics follow the chi-squared distribution with one degree of freedom. LM test contrasts a random effect model with OLS to see whether random effect model can deal with heterogeneity better than pooled OLS. A table 6.6 shows that chi-square value is 68.6847 and significance or p-value is 1.15533e-016, i.e. 0.00 which is less than 0.05, this indicates that and null hypothesis "There is no significant random effect in the panel data" is rejected and alternate hypothesis is accepted i.e. "There is significant random effect in the panel data." Therefore it is concluded that the random effect model is better than the pooled OLS model.

Thirdly, to know which model is more relevant, the Hausman specification test (Hausman Test) is used which compares the fixed effect and random effect models under the null hypothesis "Random Effect Model is appropriate".

Table 6.6 shows that under Hausman Test, chi-square value is 183.694 and significance or p-value is 2.98852e-032, i.e. 0.00 which is less than 0.05, this indicates that null hypothesis "Random Effect Model is appropriate" is rejected and alternate hypothesis is accepted, i.e. Random Effect Model is not appropriate. Therefore it is concluded that the fixed effect model is more appropriate than the

random effect model. The individual or country effects under fixed effect model are shown in Table 6.7

Table 6.7: Individual Effects of Oil-exporting Developing Nations on FDI Inflows (FE Model)

Country	Estimate	Std. Error	t-value	P value
Albania	-9007.96	3244.28	-2.7766	0.005732 ***
Algeria	-7027.46	3016.05	-2.33	0.020264 **
Azerbaijan	-11853.74	3792.06	-3.1259	0.001892 ***
Bolivia	-3860.98	2776.11	-1.3908	0.165005
Brazil	922.61	3164.63	0.2915	0.770781
China	26088.35	7949.51	3.2818	0.001115 ***
Colombia	2384.55	2890.99	0.8248	0.409926
Congo	-4789.67	5938.44	-0.8066	0.420367
Cote d'lvoire	-685.90	3187.54	-0.2152	0.829726
Egypt	-5484.41	2581.85	-2.1242	0.034218 **
Georgia	-7394.87	3359.99	-2.2009	0.028273 **
Guatemala	-3257.48	2537.19	-1.2839	0.199866
Indonesia	1416.48	5826.73	0.2431	0.808043
Kazakhstan	-15852.57	5039.99	-3.1454	0.001773 ***
Malaysia	-14062.65	5701.82	-2.4663	0.014036 **
Mexico	-3196.52	3800.3	-0.8411	0.400744
Mongolia	-9900.76	3806.54	-2.601	0.009614 ***
Nigeria	-1172.94	3026.41	-0.3876	0.698526
Peru	-628.67	2549.34	-0.2466	0.805333
Philippines	-3722.61	3092.44	-1.2038	0.229334
Romania	-9459.58	3538.88	-2.673	0.007801 ***
Russia	-16374.84	5908.51	-2.7714	0.005822 ***
Thailand	-7305.1	3960.3	-1.8446	0.065781 *
Tunisia	-6788.36	3098.52	-2.1908	0.028996 **
Venezuela	-13000.47	3974.33	-3.2711	0.001157 ***

Source: Author's Compilation.

*** Significant at 1 % level ** Significant at 5 % level *Significant at 10 % level

Table 6.7 depicts that Individual effects under fixed effect model are significant at 1% level in 8 oil-exporting developing nations viz. Albania, Azerbaijan, China,

Kazakhstan, Mongolia, Romania, Russia and Venezuela. Individual effects are significant at 5 % level in 05 oil-exporting developing nations, i.e. Algeria, Egypt, Georgia, Malaysia and Tunisia. Individual effects are significant at 10 % level in only one oil-exporting developing nation, i.e. Thailand. Individual effects are not significant in remaining oil-exporting developing nations.

Table 6.6 proved that the fixed effect model is the best regression model. The independent variables viz. Market size (GDP), Infrastructure Development (EPC) and Political stability are positively significant. However, other variables like GDP growth, Trade openness, External debts, Inflation, Reserves, Labour cost, Imports, Natural Resources, Exchange rate and Corruption control are not statistically significant.

Further, the table 6.6 explains that other things remaining constant, increase in GDP by 1 $ leads to marginal increase in FDI inflows by 0.01 $, increase in EPC by 1 Kwh per capita increases FDI by 3.67 Million $ and increase in Political stability index by one unit leads to increase in FDI inflows of oil-exporting developing nations by 2,048.54 Million $.

Figure 6 A highlights that the Market size, Infrastructure development, Political stability are the factors which determine the flow of FDI to oil-exporting developing nations.

Figure 6 A: Determinants of FDI Inflows to Oil-exporting Developing Nations
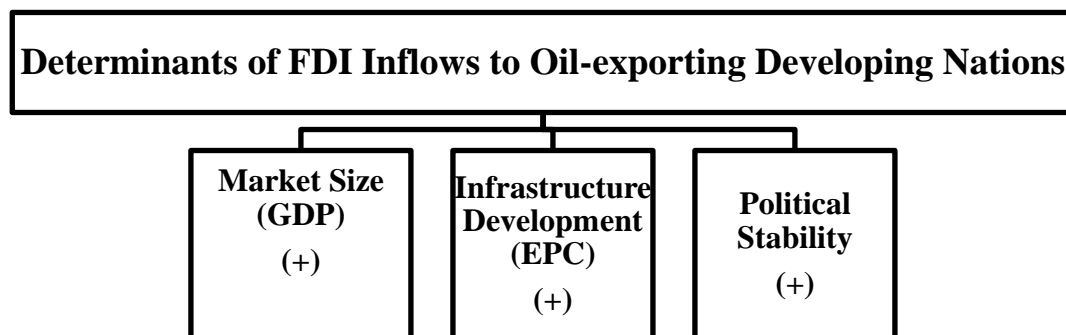
Source: Author's compilation from Table 6.6

6.2 Determinants of FDI Inflows to Non-oil-exporting Developing Nations

The second section of this chapter is based on the second part of the third objective i.e. "To identify the factors that determine FDI inflows to Oil-exporting and Non-Oil exporting Developing Nations". This section analyses and detects the factors determining FDI inflows to Non-Oil exporting Developing Nations. There are fourteen independent variables or factors under the study, out of which some factors may have a significant impact on the flow of FDI in select Non-Oil exporting Developing Nations. Significant variables express the extent to which factors have an impact on the flow of FDI to Non-Oil-exporting Developing Nations.

6.2.1 Research Methodology Applied:

To study the factors determining FDI inflows to Non-Oil exporting Developing Nations, the period of the study is from 1996 to 2015, i.e. for a period of 20 years. The secondary data of all variables used in this chapter is annual data. The sample size is 48 developing nations (Refer Table 3.7) chosen based on the availability of data. The total numbers of observations are 960. The data used is a long panel type. The data is analysed using statistical techniques like Descriptive statistics which is applied to understand the Measures of Central Tendency, i.e. Mean, Minimum value, Maximum value and Measures of Dispersion, i.e. Standard Deviation (SD) and the coefficient of variation (CV). Correlation analysis is used to study the extent of the relationship between FDI inflows of Non-Oil exporting Developing Nations and its independent variables. The study utilized Panel data modeling (Multiple regression analysis) explained in chapter III. Gretl software is used for analysis. The following research hypotheses are tested to prove whether the independent variables affect the flow of FDI to Non-Oil exporting Developing Nations.

Research Hypotheses	Tools Used For Testing
H_3: There is no significant relationship between FDI inflows of Non-Oil-exporting Developing Nations and its determinants.	ANOVA
H_{3a}: There is no significant fixed effect in the panel data.	F Test
H_{3b}: There is no significant random effect in the panel data.	Lagrange Multiplier (LM) Test
H_{3c}: Random Effect Model is appropriate.	Hausman Specification Test

6.2.2 Empirical Analysis and Discussion:

Descriptive analysis, correlation analysis and panel data regression analysis are described in the following pages.

6.2.2.1 Descriptive Analysis.

Table 6.8: Descriptive Statistics (48 Non-Oil-exporting Developing Nations)

Variable	Mean	Minimum	Maximum	Std. Dev.	C.V.
FDIIF	1688.7	1	47139	4333.9	2.5664
GDP	6.16E+10	1.81E+08	2.10E+12	1.94E+11	3.1418
GDPGR	3.658	-28.1	26.269	4.1996	1.148
IMPEXP	44.498	10.776	112.51	17.558	0.39459
EXTDBT	200.78	11.67	3789.1	308.99	1.539
INFLN	72.483	-35.837	24411	1090.9	15.051
EPC	1860.9	55.211	5061.2	1310.9	0.70445
RESRV	9.93E+09	1.15E+07	3.53E+11	3.29E+10	3.3121
COMPE	6.11E+11	2.06E+07	3.11E+13	2.31E+12	3.7749
IMP	50.394	11.345	119.21	19.343	0.38383
NRES	2.9841	5.85E-05	64.742	5.9569	1.9962
POLSTB	-0.10143	-2.81	1.3643	0.78781	7.7668
EXCHRT	291.71	0.001323	9686.8	888.65	3.0464
CORUPC	-0.22583	-1.5385	1.5923	0.68201	3.02

Source: Author's Compilation.

Table 6.8 presents the descriptive statistics of all variables for the data of 48 non-oil-exporting developing nations used in this chapter. The table shows that FDI inflow of non-oil-exporting developing nations on an average is 1,688.7 million dollars. The minimum FDI inflow is 1 million dollars and the maximum is 47,139 million dollars. The standard deviation is 4,333.9 million dollars and the coefficient of variation is 2.5664 million dollars. For twenty years, the mean of GDP is 61,600 million dollars, GDP growth rate 3.65 %, imports and exports 44.49 % of GDP, external debt 200 % of exports, inflation rate 72.48 %, electric power consumption 1860.9 kwh per capita, reserve fund 9,93, 000 million dollars, compensation of employees 611 billion LCU, imports 50.39 % of GDP, natural resources 2.98 % of GNI, political stability index − 0.10, exchange rate 291.71 LCU per $ and corruption control index is − 0.22.

6.2.2.2 Correlation Analysis.

Table 6.9: Correlation Matrix (48 Non-Oil-exporting Developing Nations)

F	G	GG	IE	ED	IF	EP	R	C	I	N	PS	EX	CP	
1.00	0.83	0.10	-0.16	-0.08	-0.02	0.14	0.85	0.13	-0.21	0.13	-0.14	-0.04	0.13	**F**
	1.00	0.11	-0.26	-0.07	0.00	-0.01	0.97	0.05	-0.31	0.04	-0.26	-0.06	0.01	**G**
		1.00	-0.02	-0.11	-0.04	-0.20	0.10	-0.01	-0.01	0.06	-0.04	0.03	-0.05	**GG**
			1.00	-0.29	-0.01	0.28	-0.19	0.06	0.96	-0.22	0.37	-0.12	0.19	**IE**
				1.00	0.02	-0.28	-0.07	-0.05	-0.25	0.36	-0.29	0.13	-0.25	**ED**
					1.00	0.09	-0.01	0.00	-0.04	0.00	-0.07	-0.02	-0.08	**IF**
						1.00	0.01	0.16	0.20	-0.14	0.30	-0.10	0.34	**E**
							1.00	0.06	-0.23	0.04	-0.24	-0.04	0.00	**R**
								1.00	-0.01	0.11	-0.03	0.39	-0.03	**C**
									1.00	-0.21	0.35	-0.15	0.14	**I**
										1.00	-0.34	0.37	-0.28	**N**
											1.00	-0.21	0.67	**PS**
												1.00	-0.28	**EX**
													1.00	**CP**

Source: Author's Compilation.

Note: F – FDIIF, G – GDP, GG – GDPGR, IE – IMPEXP, ED – EXTDBT, IF – INFLN, E – EPC, R – RESRV, C – COMPE, I – IMP, N – NRES, PS – POLSTB, EX – EXCHRT, CP – CORUPC.

Table 6.9 shows that there is very high correlation (0.80 and above) between FDI and GDP (0.83) and FDI and Reserves (0.85) whereas all remaining variables, i.e. GDP growth rate, trade openness, external debt, inflation, electric power consumption, reserves, compensation of employees, import, natural resources, political stability, exchange rate and corruption control reflect very low correlation (0.30 and below) with FDI inflow.

6.2.2.3 Regression Analysis

This sub section of the chapter determines the factors influencing FDI inflows to non-oil-exporting developing nations with the help of Regression Analysis. The determinants of FDI inflows are extracted with the help of Pooled OLS model, Fixed Effect model and Random Effect Model and their comparison, as shown in tables stated below.

A) Pooled OLS Model:

Table 6.10: Pooled OLS Model showing Determinants of FDI Inflows to Non-Oil-exporting Developing Nations

Variables	*Coef*	*S. E.*	*t-r*	*p-v*
Const	196.432	500.163	0.3927	0.6947
GDP	5.39053e-010	1.90045e-09	0.2836	0.7768
GDPGR	6.64739	28.1334	0.2363	0.8133
IMPEXP	−42.0177	30.3560	−1.384	0.1670
EXTDBT	−0.605977	1.14641	−0.5286	0.5974
INFLN	−1.16360	1.91975	−0.6061	0.5447
EPC	0.383672	0.0939537	4.084	0.0001***
RESRV	1.05418e-07	1.07303e-08	9.824	0.0001***
COMPE	8.90487e-012	4.06276e-011	0.2192	0.8266
IMP	30.4638	24.3743	1.250	0.2120
NRES	110.788	38.5205	2.876	0.0042***
POLSTB	218.356	196.435	1.112	0.2669
EXCHRT	−0.0932740	0.153585	−0.6073	0.5439
CORUPC	50.0216	247.327	0.2022	0.8398
R^2	0.848542			
Adj. R^2	0.844196			
ANOVA	F(13,453)= 195.2255, p-v = 3.0e-176 i.e. 0.00			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 6.10 shows one of the panel data regression models, i.e. Pooled OLS model. Pooled OLS Model reflects value of R^2 as 0.8485 which implies that 84.85 % of the total variation in FDI inflows of non-oil exporting developing nations is due to market size (GDP), GDP growth, Trade openness, External debts, Inflation, Infrastructure Development (EPC), Labour cost, Reserves, Imports, Natural Resources, Political stability, Exchange rate and Corruption control whereas remaining 15.15 % is due to other factors. Adjusted R^2 0.8441 implies that independent variables in the model account for 84.41 % variance in the dependent variable, i.e. FDI inflows. The difference between R^2 and Adjusted R^2 is small (0.0044), it means that sample size (n = 48 nations, t = 20 years, No. of observations = 960) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F

statistics 195.225 and significance or p-value 3.0e-176, i.e. 0.00 less than 0.05 indicates that the model is fit and the null hypothesis 'There is no significant relationship between FDI inflows of non-oil-exporting developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI inflows of non-oil-exporting developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI inflows of non-oil-exporting developing nations.

Hence, the Regression Model under the Pooled OLS Model is observed as:

FDI Inflows (Y) = -196.432 + 5.390 e-010 GDP+ 6.647 GDPGR– 42.017 IMPEXP- 0.605 EXTDBT– 0.163 INFLN + 0.383 EPC – 1.05e-07 RESRV – 8.904 e-012 COMPE + 30.463 IMP + 110.78 NRES + 218.356 POLSTB – 0.093 EXCHRT + 50.021 CORUPC + ε_{it}

Beta values express that FDI inflows are positively and significantly related to independent variables viz. Infrastructure Development (EPC), Reserves and Natural resources at 1 % level of significance since the p-value is less than 0.01. However, other variables like Market size (GDP), GDP growth, Trade openness, External debts, Inflation, Labour cost, Imports, Political stability, Exchange rate and Corruption control are not statistically significant.

B) Fixed Effect Model:

Table 6.11: Fixed Effect Model showing Determinants of FDI Inflows to Non-Oil-exporting Developing Nations

Variables	Coef	S. E.	t-r	p-v
const	−661.337	1068.90	−0.6187	0.5364
GDP	4.00919e-010	2.28758e-09	0.1753	0.8610
GDPGR	9.18925	28.7403	0.3197	0.7493
IMPEXP	−116.037	43.0696	−2.694	0.0073***
EXTDBT	0.0808854	1.49713	0.05403	0.9569
INFLN	−0.270544	1.88687	−0.1434	0.8861
EPC	0.785502	0.394895	1.989	0.0473**
RESRV	1.13180e-07	1.19021e-08	9.509	0.0001***
COMPE	2.00060e-011	4.73227e-011	0.4228	0.6727
IMP	105.496	34.9381	3.020	0.0027***
NRES	255.834	84.9346	3.012	0.0027***
POLSTB	788.884	326.781	2.414	0.0162**
EXCHRT	1.19379	0.965022	1.237	0.2167
CORUPC	2234.59	637.916	3.503	0.0005***
R^2	0.740623			
Adj. R^2	0.71759			
ANOVA	F(13, 428) = 94.0082, p-v = 1.82849e-116 i.e. 0.00			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 6.11 shows one of the panel data regression models, i.e. Fixed Effect Model. Fixed Effect Model shows value of R^2 as 0.7406 which implies that 74.06 % of the total variation in FDI inflows of non-oil exporting developing nations is due to market size (GDP), GDP growth, Trade openness, External debts, Inflation, Infrastructure Development (EPC), Labour cost, Reserves, Imports, Natural Resources, Political stability, Exchange rate and Corruption control whereas remaining 25.94 % is due to other factors. Adjusted R^2 0.7175 implies that independent variables in the model

account for 71.75 % variance in the dependent variable, i.e. FDI inflows. The difference between R^2 and Adjusted R^2 is small (0.023) indicates that sample size (n = 48 nations, t = 20 years, No. of observations = 960) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 94.008 and significance or p-value 1.82849e-16 i.e. 0.00 < 0.05 indicates that the model is fit and null hypothesis 'There is no significant relationship between FDI inflows of non-oil-exporting developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI inflows of non-oil-exporting developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI inflows to non-oil exporting developing nations.

Hence, the Regression Model under the Fixed Effect Model is observed as:

FDI Inflows (Y) = -661.337 + 4.009e-10 GDP + 9.189 GDPGR − 116.037 IMPEXP − + 0.080 EXTDBT − 0.270 INFLN + 0.785 EPC + 1.131e-07 RESRV + 2.00e-11 COMPE + 105.496 IMP + 255.834 NRES + 788.884 POLSTB + 1.193 EXCHRT + 2234.59 CORUPC + ε_{it}

Beta values express that FDI inflows are positively and significantly related to independent variables viz. Trade openness, Reserves, Imports, Natural Resources and Corruption control at 1% level of significance since the p-value is less than 0.01, Infrastructure Development (EPC) and Political stability at 5% level of significance since the p-value is less than 0.05. However, other variables like Market size (GDP), GDP growth, External debts, Inflation, Labour cost, and Exchange rate are not statistically significant.

C) Random Effect Model:

Table 6.12: Random Effect Model showing Determinants of FDI Inflows to Non-Oil-exporting Developing Nations

Variables	Coefficient	Std. Error	z	p-value
Const	141.412	553.787	0.2554	0.7984
GDP	4.35630e-010	1.97223e-09	0.2209	0.8252
GDPGR	7.77407	28.2498	0.2752	0.7832
IMPEXP	−60.9355	32.3045	−1.886	0.0593*
EXTDBT	−0.717457	1.21502	−0.5905	0.5549
INFLN	−1.18099	1.90391	−0.6203	0.5351
EPC	0.396268	0.109478	3.620	0.0003***
RESRV	1.07661e-07	1.10179e-08	9.771	0.0001***
COMPE	1.70715e-011	4.18749e-011	0.4077	0.6835
IMP	47.7365	26.0774	1.831	0.0672*
NRES	130.187	44.5084	2.925	0.0034***
POLSTB	267.530	214.547	1.247	0.2124
EXCHRT	−0.0635216	0.170180	−0.3733	0.7090
CORUPC	159.741	285.355	0.5598	0.5756
R^2	0.82775			
Adj. R^2	0.8228			
ANOVA	F(13,453)= 167.45, p-v = 2.22e-16 i.e. 0.00			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 6.12 shows one of the panel data regression models, i.e. Random Effect Model. This model shows value of R^2 as 0.8277 which implies that 82.77 % of the total variation in FDI inflows of non-oil exporting developing nations is due to market size (GDP), GDP growth, Trade openness, External debts, Inflation, Infrastructure Development (EPC), Labour cost, Reserves, Imports, Natural Resources, Political stability, Exchange rate and Corruption control whereas remaining 17.23 % is due to other factors. Adjusted R^2 0.8228 implies that independent variables in the model

account for 82.28 % variance in the dependent variable, i.e. FDI inflows. The difference between R^2 and Adjusted R^2 is small (0.0049), it means that sample size (n = 48 nations, t = 20 years, No. of observations = 960) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 167.45 and significance value 2.22e-16 i.e. 0.00 < 0.05 indicates that the model is fit and null hypothesis 'There is no significant relationship between FDI inflows of non-oil exporting developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI inflows of non-oil-exporting developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI inflows to non-oil exporting developing nations.

Hence, the Regression Model under the Random Effect Model is observed as:

FDI Inflows (Y) = 141.412 + 4.351e-010 GDP + 7.774 GDPGR − 60.935 IMPEXP − 0.717 EXTDBT − 1.180 INFLN + 0.396 EPC + 1.076e-07 RESRV + 1.707e-011 COMPE + 47.736 IMP + 130.187 NRES + 267.53 POLSTB − 0.063 EXCHRT − +159.741 CORUPC + ε_{it}

Beta values express that FDI inflows are positively and significantly related to independent variables viz. Infrastructure Development (EPC), Reserves and Natural Resources at 1 % level of significance since the p-value is less than 0.01, Imports at 10% level of significance since the p-value is less than 0.1, whereas Trade openness is negatively significant at 10% level of significance. However, other variables like Market size (GDP), GDP growth, External debts, Inflation, Labour cost, Political stability, Exchange rate and Corruption control are not statistically significant.

D) Model Comparison:

This sub section of the chapter compares three regression models, i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model as shown in Table 6.13.

Table 6.13: Comparison of Regression Models showing Determinants of FDI Inflows to Non-Oil-exporting Developing Nations

Variables	Pooled OLS Model				Fixed Effect Model				Random Effect Model			
	Coef	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*Z*	*p-v*
const	196.432	500.163	0.3927	0.6947	−661.337	1068.90	−0.6187	0.5364	141.412	553.787	0.2554	0.7984
GDP	5.39053e-010	1.90045e-09	0.2836	0.7768	4.00919e-010	2.28758e-09	0.1753	0.8610	4.35630e-010	1.97223e-09	0.2209	0.8252
GDPGR	6.64739	28.1334	0.2363	0.8133	9.18925	28.7403	0.3197	0.7493	7.77407	28.2498	0.2752	0.7832
IMPEXP	−42.0177	30.3560	−1.384	0.1670	−116.037	43.0696	−2.694	0.0073 ***	−60.9355	32.3045	−1.886	0.0593 *
EXTDBT	−0.605977	1.14641	−0.5286	0.5974	0.0808854	1.49713	0.05403	0.9569	−0.717457	1.21502	−0.5905	0.5549
INFLN	−1.16360	1.91975	−0.6061	0.5447	−0.270544	1.88687	−0.1434	0.8861	−1.18099	1.90391	−0.6203	0.5351
EPC	0.383672	0.0939537	4.084	0.0001 ***	0.785502	0.394895	1.989	0.0473 **	0.396268	0.109478	3.620	0.0003 ***
RESRV	1.05418e-07	1.07303e-08	9.824	0.0001 ***	1.13180e-07	1.19021e-08	9.509	0.0001 ***	1.07661e-07	1.10179e-08	9.771	0.0001 ***
COMPE	8.90487e-012	4.06276e-011	0.2192	0.8266	2.00060e-011	4.73227e-011	0.4228	0.6727	1.70715e-011	4.18749e-011	0.4077	0.6835
IMP	30.4638	24.3743	1.250	0.2120	105.496	34.9381	3.020	0.0027 ***	47.7365	26.0774	1.831	0.0672 *
NRES	110.788	38.5205	2.876	0.0042 ***	255.834	84.9346	3.012	0.0027 ***	130.187	44.5084	2.925	0.0034 ***
POLSTB	218.356	196.435	1.112	0.2669	788.884	326.781	2.414	0.0162 **	267.530	214.547	1.247	0.2124
EXCHRT	−0.0932740	0.153585	−0.6073	0.5439	1.19379	0.965022	1.237	0.2167	−0.0635216	0.170180	−0.3733	0.7090
CORUPC	50.0216	247.327	0.2022	0.8398	2234.59	637.916	3.503	0.0005 ***	159.741	285.355	0.5598	0.5756

R^2	0.848542	**0.740623**	0.82775
Adj. R^2	0.844196	**0.71759**	0.8228
ANOVA	F(13,453)= 195.2255, p-v = 3.0e-176 i.e. 0.00	**F(13, 428) = 94.0082, p-v = 1.82849e-116 i.e. 0.00**	F(13,453)= 167.45, p-v = 2.22e-16 i.e. 0.00

Model Comparison Test		
Test		**Appropriate Model**
F Test	F(25, 428) = 3.43046, p-v = 1.0517e-007 i.e.0.00	Fixed Effect Model
LM Test	Chi-square(1) = 10.6699, p-v = 0.00108892 i.e. 0.00	Random Effect Model
Hausman Test	**Chi-square(14) = 56.4034, p-v = 2.28814e-007 i.e. 0.00**	**Fixed Effect Model**

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 6.13 shows the Panel data regression models viz. Pooled OLS model, Fixed Effect model and Random Effect Model and their comparison determine the statistically significant factors which influence the flow of FDI to non-oil-exporting developing nations.

First, Pooled OLS Model is compared with Fixed Effect Model. The fixed effect is tested by the F Test. F Test compares the fixed effect model and OLS to see how much fixed effect model can improve the goodness of fit. Table 6.13 shows that F statistics value is 2.85 and significance or p-value is 8.91211e-006, i.e.0.00 which is less than 0.05, this indicates that null hypothesis "There is no significant fixed effect in the panel data" is rejected and alternate hypothesis is accepted, i.e. There is a significant fixed effect in the panel data. Therefore it is concluded that the fixed effect model is better than the pooled OLS.

Then, Pooled OLS Model is compared with Random Effect Model. A random effect is tested by Breusch-Pagan's Lagrange Multiplier (LM) Test. The LM statistics follow the chi-squared distribution with one degree of freedom. LM test contrasts a random effect model with OLS to see whether random effect model can deal with heterogeneity better than pooled OLS. Table 6.13 shows that chi-square value is 2.06821 and significance or p-value is 0.15 which is more than 0.05, this indicates that null hypothesis "There is no significant random effect in the panel data" is accepted. It means there is no significant random effect in the panel data. Therefore it is concluded that the pooled OLS model is better than the random effect model.

Further, to know which model is more appropriate, the Hausman specification test (Hausman Test) is used which compares the fixed effect and random effect models under the null hypothesis "Random Effect Model is appropriate".

Table 6.13 shows that under Hausman Test, chi-square value is 45.22 and significance or p-value is 3.75692e-005, i.e. 0.00 which is less than 0.05, this indicates that null hypothesis "Random Effect Model is appropriate" is rejected and alternate hypothesis is accepted, i.e. Random Effect Model is not appropriate. Therefore it is concluded that fixed effect model is more appropriate than the random effect model.

The individual effects under fixed effect model are shown in Table 6.14

Table 6.14: Individual Effects of Non-Oil-exporting Developing Nations on FDI Inflows (FE Model)

Nations	Estimate	Std. Error	t-value	P Value
Armenia	-1181.716	1260.353	-0.9376	0.34898
Belarus	-915.03	1844.415	-0.4961	0.62007
Bulgaria	-1445.326	2038.396	-0.7091	0.47868
Costa Rica	-3006.024	1301.838	-2.3091	0.02142 **
Dominican Republic	1618.155	1023.095	1.5816	0.11447
EI Salvodar	-308.06	965.667	-0.319	0.74987
Ghana	-2225.945	1276.038	-1.7444	0.08180 *
Honduras	1185.153	1287.1	0.9208	0.35768
India	-1821.61	1065.147	-1.7102	0.08795 *
Jamaica	-1471.662	1263.692	-1.1646	0.24484
Jordan	-1912.845	1426.315	-1.3411	0.1806
Kenya	1595.336	990.48	1.6107	0.10799
Kyrgyzstan	167.858	1498.01	0.1121	0.91083
Macedonia	-3150.679	1789.022	-1.7611	0.07893 *
Mauritius	-2520.366	1449.133	-1.7392	0.0271 **
Moldova	-940.192	1547.182	-0.6077	0.54372
Morocco	67.145	862.55	0.0778	0.93799
Nicaragua	101.778	1234.544	0.0824	0.93433
Pakistan	2692.933	1146.643	2.3485	0.01930 **
Panama	119.929	1642.382	0.073	0.94182
Paraguay	-5179.178	4830.655	-1.0721	0.28426
South Africa	-4002.183	1906.132	-2.0996	0.03635 *
Sri Lanka	696.329	925.725	0.7522	0.45235
Tanzania	-429.68	1802.413	-0.2384	0.81169
Turkey	881.995	1185.021	0.7443	0.45711
Ukraine	1525.33	1793.515	0.8505	0.39554

Source: Author's Compilation.

*** Significant at 1 % level,** Significant at 5 % level,*Significant at 10 % level.

Table 6.14 depicts that Individual effects under fixed effect model are significant at 5 % level in 03 non-oil-exporting developing nations, i.e. Costa Rica, Mauritius and Pakistan. Individual effects are significant at 10 % level in 04 non-oil-exporting

developing nations, i.e. Ghana, India, Macedonia and South Africa. Individual effects are not significant in remaining non-oil-exporting developing nations.

Table 6.14 proved that the fixed effect model is the best regression model. The independent variables viz. Infrastructure Development (EPC), Reserves, Imports, Natural Resources, Political stability and Corruption control are positively significant whereas Trade openness is negatively significant. However, other variables like Market size (GDP), GDP growth, External debts, Inflation, Labour cost and Exchange rate are not statistically significant.

Further, the Table 6.14 explains that other things remaining constant, increase in EPC by 1 Kwh per capita increases FDI by 0.78 Million $, increase in Reserves by 1 $ leads to marginal increase in FDI inflows by 0.11 $, increase in Imports of goods by 1 % increases FDI by 105.49 Million $, increase in savings of Natural Resources by 1 % leads to increase in FDI by 255.83 Million $, increase in Political stability index by 1 unit, increases FDI by 788.88 Million $ and increase in control of Corruption by 1 unit increases FDI by 2234.59 Million $ whereas increase in Trade openness (Imports and Exports) by 1 % negatively affects FDI inflows of non-oil exporting developing nations by 116 Million $.

Figure 6 B highlights that Infrastructure Development, Reserves, Imports, Natural Resources, Political stability, Corruption control and Trade openness are the factors which determine the flow of FDI to non-oil-exporting developing nations.

Figure 6 B: Determinants of FDI Inflows to Non-Oil-exporting Developing Nations
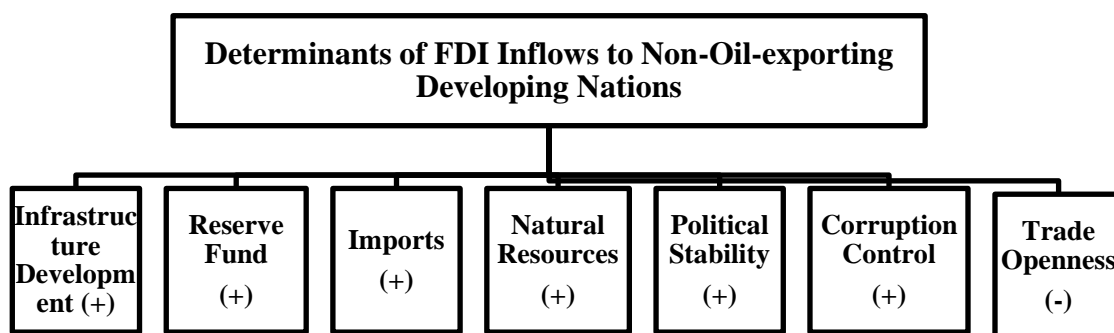
Source: Author's compilation from Table 6.13

At the end of this chapter, the third objective of the study is fulfilled, i.e. to identify the factors that determine FDI inflows to Oil-exporting and Non-Oil exporting Developing Nations. The analysis proved that only three out of thirteen factors are significant and they pull the flow of FDI to oil-exporting developing nations. These socio-economic and political factors are Market size measured by Gross Domestic Product, Infrastructure development measured by Electric Power Consumption and Political stability. Whereas six determinants of non-oil exporting developing nations supporting FDI inflows are confirmed as Infrastructure development measured by Electric Power Consumption, Reserves, Imports of goods and services, Savings of Natural resources, Political stability and Corruption control and only Trade openness expresses inverse relation.

Chapter VII

Determinants of FDI Outflows from Developing Nations

This chapter is based on the fourth objective, i.e. "To explore the factors influencing FDI outflows from developing nations". It analyses and notes the factors determining FDI outflows from developing nations. There are thirteen independent variables or factors under the study, out of which some factors may have a significant impact on the outflow of FDI from developing nations. Significant variables express the extent to which factors have an impact on the outflow of FDI from developing nations.

7.1 Research Methodology Applied:

The determinants of FDI outflows from developing nations are studied using the period from 1996 to 2015, i.e. 20 years. The secondary data of all variables used in this chapter is annual data. The sample size is 56 developing nations (Refer Table 3.8) chosen based on the availability of data. The total numbers of observations are 1120. The data used is a long panel type. The data is analysed using statistical techniques like Descriptive statistics which is applied to understand the Measures of Central Tendency, i.e. Mean, Minimum value, Maximum value and Measures of Dispersion, i.e. Standard Deviation (SD) and the coefficient of variation (CV). Correlation analysis is used to study the extent of the relationship between FDI outflows and its independent variables. The study utilized Panel data modeling (Multiple regression analysis) as explained in chapter III. Gretl software is used for analysis. The following research hypotheses are tested to prove whether the independent variables affect the flow of FDI from developing nations.

Research Hypotheses	Tools Used For Testing
H4: *There is no significant relationship between FDI outflows from Developing Nations and its determinants.*	ANOVA
H4a: *There is no significant fixed effect in the panel data.*	F Test
H4b: *There is no significant random effect in the panel data.*	Lagrange Multiplier (LM) Test
H4c: *Random Effect Model is appropriate.*	Hausman Specification Test

7.2 Empirical Analysis and Discussion:

Descriptive analysis, correlation analysis and panel data regression analysis are described in the following pages.

7.2.1 Descriptive Analysis

Table 7.1: Descriptive Statistics (56 Developing Nations)

Variable	Mean	Minimum	Maximum	Std. Dev.	C.V.
FDIOF	3618.2	0.68450	3.6481e+005	17427.	4.8166
GDP	2.5475e+011	5.0307e+008	1.1363e+013	7.9972e+011	3.1393
GDPGR	3.8628	-17.669	33.736	4.0297	1.0432
IMPEXP	42.782	7.8178	118.82	20.436	0.47767
INFLN	64.590	-4.8633	24411.	1007.6	15.600
EPC	3104.9	74.131	21911.	4065.0	1.3092
COMPE	7.0990e+012	3.3890e+007	6.0425e+014	4.2067e+013	5.9257
IMP	43.028	8.9054	117.03	20.540	0.47737
NRES	5.9934	1.5693e-005	37.801	7.6311	1.2733
POLSTB	-0.23594	-2.8100	1.2821	0.81842	3.4688
EXCHRT	548.03	0.010014	29011.	2129.0	3.8849
CORUPC	-0.17323	-1.4312	2.0091	0.70443	4.0664
EXP	43.254	6.7302	144.34	22.828	0.52777
LENDIR	18.170	2.9025	578.96	31.119	1.7126

Source: Author's Compilation.

Table 7.1 presents the descriptive statistics of all variables for the data of 56 developing nations used in this chapter. The table shows that FDI outflow of developing nations on an average is 3,618.2 million dollars. The minimum FDI inflow is 0.68 million dollars and the maximum is 3,64,810 million dollars. The standard deviation is 17,427 million dollars and the coefficient of variation is 4.81 million dollars. For twenty years, the mean of GDP is 254.75 trillion dollars, GDP growth rate 3.86 %, imports and exports 42.78 % of GDP, inflation rate 64.59 %, electric power consumption 3104.9 kwh per capita, compensation of employees 7,099 trillion LCU, imports 43.02 % of GDP, natural resources 5.99 % of GNI, political stability index – 0.23, exchange rate 548.03 LCU per $, corruption control index is – 0.17, Export 43.25 % of GDP and lending interest rate 18.17%.

7.2.2 Correlation Analysis.

Table 7.2: Correlation Matrix (56 Developing Nations)

F	G	GG	IE	IF	EP	C	I	N	PS	EX	CP	E	L	
1.0	0.84	0.10	0.28	-0.03	0.16	-0.02	0.16	0.00	0.05	-0.03	0.27	0.31	-0.09	**F**
	1.0	0.06	0.18	-0.03	0.14	0.04	0.06	-0.02	0.00	0.01	0.25	0.23	-0.04	**G**
		1.00	0.06	-0.09	0.10	-0.03	0.02	0.13	0.00	-0.03	0.08	0.05	-0.17	**GG**
			1.0	-0.05	0.35	-0.16	0.94	-0.06	0.47	-0.16	0.44	0.88	-0.24	**IE**
				1.00	-0.06	0.01	-0.05	-0.04	-0.04	0.00	-0.08	-0.05	0.54	**IF**
					1.00	-0.06	0.16	0.52	0.35	-0.11	0.46	0.45	-0.16	**EP**
						1.00	-0.18	0.14	-0.16	0.87	-0.11	-0.11	-0.03	**C**
							1.00	-0.28	0.44	-0.18	0.36	0.73	-0.24	**I**
								1.00	-0.10	0.10	-0.14	0.14	-0.07	**N**
									1.00	-0.24	0.66	0.39	-0.07	**PS**
										1.00	-0.15	-0.10	0.01	**EX**
											1.00	0.43	-0.22	**CP**
												1.00	-0.24	**E**
													1.00	**L**

Source: Author's Compilation.

Note: F – FDIOF, G – GDP, GG – GDPGR, IE – IMPEXP, IF – INFLN, EP – EPC, C – COMPE, I – IMP, N – NRES, PS – POLSTB, EX – EXCHRT, CP – CORUPC, E – EXP, L – LENDIR.

Table 7.2 shows that there is very high correlation (0.70 and above) between FDI and GDP (0.84) whereas all remaining variables i.e. GDP growth rate, trade openness, inflation, electric power consumption, compensation of employees, import, natural resources, political stability, exchange rate, corruption control, exports and lending interest rate reflect very low correlation (0.35 and below) with FDI outflow.

7.2.3 Regression Analysis.

This sub section of the chapter determines the factors influencing FDI outflows from developing nations with the help of Regression Analysis. The determinants of FDI outflows are extracted with the help of Pooled OLS model, Fixed Effect model and Random Effect Model and their comparison, as shown in tables stated below.

A) Pooled OLS Model:

Table 7.3: Pooled OLS Model showing Determinants of FDI Outflows from Developing Nations

Variables	Coef	S. E.	t-r	p-v
Const	−4560.32	1597.76	−2.854	0.0044***
GDP	1.72630e-08	5.20120e-010	33.19	0.0001***
GDPGR	149.674	106.778	1.402	0.1614
IMPEXP	373.909	124.140	3.012	0.0027***
INFLN	12.9174	12.1400	1.064	0.2877
EPC	−0.128706	0.169501	−0.7593	0.4479
COMPE	−7.39427e-012	1.82392e-011	−0.4054	0.6853
IMP	−227.709	105.796	−2.152	0.0317**
NRES	−26.6236	109.505	−0.2431	0.8080
POLSTB	−1120.39	799.518	−1.401	0.1616
EXCHRT	−0.242373	0.354485	−0.6837	0.4944
CORUPC	1133.55	951.178	1.192	0.2338
EXP	−31.8038	40.5933	−0.7835	0.4336
LENDIR	−49.3966	30.2024	−1.636	0.1024
R^2	0.742407			
Adj. R^2	0.737623			
ANOVA	F(13, 700) = 155.1893, p-v = 4.7e-196 i.e.0.00			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 7.3 shows one of the panel data regression models, i.e. Pooled OLS model. OLS Model reflects value of R^2 as 0.7424 which implies that 74.24 % of the total variation in FDI outflows of developing nations is due to Market size (GDP), GDP

growth, Trade openness, Inflation, Infrastructure Development (EPC), Labour cost, Imports, Natural Resources, Political stability, Exchange rate, Corruption control, Exports and Lending interest rate whereas remaining 25.76 % is due to other factors. Adjusted R^2 0.7376 implies that independent variables in the model account for 73.76 % variance in the dependent variable i.e. FDI outflows. The difference between R^2 and Adjusted R^2 is small (0.0048), it means that sample size (n = 56 nations, t = 20 years, No. of observations = 1120) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 155.189 and significance or p-value 4.7e-196, i.e. 0.00 < 0.05 indicates that the model is fit and the null hypothesis 'There is no significant relationship between FDI outflows from developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI outflows from developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI outflows from developing nations.

Hence, the Regression Model under the Pooled OLS Model is seen as:

FDI Outflows (Y) = - 4560.32 + 1.726e-08 GDP + 149.674 GDPGR + 373.909 IMPEXP + 12.917 INFLN - 0.128 EPC − 7.394e-12 COMPE − 227.709 IMP − 26.623 NRES − 1120.39 POLSTB − 0.2423 EXCHRT + 1133.55 CORUPC − 31.803 EXP − 49.396 LENDIR + ε_{it}

Beta values express that FDI outflows are positively and significantly related to independent variables viz. GDP and Trade openness at 1 % level of significance since the p-value is less than 0.01 but negatively and significantly related to Imports at 5% level of significance since the p-value is less than 0.05. However, other variables like GDP growth, Inflation, Infrastructure Development (EPC), Labour cost, Natural resources, Political stability, Exchange rate, Corruption control, Export and Lending interest rate are not statistically significant.

B) Fixed Effect Model:

Table 7.4: Fixed Effect Model showing Determinants of FDI Outflows from Developing Nations

Variables	*Coef*	*S. E.*	*t-r*	*p-v*
Const	−10007.5	3937.79	−2.541	0.0113**
GDP	1.52039e-08	7.50588e-010	20.26	0.0001***
GDPGR	93.3823	113.319	0.8241	0.4102
IMPEXP	1333.84	401.730	3.320	0.0009 ***
INFLN	−3.48794	12.3716	−0.2819	0.7781
EPC	2.27444	0.920676	2.470	0.0137**
COMPE	−2.02578e-011	2.62616e-011	−0.7714	0.4408
IMP	−667.302	238.127	−2.802	0.0052***
NRES	111.061	180.648	0.6148	0.5389
POLSTB	−89.0115	1258.42	−0.07073	0.9436
EXCHRT	0.165313	0.604881	0.2733	0.7847
CORUPC	−744.209	2477.08	−0.3004	0.7639
EXP	−621.862	196.469	−3.165	0.0016 ***
LENDIR	17.1620	33.5750	0.5112	0.6094
R^2	0.501516			
Adj. R^2	0.46146			
ANOVA	F(13, 660) = 51.078, p-v = 9.99497e-091 i.e.0.00			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 7.4 displays one of the panel data regression models, i.e. Fixed Effect Model. Fixed Effect Model reflects value of R^2 as 0.5015 which implies that 50.15 % of the total variation in FDI outflows of developing nations is due to Economy size (GDP), GDP growth, Trade openness, Inflation, Infrastructure Development (EPC), Labour cost, Imports, Natural Resources, Political stability, Exchange rate and Corruption control whereas remaining 49.85 % is due to other factors. Adjusted R^2 0.4614 implies that independent variables in the model account for 46.14 % variance in the dependent variable, i.e. FDI outflows. The difference between R^2 and Adjusted R^2 is small (0.0401), it means that sample size (n = 56 nations, t = 20 years, No. of

observations = 1120) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 155.189 and significance or p-value 4.7e-196, i.e. 0.00 < 0.05 indicates that the model is fit and the null hypothesis 'There is no significant relationship between FDI outflows from developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI outflows from developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI outflows from developing nations.

Hence, the Regression Model under the Fixed Effect Model is seen as:

FDI Outflows (Y) = - 10007.5 + 1.520e-08 GDP + 93.38 GDPGR+ 1333.84 IMPEXP - 3.487 INFLN + 2.27 EPC − 2.025e-11 COMPE − 667.302 IMP + 111.061 NRES − 89.011 POLSTB + 0.165 EXCHRT − 744.209 CORUPC − 621.862 EXP + 17.162 LENDIR + ε_{it}

Beta values express that FDI outflows are positively and significantly related to independent variables viz. Market size (GDP) and Trade openness at 1 % level of significance since the p-value is less than 0.01 and Infrastructure Development (EPC) at 5% level of significance since the p-value is less than 0.05, whereas FDI outflows are negatively and significantly related to Imports and Exports at 1 % level of significance. However, other variables like GDP growth, Inflation, Labour cost, Natural resources, Political stability, Exchange rate, Corruption control and Lending interest rate are not statistically significant.

C) Random Effect Model:

Table 7.5: Random Effect Model showing Determinants of FDI Outflows from Developing Nations

Variables	Coefficient	Std. Error	z	p-value
Const	−4973.61	1788.59	−2.781	0.0054***
GDP	1.69396e-08	5.49390e-010	30.83	0.0001***
GDPGR	156.710	107.531	1.457	0.1450
IMPEXP	367.750	134.686	2.730	0.0063***
INFLN	7.44929	12.1419	0.6135	0.5395
EPC	−0.104526	0.198852	−0.5256	0.5991
COMPE	−8.71140e-012	1.96383e-011	−0.4436	0.6573
IMP	−220.632	115.940	−1.903	0.0570*
NRES	−24.3450	121.260	−0.2008	0.8409
POLSTB	−1063.18	880.116	−1.208	0.2270
EXCHRT	−0.174708	0.394182	−0.4432	0.6576
CORUPC	1191.78	1097.13	1.086	0.2774
EXP	−30.4237	42.9789	−0.7079	0.4790
LENDIR	−29.8978	31.0415	−0.9632	0.3355
R^2	0.68772			
Adj. R^2	0.68191			
ANOVA	F(13, 699) = 118.415, p-v = 2.22e-16 i.e.0.00			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 7.5 shows one of the panel data regression models, i.e. Random Effect Model. Random Effect Model reflects value of R^2 as 0.6877 which implies that 68.77 % of the total variation in FDI outflows of developing nations is due to Economy size (GDP), GDP growth, Trade openness, Inflation, Infrastructure Development (EPC), Labour cost, Imports, Natural Resources, Political stability, Exchange rate and Corruption control whereas remaining 31.23 % is due to other factors. Adjusted R^2 0.6819 implies that independent variables in the model account for 68.19 % variance in the dependent variable i.e. FDI outflows. The difference between R^2 and Adjusted

R^2 is small (0.0058) indicates that sample size (n = 56 nations, t = 20 years, No. of observations = 1120) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 118.415 and significance or p-value 2.22e-16, i.e. 0.00 < 0.05 indicates that the model is fit and the null hypothesis 'There is no significant relationship between FDI outflows from developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI outflows from developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI outflows from developing nations.

Hence, the Regression Model under the Random Effect Model is seen as:

FDI Outflows (Y) = - 4973.61 + 1.693e-8 GDP + 156.710 GDPGR + 367.75 IMPEXP + 7.449 INFLN − 0.104 EPC − 8.711e-12 COMPE − 220.632 IMP − 24.34 NRES − 1063.18 POLSTB - 0.174 EXCHRT + 1191.78 CORUPC − 30.42 EXP − 29.897 LENDIR + ε_{it}

Beta values express that FDI outflows are positively and significantly related to independent variable viz. Economy size (GDP) and Trade openness at 1 % level of significance since the p-value is less than 0.01 and Imports are negatively significant at 10 % level of significance since the p-value is less than 0.10. However, other variables like GDP growth, Inflation, Infrastructure Development (EPC), Labour cost, Natural resources, Political stability, Exchange rate, Corruption control, Exports and Lending interest rate are not statistically significant.

D) Model Comparison:

This sub section of the chapter compares three regression models, i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model as shown in Table 7.6.

Table 7.6: Comparison of Regression Models showing Determinants of FDI Outflows from Developing Nations

Variables	Pooled OLS Model				Fixed Effect Model				Random Effect Model			
	Coef	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*z*	*p-v*
Const	−4560.32	1597.76	−2.854	0.0044 ***	−10007.5	3937.79	−2.541	0.0113 **	−4973.61	1788.59	−2.781	0.0054 ***
GDP	1.72630e-08	5.20120e-010	33.19	0.0001 ***	1.52039e-08	7.50588e-010	20.26	0.0001 ***	1.69396e-08	5.49390e-010	30.83	0.0001 ***
GDPGR	149.674	106.778	1.402	0.1614	93.3823	113.319	0.8241	0.4102	156.710	107.531	1.457	0.1450
IMPEXP	373.909	124.140	3.012	0.0027 ***	1333.84	401.730	3.320	0.0009 ***	367.750	134.686	2.730	0.0063 ***
INFLN	12.9174	12.1400	1.064	0.2877	−3.48794	12.3716	−0.2819	0.7781	7.44929	12.1419	0.6135	0.5395
EPC	−0.128706	0.169501	−0.7593	0.4479	2.27444	0.920676	2.470	0.0137 **	−0.104526	0.198852	−0.5256	0.5991
COMPE	−7.39427e-012	1.82392e-011	−0.4054	0.6853	−2.02578e-011	2.62616e-011	−0.7714	0.4408	−8.71140e-012	1.96383e-011	−0.4436	0.6573
IMP	−227.709	105.796	−2.152	0.0317 **	−667.302	238.127	−2.802	0.0052 ***	−220.632	115.940	−1.903	0.0570*
NRES	−26.6236	109.505	−0.2431	0.8080	111.061	180.648	0.6148	0.5389	−24.3450	121.260	−0.2008	0.8409
POLSTB	−1120.39	799.518	−1.401	0.1616	−89.0115	1258.42	−0.07073	0.9436	−1063.18	880.116	−1.208	0.2270
EXCHRT	−0.242373	0.354485	−0.6837	0.4944	0.165313	0.604881	0.2733	0.7847	−0.174708	0.394182	−0.4432	0.6576
CORUPC	1133.55	951.178	1.192	0.2338	−744.209	2477.08	−0.3004	0.7639	1191.78	1097.13	1.086	0.2774
EXP	−31.8038	40.5933	−0.7835	0.4336	−621.862	196.469	−3.165	0.0016 ***	−30.4237	42.9789	−0.7079	0.4790
LENDIR	−49.3966	30.2024	−1.636	0.1024	17.1620	33.5750	0.5112	0.6094	−29.8978	31.0415	−0.9632	0.3355

R^2	0.742407	**0.501516**	0.68772
Adj. R^2	0.737623	**0.46146**	0.68191
ANOVA	F(13, 700) = 155.1893, p-v = 4.7e-196 i.e.0.00	**F(13, 660) = 51.078, p-v = 9.99497e-091 i.e.0.00**	F(13, 699) = 118.415, p-v = 2.22e-16 i.e.0.00

Model Comparison Test		
Test		**Appropriate Model**
F Test	F(40, 660) = 2.70166, p-v = 1.89866e-007 i.e.0.00	Fixed effect model
LM Test	Chi-square(1) = 19.8435, p-v = 8.40463e-006 i.e. 0.00	Random effect model
Hausman Test	**Chi-square(14) = 48.8466, p-v = 4.69587e-006 i.e. 0.00**	**Fixed effect model**

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 7.6 shows the Panel data regression models viz. Pooled OLS model, Fixed Effect model and Random Effect Model and their comparison determine the statistically significant factors which influence the flow of FDI out of developing nations.

Firstly, Pooled OLS Model is compared with Fixed Effect Model. The fixed effect is tested by the F Test. F Test compares the fixed effect model and OLS model to see how much fixed effect model can improve the goodness of fit. Table 7.6 shows that F Test value is 2.70 and significance or p-value is 1.89866e-07, i.e.0.00 which is less than 0.05, this indicates that and null hypothesis "There is no significant fixed effect in the panel data" is rejected and alternate hypothesis is accepted, i.e. There is a significant fixed effect in the panel data. Therefore it is concluded that the fixed effect model is better than the pooled OLS model.

Secondly, Pooled OLS Model is compared with Random Effect Model. A random effect is tested by Breusch-Pagan's Lagrange Multiplier (LM) Test. The LM statistics follow the chi-squared distribution with one degree of freedom. LM test contrasts a random effect model with OLS to see whether random effect model can deal with heterogeneity better than pooled OLS. Table 7.6 shows that chi-square value is 19.8435 and significance or p-value is 8.40463e-06, i.e. 0.00 which is less than 0.05, this indicates that and null hypothesis "There is no significant random effect in the panel data" is rejected and alternate hypothesis is accepted i.e. There is a significant random effect in the panel data. It means there is significant random effect in the panel data. Therefore it is concluded that the random effect model is better than the pooled OLS model.

Thirdly, to know which model is more relevant, the Hausman specification test (Hausman Test) is used, this test compares the fixed effect and random effect models under the null hypothesis "Random Effect Model is appropriate".

Table 7.6 shows that under Hausman Test, chi-square value is 48.8466 and significance or p-value is 4.69587e-006, i.e. 0.00 which is less than 0.05, this proves that null hypothesis "Random Effect Model is appropriate" is rejected and alternate hypothesis is accepted, i.e. Random Effect Model is not appropriate. Therefore it is

concluded that the fixed effect model is more appropriate than the random effect model. The individual country effects under fixed effect model are shown in Table 7.7

Table 7.7: Individual Effects of Developing Nations on FDI Outflows (FE Model)

Nations	Estimate	Std. Error	t-value	P Value
Bahrain	-50629.55	18082.33	-2.7999	0.005261 ***
Bolivia	-5242.3	3809.52	-1.3761	0.169256
Brazil	-21492.7	3639.54	-5.9053	5.637e-09 ***
Bulgaria	-13079.62	5822.67	-2.2463	0.025014 **
Chile	-4600.96	5373.75	-0.8562	0.392203
China	-977.55	10015.47	-0.0976	0.922277
Colombia	71855.25	25005.31	2.8736	0.004189 ***
Costa Rica	-6227.56	4277.68	-1.4558	0.145917
Croatia	-10166.6	4697.47	-2.1643	0.030802 **
Dominican Republic	-5990.86	4065.97	-1.4734	0.141117
Egypt	-8011.8	3675.63	-2.1797	0.029632 **
Honduras	-5501.39	5448.41	-1.0097	0.312999
Hungary	-10825.11	6253.3	-1.7311	0.083901 *
India	-1769.64	3298.33	-0.5365	0.591778
Indonesia	-7878.94	5356.66	-1.4709	0.141804
Iran	-11387.59	7846.86	-1.4512	0.147192
Jamaica	-6615.08	4518.81	-1.4639	0.143698
Jordan	-6912.08	5379.23	-1.285	0.199259
Kenya	-3686.77	4239.07	-0.8697	0.384775
Kuwait	-41890.29	14672.12	-2.8551	0.004438 ***
Latvia	-9031.06	4837.83	-1.8668	0.062379 *
Malaysia	-8622.02	6861.01	-1.2567	0.209319
Mauritius	-6793.36	5178.58	-1.3118	0.190038
Mexico	-13330.06	5385.07	-2.4754	0.013560 **
Morocco	-3801.55	3971.04	-0.9573	0.338757
Namibia	-5503.58	4515.62	-1.2188	0.223361
Nigeria	-8235.35	5016.23	-1.6417	0.101121
Panama	-4901.71	6758.78	-0.7252	0.468564
Paraguay	-8194.78	5959.18	-1.3752	0.169551

Peru	-6214.51	3253.76	-1.9099	0.056574 *
Philippines	-5385.64	4177.86	-1.2891	0.197819
Poland	-10982.21	4945.23	-2.2208	0.026706 **
Qatar	-39500.12	14813.07	-2.6666	0.007851 ***
Romania	-9557.36	4221.13	-2.2642	0.023888 **
Russia	-4893.73	6407.43	-0.7638	0.445285
South Africa	-13568.99	5055.72	-2.6839	0.007460 ***
Sri Lanka	-3784.11	3714	-1.0189	0.308635
Thailand	-8725.72	4895.74	-1.7823	0.075159 *
Ukraine	-12556.98	5664.94	-2.2166	0.026990 **
Venezuela	-12849.7	4877.4	-2.6345	0.008623 ***
Zimbabwe	-5246.65	8098.7	-0.6478	0.517315

Source: Author's Compilation.

*** Significant at 1 % level,** Significant at 5 % level,*Significant at 10 % level.

Table 7.7 depicts that Individual effect of seven developing nations, i.e. Bahrain, Brazil, Colombia, Kuwait, Qatar, South Africa and Venezuela are significant at 1% level, seven developing nations, i.e. Bulgaria, Croatia, Egypt, Mexico, Poland, Romania and Ukraine are significant at 5 % level, four developing nations, i.e. Hungary, Latvia, Peru and Thailand are significant at 10 % level whereas the individual effects of remaining developing nations is not significant.

Table 7.6 proved that the fixed effect model is the best regression model. The independent variables viz. Economy size (GDP), Trade openness and Infrastructure Development (EPC) are positively significant, whereas Imports and Exports are negatively significant. However, other variables like GDP growth, Inflation, Labour cost, Natural resources, Political stability, Exchange rate, Corruption control and Lending interest rate are not statistically significant.

Further, table 7.6 explains that other things remaining constant, increase in GDP by 1 $ have marginal increase in FDI outflows, i.e. 0.01$, increase in Trade openness by 1 % leads to increase in FDI outflows by 1333.84 Million $, increase in EPC by 1 Kwh per capita increase FDI outflows by 2.27 Million $ whereas the increase in imports by

1 % decreases FDI outflows by 667.30 Million $ and increase in exports by 1 % also decreases FDI outflows of developing nations by 621.86 Million $.

Figure 7 A highlights that GDP, Trade openness, Infrastructural development, Imports and Exports are the factors which determine the flow of FDI out of developing nations.

Figure 7 A: Determinants of FDI Outflows from Developing Nations
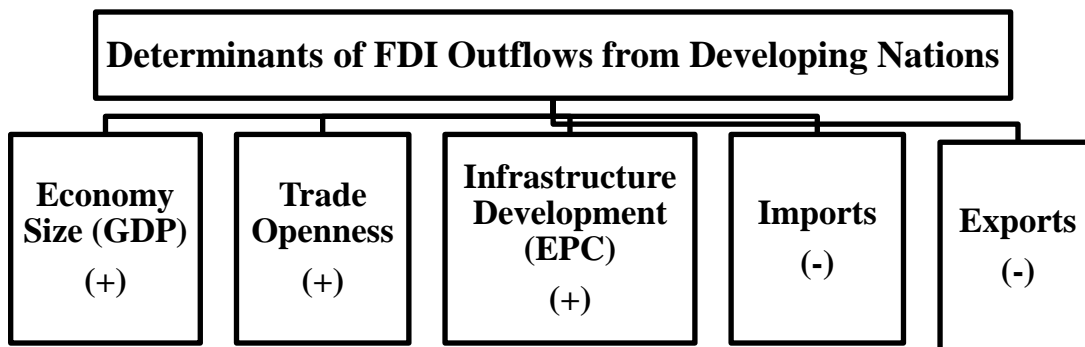
Source: Author's compilation from Table 7.6.

At the end of this chapter, the fourth objective of the study is fulfilled, i.e. to explore the factors influencing FDI outflows from Developing Nations. The analysis evidenced that only five out of thirteen factors are significant but only three factors push the FDI out of developing nations. These socio-economic factors are Economy size measured by Gross Domestic Product, Infrastructure development measured by Electric Power Consumption and Trade openness measured by imports and exports as a percentage of GDP. On the other hand Imports and Exports of goods and services express inverse relation with FDI outflow.

Chapter VIII

Determinants of FDI Outflows from Oil-exporting and Non-Oil exporting Developing Nations

The determinants of FDI outflows from oil-exporting and non-oil exporting developing nations are described in the following pages.

8.1 Determinants of FDI Outflows from Oil-exporting Developing Nations

This section of the chapter is based on the first part of the fifth objective, i.e. "To explore the factors influencing FDI outflows from Oil-exporting and Non-Oil exporting Developing Nations". This section analyses and notes the factors determining FDI outflows from oil-exporting developing nations. There are thirteen independent variables or factors under the study, out of which some factors may have a significant impact on the outflow of FDI from oil-exporting developing nations. Significant variables express the extent to which factors have an impact on the flow of FDI out of oil-exporting developing nations.

8.1.1 Research Methodology Applied:

The determinants of FDI outflows from oil-exporting developing nations are studied using the period from 1996 to 2015, i.e. 20 years. The secondary data of all variables used in this chapter is annual data. The sample size is 29 developing nations (Refer Table 3.9) chosen based on the availability of data. The total numbers of observations are 580. The data used is a long panel type. The data is analysed using statistical techniques like Descriptive statistics which is applied to understand the Measures of Central Tendency, i.e. Mean, Minimum value, Maximum value and Measures of Dispersion, i.e. Standard Deviation (SD) and the coefficient of variation (CV). Correlation analysis is used to study the extent of the relationship between FDI outflows and its independent variables. The study utilized Panel data modeling (Multiple regression analysis) as explained in chapter III. Gretl software is used for analysis. The following research hypotheses are tested to prove whether the independent variables affect outflow of FDI from oil-exporting developing nations.

Research Hypotheses	Tools Used For Testing
H5: There is no significant relationship between FDI outflows from Oil-exporting Developing Nations and its determinants.	ANOVA
H5a: There is no significant fixed effect in the panel data.	F Test
H5b: There is no significant random effect in the panel data.	Lagrange Multiplier (LM) Test
H5c: Random Effect Model is appropriate.	Hausman Specification Test

8.1.2 Empirical Analysis and Discussion:

Descriptive analysis, correlation analysis and panel data regression analysis are described in the following pages.

8.1.2.1 Descriptive Analysis

Table 8.1: Descriptive Statistics (29 Oil-exporting Developing Nations)

Variable	Mean	Minimum	Maximum	Std. Dev.	C.V.
FDIOF	5783.6	0.68450	3.6481e+005	23573.	4.0758
GDP	3.9795e+011	6.4138e+008	1.1363e+013	1.0653e+012	2.6770
GDPGR	4.0629	-13.127	33.736	4.1317	1.0169
IMPEXP	39.984	7.8178	118.82	22.109	0.55295
INFLN	12.348	-4.8633	162.93	25.780	2.0877
EPC	4177.3	74.131	21911.	5218.8	1.2493
COMPE	1.4161e+013	1.2312e+008	6.0425e+014	6.0023e+013	4.2387
IMP	36.767	8.9054	100.60	19.438	0.52867
NRES	9.6864	1.5693e-005	37.801	8.8072	0.90923
POLSTB	-0.28911	-2.3745	1.2779	0.81769	2.8283
EXCHRT	778.37	0.26883	29011.	2792.3	3.5874
CORUPC	-0.16760	-1.4312	2.0091	0.75141	4.4834
EXP	44.643	6.7302	144.34	26.762	0.59947
LENDIR	16.600	3.4225	146.81	14.415	0.86836

Source: Author's Compilation.

Table 8.1 presents the descriptive statistics of all variables for the data of 29 developing nations used in this chapter. The table shows that FDI outflow of oil-exporting developing nations on an average is 5,783.6 million dollars. The minimum FDI inflow is 0.68 million dollars and the maximum is 3,64, 810 million dollars. The standard deviation is 23,573 million dollars and the coefficient of variation is 4.07

million dollars. For twenty years, the mean of GDP is 397.95 trillion dollars, GDP growth rate 4.06 %, imports and exports 39.98 % of GDP, inflation rate 12.35 %, electric power consumption 4177.3 kwh per capita, compensation of employees 14,161 trillion LCU, imports 36.77 % of GDP, natural resources 9.69 % of GNI, political stability index – 0.29, exchange rate 778.37 LCU per $, corruption control index is – 0.17, Export 44.64 % of GDP and lending interest rate 16.60 %.

8.1.2.2 Correlation Analysis

Table 8.2: Correlation Matrix (29 Oil-exporting Developing Nations)

F	G	GG	IE	IF	EP	C	I	N	PS	EX	CP	E	L	
1.00	0.84	0.10	0.42	-0.07	0.14	-0.04	0.34	-0.09	0.11	-0.05	0.34	0.39	-0.13	**F**
	1.00	0.04	0.34	-0.08	0.10	0.01	0.26	-0.14	0.08	-0.01	0.34	0.32	-0.05	**G**
		1.00	0.15	-0.10	0.16	-0.05	0.09	0.17	0.03	-0.04	0.13	0.13	-0.20	**GG**
			1.00	-0.08	0.44	-0.19	0.95	0.06	0.46	-0.20	0.61	0.87	-0.43	**IE**
				1.00	-0.17	0.01	-0.02	-0.12	-0.04	0.01	-0.14	-0.12	0.40	**IF**
					1.00	-0.12	0.30	0.48	0.46	-0.16	0.58	0.46	-0.27	**EP**
						1.00	-0.20	0.06	-0.20	0.89	-0.15	-0.16	-0.06	**C**
							1.00	-0.15	0.43	-0.21	0.57	0.76	-0.40	**I**
								1.00	-0.01	0.01	-0.17	0.18	-0.16	**N**
									1.00	-0.28	0.67	0.33	-0.08	**PS**
										1.00	-0.14	-0.16	-0.04	**EX**
											1.00	0.55	-0.24	**CP**
												1.00	-0.44	**E**
													1.00	**L**

Source: Author's Compilation.

Note: F – FDIOF, G – GDP, GG – GDPGR, IE – IMPEXP, IF – INFLN, EP – EPC, C – COMPE, I – IMP, N – NRES, PS – POLSTB, EX – EXCHRT, CP – CORUPC, E – EXP, L – LENDIR.

Table 8.2 shows that there is very high correlation (0.70 and above) between FDI and GDP (0.84) whereas all remaining variables, i.e. GDP growth rate, trade openness, inflation, electric power consumption, compensation of employees, import, natural resources, political stability, exchange rate, corruption control, exports and lending interest rate reflect very low correlation (0.40 and below) with FDI outflow.

8.1.2.3 Regression Analysis

This sub section of the chapter determines the factors influencing FDI outflows from oil-exporting developing nations with the help of Regression Analysis. The determinants of FDI outflows are extracted with the help of Pooled OLS model, Fixed Effect model and Random Effect Model and their comparison, as shown in tables stated below.

A) Pooled OLS Model:

Table 8.3: Pooled OLS Model showing Determinants of FDI Outflows from Oil-exporting Developing Nations

Variables	*Coef*	*S. E.*	*t-r*	*p-v*
const	−7010.74	3824.03	−1.833	0.0677*
GDP	1.70796e-08	8.06716e-010	21.17	0.0001***
GDPGR	312.051	210.123	1.485	0.1385
IMPEXP	574.625	239.811	2.396	0.0171**
INFLN	74.4454	65.7958	1.131	0.2587
EPC	0.0625880	0.297045	0.2107	0.8332
COMPE	−7.66790e-012	2.85355e-011	−0.2687	0.7883
IMP	−417.925	234.768	−1.780	0.0760*
NRES	−213.799	209.250	−1.022	0.3076
POLSTB	−1215.38	1726.45	−0.7040	0.4819
EXCHRT	−0.182057	0.579867	−0.3140	0.7537
CORUPC	−1106.11	2777.79	−0.3982	0.6907
EXP	−23.2314	60.1771	−0.3861	0.6997
LENDIR	−82.6494	71.1035	−1.162	0.2459
R^2	0.73868			
Adj. R^2	0.72841			
ANOVA	F(13, 331) = 71.97158, p-v = 4.12e-88 i.e.0.00			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 8.3 shows one of the panel data regression models, i.e. Pooled OLS model. OLS Model reflects value of R^2 as 0.7386 which implies that 73.86 % of the total variation in FDI outflows of oil-exporting developing nations is due to Economy size (GDP), GDP growth, Trade openness, Inflation, Infrastructure Development (EPC),

Labour cost, Imports, Natural Resources, Political stability, Exchange rate, Corruption control, Exports and Lending interest rate whereas remaining 26.14 % is due to other factors. Adjusted R^2 0.7284 implies that independent variables in the model account for 72.84 % variance in the dependent variable i.e. FDI outflows. The difference between R^2 and Adjusted R^2 is small (0.010) which indicates that sample size (n = 29 nations, t = 20 years, No. of observations = 580) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 71.97 and significance or p-value 4.12e-88, i.e. 0.00 < 0.05 indicates that the model is fit and the null hypothesis 'There is no significant relationship between FDI outflows from oil-exporting developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI outflows from oil-exporting developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI outflows from oil-exporting developing nations.

Hence, the Regression Model under the Pooled OLS Model is seen as:

FDI Outflows (Y) = - 7010.74 + 1.707e-08 GDP + 312.051 GDPGR + 574.625 IMPEXP + 74.44 INFLN + 0.062 EPC − 7.66e-12 COMPE − 417.92 IMP − 213.79 NRES − 1215.38 POLSTB − 0.182 EXCHRT − 1106.11 CORUPC − 23.23 EXP − 82.649 LENDIR + ε_{it}

Beta values express that FDI outflows are positively and significantly related to independent variables viz. GDP at 1 % level of significance since the p-value is less than 0.01 and Trade openness at 5 % level of significance since the p-value is less than 0.05 and Imports are negatively significant at 10 % level of significance since the p-value is less than 0.1. However, other variables like GDP growth, Inflation, Infrastructure Development (EPC) Labour cost, Natural resources, Political stability, Exchange rate, Corruption control, Export and Lending interest rate are not statistically significant.

B) Fixed Effect Model:

Table 8.4: Fixed Effect Model showing Determinants of FDI Outflows from Oil-exporting Developing Nations

Variables	*Coef*	*S. E.*	*t-r*	*p-v*
const	−17072.4	9046.00	−1.887	0.0600*
GDP	1.47269e-08	1.16804e-09	12.61	0.0001***
GDPGR	145.487	220.016	0.6613	0.5089
IMPEXP	1323.59	599.374	2.208	0.0280**
INFLN	−39.3073	78.2141	−0.5026	0.6156
EPC	2.97817	1.56700	1.901	0.0583*
COMPE	−2.19784e-011	3.86185e-011	−0.5691	0.5697
IMP	−688.724	393.282	−1.751	0.0809*
NRES	42.2798	299.155	0.1413	0.8877
POLSTB	313.409	2330.22	0.1345	0.8931
EXCHRT	0.179999	0.882162	0.2040	0.8385
CORUPC	−1519.55	5433.04	−0.2797	0.7799
EXP	−562.880	291.168	−1.933	0.0541*
LENDIR	48.0774	91.1367	0.5275	0.5982
R^2	0.4991			
Adj. R^2	0.4990			
ANOVA	F(13, 312) = 23.9111, p-v = 1.487e-039 i.e.0.00			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 8.4 shows one of the panel data regression models, i.e. Fixed Effect Model. This model reflects value of R^2 as 0.4991 which implies that 49.91 % of the total variation in FDI outflows of oil-exporting developing nations is due to Economy size (GDP), GDP growth, Trade openness, Inflation, Infrastructure Development (EPC), Labour cost, Imports, Natural Resources, Political stability, Exchange rate, Corruption control, Exports and Lending interest rate whereas remaining 50.09 % is due to other factors. Adjusted R^2 0.4990 implies that independent variables in the model account for 49.90 % variance in the dependent variable i.e. FDI outflows. The difference between R^2 and Adjusted R^2 is small (0.0001), it means that sample size (n = 29

nations, t = 20 years, No. of observations = 580) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 23.91 and significance or p-value 1.487e-039, i.e. 0.00 < 0.05 indicates that the model is fit and the null hypothesis 'There is no significant relationship between FDI outflows from oil-exporting developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI outflows from oil-exporting developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI outflows from oil-exporting developing nations.

Hence, the Regression Model under the Fixed Effect Model is seen as:

FDI Outflows (Y) = - 17072.4 + 1.472e-08 GDP + 145.487 GDPGR + 1323.59 IMPEXP − 39.30 INFLN + 2.97 EPC − 2.197e-11 COMPE − 688.72 IMP + 42.27 NRES + 313. 409 POLSTB + 0.179 EXCHRT − 1519.55 CORUPC − 562.88 EXP + 48.07 LENDIR + ϵ_{it}

Beta values express that FDI outflows are positively and significantly related to independent variables viz. Economy size (GDP) at 1 % level of significance since the p-value is less than 0.01, Trade openness at 5% level of significance since the p-value is less than 0.05, Infrastructure Development (EPC) at 10 % level of significance since the p-value is less than 0.10 whereas FDI outflows is negatively and significantly related to Imports and Exports at 10 % level of significance. However, other variables like GDP growth, Inflation, Labour cost, Natural resources, Political stability, Exchange rate, Corruption control and Lending interest rate are not statistically significant.

C) Random Effect Model:

Table 8.5: Random Effect Model showing Determinants of FDI Outflows from Oil-exporting Developing Nations

Variables	Coef	S. E.	t-r	p-v
const	−7965.53	4345.77	−1.833	0.0668*
GDP	1.64994e-08	8.54904e-010	19.30	0.0001***
GDPGR	301.934	209.527	1.441	0.1496
IMPEXP	514.811	260.131	1.979	0.0478**
INFLN	34.1685	70.2872	0.4861	0.6269
EPC	0.0724424	0.358382	0.2021	0.8398
COMPE	−1.15856e-011	3.16801e-011	−0.3657	0.7146
IMP	−343.908	253.775	−1.355	0.1754
NRES	−179.917	229.226	−0.7849	0.4325
POLSTB	−840.411	1908.16	−0.4404	0.6596
EXCHRT	−0.0182226	0.667238	−0.02731	0.9782
CORUPC	−984.210	3117.31	−0.3157	0.7522
EXP	−16.3754	66.7438	−0.2453	0.8062
LENDIR	−35.4676	77.8105	−0.4558	0.6485
R^2	0.6912			
Adj. R^2	0.6791			
ANOVA	F(13, 330) = 56.8279, p-v = 2.22e-16 i.e.0.00			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 8.5 shows one of the panel data regression models, i.e. Random Effect Model. Random Effect Model reflects value of R^2 as 0.6912 which implies that 69.12 % of the total variation in FDI outflows of oil-exporting developing nations is due to Economy size (GDP), GDP growth, Trade openness, Inflation, Infrastructure Development (EPC), Labour cost, Imports, Natural Resources, Political stability, Exchange rate, Corruption control, Exports and Lending interest rate whereas remaining 31.88 % is due to other factors. Adjusted R^2 0.6791 implies that independent variables in the model account for 67.91 % variance in the dependent variable i.e. FDI outflows. The difference between R^2 and Adjusted R^2 is small

(0.012), it means that sample size (n = 29 nations, t = 20 years, No. of observations = 580) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 56.82 and significance or p-value 2.22e-16, i.e. 0.00 < 0.05 indicates that the model is fit and the null hypothesis 'There is no significant relationship between FDI outflows from oil-exporting developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI outflows from oil-exporting developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI outflows from oil-exporting developing nations.

Hence, the Regression Model under the Random Effect Model is seen as:

FDI Outflows (Y) = - 7965.53 + 1.649e-08 GDP + 301.93 GDPGR+ 514.81 IMPEXP + 34.16 INFLN + 0.072 EPC − 1.15e-11 COMPE − 343.90 IMP − 179.91 NRES − 840.411 POLSTB - 0.018 EXCHRT − 984.21CORUPC − 16.37 EXP − 35.46 LENDIR + ε_{it}

Beta values express that FDI outflows are positively and significantly related to independent variable viz. Economy size (GDP) at 1 % level of significance since the p-value is less than 0.01 and Trade openness at 10 % level of significance since the p-value is less than 0.1. However, all other variables like GDP growth, Inflation, Infrastructure Development (EPC), Labour cost, Imports, Natural resources, Political stability, Exchange rate, Corruption control, Exports and Lending interest rate are not statistically significant.

D) Model Comparison:

This sub section of the chapter compares three regression models, i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model as shown in Table 8.6.

Table 8.6: Comparison of Regression Models showing Determinants of FDI Outflows from Oil-exporting Developing Nations

Variables	Pooled OLS Model				Fixed Effect Model				Random Effect Model			
	Coef	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*z*	*p-v*
const	−7010.74	3824.03	−1.833	0.0677*	−17072.4	9046.00	−1.887	0.0600*	−7965.53	4345.77	−1.833	0.0668*
GDP	1.70796e-08	8.06716e-010	21.17	0.0001 ***	1.47269e-08	1.16804e-09	12.61	0.0001 ***	1.64994e-08	8.54904e-010	19.30	0.0001 ***
GDPGR	312.051	210.123	1.485	0.1385	145.487	220.016	0.6613	0.5089	301.934	209.527	1.441	0.1496
IMPEXP	574.625	239.811	2.396	0.0171 **	1323.59	599.374	2.208	0.0280 **	514.811	260.131	1.979	0.0478 **
INFLN	74.4454	65.7958	1.131	0.2587	−39.3073	78.2141	−0.5026	0.6156	34.1685	70.2872	0.4861	0.6269
EPC	0.0625880	0.297045	0.2107	0.8332	2.97817	1.56700	1.901	0.0583*	0.0724424	0.358382	0.2021	0.8398
COMPE	−7.66790e-012	2.85355e-011	−0.2687	0.7883	−2.19784e-011	3.86185e-011	−0.5691	0.5697	−1.15856e-011	3.16801e-011	−0.3657	0.7146
IMP	−417.925	234.768	−1.780	0.0760*	−688.724	393.282	−1.751	0.0809*	−343.908	253.775	−1.355	0.1754
NRES	−213.799	209.250	−1.022	0.3076	42.2798	299.155	0.1413	0.8877	−179.917	229.226	−0.7849	0.4325
POLSTB	−1215.38	1726.45	−0.7040	0.4819	313.409	2330.22	0.1345	0.8931	−840.411	1908.16	−0.4404	0.6596
EXCHRT	−0.182057	0.579867	−0.3140	0.7537	0.179999	0.882162	0.2040	0.8385	−0.0182226	0.667238	−0.02731	0.9782
CORUPC	−1106.11	2777.79	−0.3982	0.6907	−1519.55	5433.04	−0.2797	0.7799	−984.210	3117.31	−0.3157	0.7522
EXP	−23.2314	60.1771	−0.3861	0.6997	−562.880	291.168	−1.933	0.0541*	−16.3754	66.7438	−0.2453	0.8062
LENDIR	−82.6494	71.1035	−1.162	0.2459	48.0774	91.1367	0.5275	0.5982	−35.4676	77.8105	−0.4558	0.6485

R^2	0.73868	**0.4991**	0.6912
Adj. R^2	0.72841	**0.4990**	0.6791
ANOVA	F(13, 331) = 71.97158, p-v = 4.12e-88 i.e.0.00	**F(13, 312) = 23.9111, p-v = 1.487e-039 i.e.0.00**	F(13, 330) = 56.8279, p-v = 2.22e-16 i.e.0.00
Model Comparison Test			
Test			**Appropriate Model**
F Test	F(19, 312) = 2.37114, p-v = 0.00121363 i.e.0.00		Fixed Effect Model
LM Test	Chi-square(1) = 3.24433, p-v = 0.0716711 i.e. > 0.05		Pooled OLS Model
Hausman Test	**Chi-square(14) = 23.7419, p-v = 0.0335889 i.e. < 0.05**		**Fixed Effect Model**

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 8.6 shows the Panel data regression models viz. Pooled OLS model, Fixed Effect model and Random Effect Model and their comparison determine the statistically significant factors which influence the flow of FDI out of oil-exporting developing nations.

Firstly, Pooled OLS Model is compared with Fixed Effect Model. The fixed effect is tested by the F Test. F Test compares the fixed effect model and OLS to see how much fixed effect model can improve the goodness of fit. Table 8.6 shows that F Test value is 2.37 and significance or p-value is 0.00121363, i.e.0.00 which is less than 0.05, this indicates that and null hypothesis "There is no significant fixed effect in the panel data" is rejected and alternate hypothesis is accepted i.e. There is a significant fixed effect in the panel data. Therefore it is concluded that the fixed effect model is better than the pooled OLS.

Secondly, Pooled OLS Model is compared with Random Effect Model. A random effect is tested by Breusch-Pagan's Lagrange Multiplier (LM) Test. The LM statistics follow the chi-squared distribution with one degree of freedom. LM test contrasts a random effect model with OLS to see whether random effect model can deal with heterogeneity better than pooled OLS. Table 8.6 shows that chi-square value is 3.244 and significance or p-value is 0.071, which is more than 0.05, this indicates that null hypothesis "There is no significant random effect in the panel data" is accepted. Therefore it is concluded that the pooled OLS model is better than the random effect model.

Thirdly, to know which model is more relevant, the Hausman specification test (Hausman Test) is used which compares the fixed effect and random effect models under the null hypothesis "Random Effect Model is appropriate".

Table 8.6 shows that under the Hausman Test, chi-square value is 23.74 and significance or p-value is 0.335 which is less than 0.05, this indicates that the null hypothesis "Random Effect Model is not appropriate" is rejected. Therefore it is concluded that the fixed effect model is more appropriate than Random effect model.

The individual effects under random effect model are shown in Table 8.7

Table 8.7: Individual Effects of Oil-exporting Developing Nations on FDI Outflows (FE Model)

Nations	Estimate	Std. Error	t-value	P Value
Bahrain	-65221.8	31973.1	-2.0399	0.042205 **
Bolivia	*-6734.2*	*7090.6*	*-0.9497*	*0.34299*
Brazil	-23980.4	7131.1	-3.3628	0.000868 ***
China	-7.22E+03	2.00E+04	-0.3611	0.7183
Colombia	64475.3	37478.8	1.7203	0.086370 *
Egypt	-9203.9	6515.6	-1.4126	0.15878
Indonesia	-8708.6	8619.4	-1.0104	0.31311
Iran	-12385.8	12123.8	-1.0216	0.30776
Kuwait	-53971.7	2.58E+04	-2.0909	0.037352 **
Malaysia	-13763.6	13955.6	-0.9862	0.32478
Mexico	-15201	8686.6	-1.7499	0.081117 *
Nigeria	-8820.7	9005.2	-0.9795	0.32809
Peru	-7917.8	5890.4	-1.3442	0.17987
Philippines	-6989.7	8209.5	-0.8514	0.39519
Poland	-14141.8	8772.8	-1.612	0.10797
Qatar	-51763.1	26290.5	-1.9689	0.049853 **
Romania	-12236.8	7948.6	-1.5395	0.124703
Russia	-9298.3	11150.5	-0.8339	0.404979
Thailand	-11988	9821.8	-1.2206	0.223179
Venezuela	-14840.8	8696.8	-1.7065	0.088918 *

Source: Author's Compilation.

*** Significant at 1 % level,** Significant at 5 % level,*Significant at 10 % level.

Table 8.7 depicts that Individual effect of only one oil-exporting developing nation i.e. Brazil is significant at 1 % level, three oil-exporting developing nations, i.e. Bahrain, Kuwait and Qatar are significant at 5 % level and three oil-exporting developing nations, i.e. Colombia, Mexico and Venezuela are significant at 10 %

level whereas the individual effects of remaining oil-exporting developing nations is not significant.

Table 8.6 proved that the fixed effect model is the best regression model. The independent variables i.e. Economy size (GDP), Trade openness and Infrastructure development is positively significant, whereas Imports and Exports are negatively significant. All other factors, i.e. GDP growth, Inflation, Labour cost, Imports, Natural resources, Political stability, Exchange rate, Corruption control, Exports and Lending interest rate are not statistically significant.

Further, Table 8.6 explains that other things remaining constant increase in GDP by 1 $ have marginal increase in FDI outflows i.e. 0.01 $, increase in Trade openness by 1 % leads to increase in FDI outflows by 1323.59 Million $, increase in EPC by 1 Kwh per capita increases FDI outflows by 2.97 Million $ whereas the increase in imports by 1 % decreases FDI outflows by 688.72 Million $ and increase in exports by 1 % also decreases FDI outflows of oil-exporting developing nations by 562.88 Million $.

Figure 8 A highlights that GDP, Trade openness, Infrastructural development, Imports and Exports are the factors which determine the flow of FDI out of oil-exporting developing nations.

Figure 8 A: Determinants of FDI Outflows from Oil-exporting Developing Nations
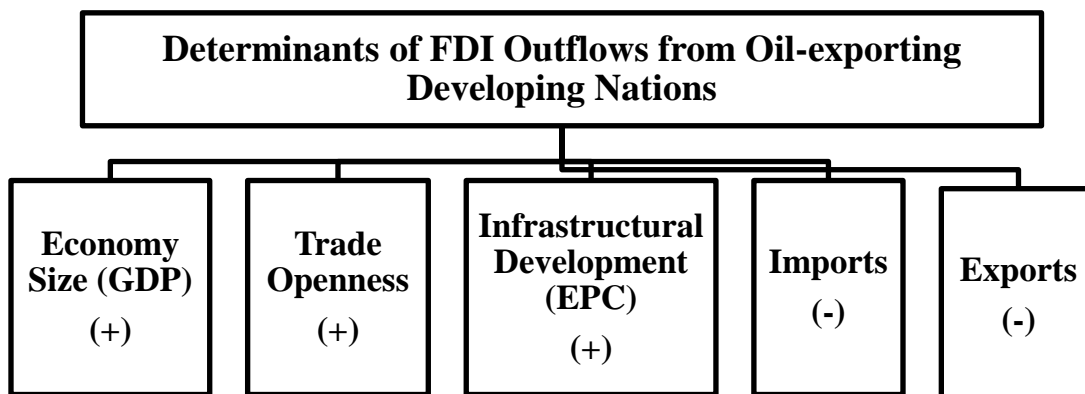
Source: Author's compilation from Table 8.6.

8.2 Determinants of FDI Outflows from Non-Oil exporting Developing Nations

This section of the chapter is based on the fifth objective, i.e. "To explore the factors influencing FDI outflows from Non-Oil exporting Developing Nations". This section analyses and finds out the factors determining FDI outflows from non-oil exporting developing nations. There are fourteen independent variables or factors under the study, out of which some factors may have a significant impact on the outflow of FDI from non-oil exporting developing nations. Significant variables explain the magnitude to which factors have an impact on the flow of FDI out of non-oil exporting developing nations.

8.2.1 Research Methodology Applied:

The determinants of FDI outflows from non-oil-exporting developing nations are studied using the period from 1996 to 2015, i.e. 20 years. The secondary data of all variables used in this chapter is annual data. The sample size is 27 developing nations (Refer Table 3.8) chosen based on the availability of data. The total numbers of observations are 540. The data used is a long panel type. The data is analysed using statistical techniques like Descriptive statistics which is applied to understand the Measures of Central Tendency, i.e. Mean, Minimum value, Maximum value and Measures of Dispersion, i.e. Standard Deviation (SD) and the coefficient of variation (CV). Correlation analysis is used to study the extent of the relationship between FDI outflows and its independent variables. The study utilized Panel data modeling (Multiple regression analysis) as explained in chapter III. Gretl software is used for analysis. The following research hypotheses are tested to prove whether the independent variables affect the flow of FDI from non-oil exporting developing nations.

Research Hypotheses	Tools Used For Testing
H_6: *There is no significant relationship between FDI outflows from Non-Oil-exporting Developing Nations and its determinants.*	ANOVA
H_{6a}: *There is no significant fixed effect in the panel data.*	F Test
H_{6b}: *There is no significant random effect in the panel data.*	Lagrange Multiplier (LM) Test
H_{6c}: *Random Effect Model is appropriate.*	Hausman Specification Test

8.2.2 Empirical Analysis and Discussion:

Descriptive analysis, correlation analysis and panel data regression analysis are described in the following pages.

8.2.2.1 Descriptive Analysis

Table 8.8: Descriptive Statistics (27 Non-Oil-exporting Developing Nations)

Variable	Mean	Minimum	Maximum	Std. Dev.	C.V.
FDIOF	1292.4	0.98592	47139.	4811.4	3.7230
GDP	1.0094e+011	5.0307e+008	2.0954e+012	2.5077e+011	2.4844
GDPGR	3.6480	-17.669	14.036	3.9097	1.0718
IMPEXP	45.789	10.776	112.51	18.012	0.39338
INFLN	120.10	-3.7489	24411.	1445.5	12.036
EPC	1898.3	107.42	5061.2	1322.5	0.69667
COMPE	6.1750e+011	3.3890e+007	1.4980e+013	1.7283e+012	2.7989
IMP	49.752	11.345	117.03	19.559	0.39314
NRES	1.8743	0.0011116	14.784	2.1302	1.1365
POLSTB	-0.17883	-2.8100	1.2821	0.81611	4.5637
EXCHRT	306.01	0.010014	9686.8	998.34	3.2624
CORUPC	-0.17928	-1.4049	1.5923	0.65085	3.6303
EXP	41.797	10.206	107.99	17.703	0.42355
LENDIR	19.678	2.9025	578.96	41.211	2.0942

Source: Author's Compilation.

Table 8.8 presents the descriptive statistics of all variables for the data of 27 non-oil exporting developing nations used in this chapter. The table shows that FDI outflow of non-oil exporting developing nations on an average is 1,292.4 million dollars. The minimum FDI inflow is 0.99 million dollars and the maximum is 47,139 million dollars. The standard deviation is 4,811.4 million dollars and the coefficient of variation is 3.72 million dollars. For twenty years, the mean of GDP is 1.01 trillion dollars, GDP growth rate 3.65 %, imports and exports 45.79 % of GDP, inflation rate 120.1 %, electric power consumption 1898.3 kwh per capita, compensation of employees 617.5 trillion LCU, imports 49.75 % of GDP, natural resources 1.87 % of GNI, political stability index – 0.18, exchange rate 306.01 LCU per $, corruption control index is – 0.18, Export 41.79 % of GDP and lending interest rate 19.68 %.

8.2.2.2 Correlation Analysis

Table 8.9: Correlation Matrix (27 Non-Oil-exporting Developing Nations)

F	G	GG	IE	IF	EP	C	I	N	PS	EX	CP	E	L	
1.00	0.84	0.12	-0.19	-0.02	-0.01	0.16	-0.21	0.27	-0.14	-0.04	0.09	-0.16	-0.08	**F**
	1.00	0.14	-0.36	-0.01	-0.04	0.05	-0.37	0.17	-0.30	-0.08	-0.02	-0.32	-0.08	**G**
		1.00	-0.06	-0.09	-0.22	0.04	-0.02	0.01	-0.04	-0.03	0.02	-0.10	-0.15	**GG**
			1.00	-0.03	0.26	-0.03	0.97	-0.30	0.49	-0.01	0.18	0.97	-0.07	**IE**
				1.00	0.06	-0.04	-0.06	-0.03	-0.04	-0.02	-0.05	0.00	0.62	**IF**
					1.00	0.08	0.19	0.01	0.42	-0.07	0.42	0.31	-0.01	**EP**
						1.00	-0.07	0.45	-0.05	0.82	0.03	0.03	-0.02	**C**
							1.00	-0.35	0.44	-0.07	0.14	0.88	-0.12	**I**
								1.00	-0.27	0.42	-0.14	-0.22	0.05	**N**
									1.00	-0.17	0.65	0.51	-0.07	**PS**
										1.00	-0.27	0.06	0.12	**EX**
											1.00	0.21	-0.20	**CP**
												1.00	-0.01	**E**
													1.00	**L**

Source: Author's Compilation.

Note: F – FDIOF, G – GDP, GG – GDPGR, IE – IMPEXP, IF – INFLN, EP – EPC, C – COMPE, I – IMP, N – NRES, PS – POLSTB, EX – EXCHRT, CP – CORUPC, E – EXP, L – LENDIR.

Table 8.9 shows that there is very high correlation (0.80 and above) between FDI and GDP (0.84) whereas all remaining variables, i.e. GDP growth rate, trade openness, inflation, electric power consumption, compensation of employees, import, natural resources, political stability, exchange rate, corruption control, exports and lending interest rate reflect very low correlation (0.30 and below) with FDI outflow.

8.2.2.3 Regression Analysis.

This sub section of the chapter determines the factors influencing FDI outflows from non-oil-exporting developing nations with the help of panel data regression analysis. The determinants of FDI outflows are extracted with the help of Pooled OLS model, Fixed Effect Model and Random Effect Model and their comparison, as shown in tables stated below.

A) Pooled OLS Model:

Table 8.10: Pooled OLS Model showing Determinants of FDI Outflows from Non-Oil-exporting Developing Nations

Variables	*Coef*	*S. E.*	*t-r*	*p-v*
const	-2047.5	5.69E+02	-3.5955	0.0004 ***
GDP	1.839E-08	5.18E-10	35.486	2.2e-16 ***
GDPGR	-43.69	36.535	-1.1958	0.2325
IMPEXP	8.3824	41.416	0.2024	0.8397
INFLN	-0.2237	2.9108	-0.0769	0.9387
EPC	-0.31335	0.11555	-2.7119	0.0070 **
COMPE	4.7245E-10	1.27E-10	3.7103	0.0002 ***
IMP	29.146	36.602	0.7963	0.4264
NRES	314	69.809	4.498	9.29e-06 ***
POLSTB	63.33	273.08	0.2319	0.8167
EXCHRT	-0.9495	0.28917	-3.2839	0.0011**
CORUPC	977.74	267.51	3.655	0.0003 ***
LENDIR	8.3293	8.7313	0.954	0.3407
R^2	0.8351			
Adj. R^2	0.82954			
ANOVA	F (12,356) = 150.239, p-v = 3.1e-131			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 8.10 shows one of the panel data regression models, i.e. Pooled OLS model. Pooled OLS Model reflects value of R^2 as 0.8351 which implies that 83.51 % of the

total variation in FDI outflows from non-oil exporting developing nations is due to Market size (GDP), GDP growth, Trade openness, Inflation, Infrastructure Development (EPC), Labour cost, Imports, Natural Resources, Political stability, Exchange rate, Corruption control and Lending interest rate whereas remaining 16.49 % is due to other factors. The variable 'Export' is excluded from the analysis due to exact multicollinearity. Adjusted R^2 0.8295 implies that independent variables in the model account for 82.95 % variance in the dependent variable i.e. FDI outflows. The difference between R^2 and Adjusted R^2 is small (0.0056), it means that sample size (n = 27 nations, t = 20 years, No. of observations = 540) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 150.239 and significance or p-value 3.1e-131, i.e. 0.00 < 0.05 indicates that the model is fit and the null hypothesis 'There is no significant relationship between FDI outflows from non-oil exporting developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI outflows from non-oil exporting developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI outflows from non-oil-exporting developing nations.

Hence, the Regression Model under the Pooled OLS Model is seen as:

FDI Outflows (Y) = - 2047.5 + 1.839e-8 GDP – 43.69 GDPGR + 8.3824 IMPEXP – 0.223 INFLN - 0.313 EPC + 4.724e-10 COMPE + 29.146 IMP + 314 NRES + 63.33 POLSTB – 0.9495 EXCHRT + 977.74 CORUPC + 8.3293 LENDIR + ε_{it}

Beta values express that FDI outflows are positively and significantly related to independent variables viz. Economy size (GDP), Labour cost, Natural resources, and Corruption control at 1 % level of significance since the p-value is less than 0.01 and National Income at 5% level of significance since the p-value is less than 0.05. Whereas FDI outflows are negatively and significantly related to Infrastructure Development (EPC) and Exchange rate at 5% level of significance since the p-value is less than 0.05. However, other variables like GDP growth, Trade openness, Inflation, Imports, Political stability and Cost of capital (Lending interest rate) are not statistically significant.

B) Fixed Effect Model:

Table 8.11: Fixed Effect Model showing Determinants of FDI Outflows from Non-Oil-exporting Developing Nations

Variables	Coef	S. E.	t-r	p-v
const	−3024.25	1153.99	−2.621	0.0092 ***
GDP	**2.06E-08**	9.04E-10	22.77	**4.37e-070 *****
GDPGR	−32.1339	39.3644	−0.816	0.4149
IMPEXP	21.7801	57.857	0.3764	0.7068
INFLN	−1.3114	2.90197	−0.4519	0.6516
EPC	−0.3858	0.43691	−0.8831	0.3778
COMPE	**5.72E-10**	1.68E-10	3.399	**0.0008***
IMP	21.5587	54.1252	0.3983	0.6907
NRES	**287.66**	121.637	2.365	**0.0186**
POLSTB	−423.252	461.99	−0.9162	0.3602
EXCHRT	1.57386	1.24932	1.26	0.2086
CORUPC	**1267.85**	775.379	1.635	**0.1003***
LENDIR	10.4884	9.02224	1.163	0.2459
R^2	**0.67391**			
Adj. R^2	**0.64286**			
ANOVA	**F(12,336) = 57.8668, p-v = 1.0e-118 i.e. 0.00**			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 8.11 shows one of the panel data regression models, i.e. Fixed Effect Model. Fixed Effect Model reflects value of R^2 as 0.6739 which implies that 67.39 % of the total variation in FDI outflows from non-oil exporting developing nations is due to Economy size (GDP), GDP growth, Trade openness, Inflation, Infrastructure Development (EPC), Labour cost, Imports, Natural Resources, Political stability, Exchange rate, Corruption control and Lending interest rate whereas remaining 32.61 % is due to other factors. The variable 'Export' is excluded from the analysis due to exact multicollinearity. Adjusted R^2 0.6428 implies that independent variables in the model account for 64.28 % variance in the dependent variable, i.e. FDI outflows. The

difference between R^2 and Adjusted R^2 is small (0.031), it means that sample size (n = 27 nations, t = 20 years, No. of observations = 540) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 57.86 and significance or p-value 1.0e-118, i.e. 0.00 < 0.05 indicates that the model is fit and the null hypothesis 'There is no significant relationship between FDI outflows from non-oil exporting developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI outflows from non-oil exporting developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI outflows from non-oil exporting developing nations.

Hence, the Regression Model under the Fixed Effect Model is seen as:

FDI Outflows (Y) = - 3024.25 + 2.06e-8 GDP − 32.133 GDPGR + 21.78 IMPEXP − 1.311 INFLN - 0.385 EPC + 5.72e-10 COMPE + 21.558 IMP + 287.66 NRES − 423.25 POLSTB + 1.573 EXCHRT + 1267.85 CORUPC + 10.488 LENDIR + ε_{it}

Beta values express that FDI outflows are positively and significantly related to independent variables viz. Economy size (GDP) and Labour cost (Compensation) at 1 % level of significance since the p-value is less than 0.01, Natural resources at 5 % level of significance since the p-value is less than 0.05 and Corruption control at 10 % level of significance since the p-value is less than 0.10. However, other variables like GDP growth, Trade openness, Inflation, Infrastructure Development (EPC), Imports, Political stability, Exchange rate and Cost of capital (Lending interest rate) are not statistically significant.

C) Random Effect Model:

Table 8.12: Random Effect Model showing Determinants of FDI Outflows from Non-Oil-exporting Developing Nations

Variables	*Coef*	*S. E.*	*t-r*	*p-v*
const	-2036.4	566.9	-3.5921	0.0004 ***
GDP	1.84E-08	5.15E-10	35.6522	2.2e-16 ***
GDPGR	-43.613	36.516	-1.1943	0.233144
IMPEXP	8.2064	41.251	0.1989	0.842426
INFLN	-0.2035	2.9118	-0.0699	0.9443
EPC	-0.3134	0.11464	-2.734	0.0066 **
COMPE	4.74E-10	1.27E-10	3.7191	0.0002 ***
IMP	29.101	36.443	0.7985	0.425097
NRES	314.15	69.421	4.5254	8.23e-06 ***
POLSTB	65.314	271.84	0.2403	0.810261
EXCHRT	-0.9521	0.28858	-3.2993	0.0011 **
CORUPC	975.97	265.78	3.6721	0.0003 ***
LENDIR	8.2885	8.7303	0.9494	0.343064
R^2	0.83683			
Adj. R^2	0.83133			
ANOVA	F(12,356) = 152.151, p-v = 2.22e-16 i.e. 0.00			

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 8.12 shows one of the panel data regression models, i.e. Random Effect Model. Random Effect Model reflects value of R^2 as 0.8368 which implies that 83.68 % of the total variation in FDI outflows from non-oil exporting developing nations is due to Economy size (GDP), GDP growth, Trade openness, Inflation, Infrastructure Development (EPC), Labour cost, Imports, Natural Resources, Political stability, Exchange rate, Corruption control and Lending interest rate whereas remaining 16.32 % is due to other factors. The variable 'Export' is excluded from the analysis due to exact multicollinearity. Adjusted R^2 0.8313 implies that independent variables in the model account for 83.13 % variance in the dependent variable, i.e. FDI outflows. The

difference between R^2 and Adjusted R^2 is small (0.005), which indicates that sample size (n = 27 nations, t = 20 years, No. of observations = 540) is adequate for defining independent variables under study. ANOVA tests the goodness of fit of the model. F statistics 152.15 and significance or p-value 2.22e-16, i.e. 0.00 < 0.05 indicates that the model is fit and the null hypothesis 'There is no significant relationship between FDI outflows from non-oil exporting developing nations and its determinants' is rejected and alternate hypothesis, 'There is a significant relationship between FDI outflows from non-oil exporting developing nations and its determinants' is accepted. Thus, it is concluded that at least one independent variable is a significant predictor of FDI outflows from non-oil exporting developing nations.

Hence, the Regression Model under the Fixed Effect Model is seen as:

FDI Outflows (Y) = - 2036.40 + 1.84e-8 GDP – 43.613 GDPGR + 8.206 IMPEXP – 0.203 INFLN - 0.313 EPC + 4.74e-10 COMPE + 29.101 IMP + 314.15 NRES + 65.314 POLSTB - 0.952 EXCHRT + 975.97 CORUPC + 8.288 LENDIR + ϵ_{it}

Beta values express that FDI outflows are positively and significantly related to independent variables viz. Economy size (GDP), Labour cost (Compensation), Natural resources and Corruption control at 1 % level of significance since the p-value is less than 0.01. Whereas FDI outflows are negatively and significantly related to Infrastructure Development (EPC) and Exchange rate at 5 % level of significance. However, other variables like GDP growth, Trade openness, Inflation, Imports, Political stability and Cost of capital (Lending interest rate) are not statistically significant.

D) Model Comparison:

This sub section of the chapter compares three regression models, i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model as shown in Table 8.13.

Table 8.13: Comparison of Regression Models showing Determinants of FDI Outflows from Non-Oil-exporting Developing Nations

Variables	Pooled OLS Model				Fixed Effect Model				Random Effect Model			
	Coef	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*t-r*	*p-v*	*Coef*	*S. E.*	*Z*	*p-v*
const	-2047.5	5.69E+02	-3.5955	0.0004 ***	−3024.25	1153.99	−2.621	0.0092 ***	-2036.4	566.9	-3.5921	0.0004 ***
GDP	1.839E-08	5.18E-10	35.486	2.2e-16 ***	**2.06E-08**	9.04E-10	22.77	**4.37e-070 *****	1.84E-08	5.15E-10	35.6522	2.2e-16 ***
GDPGR	-43.69	36.535	-1.1958	0.2325	−32.1339	39.3644	−0.816	0.4149	-43.613	36.516	-1.1943	0.233144
IMPEXP	8.3824	41.416	0.2024	0.8397	21.7801	57.857	0.3764	0.7068	8.2064	41.251	0.1989	0.842426
INFLN	-0.2237	2.9108	-0.0769	0.9387	−1.3114	2.90197	−0.4519	0.6516	-0.2035	2.9118	-0.0699	0.9443
EPC	-0.31335	0.11555	-2.7119	0.0070 **	−0.3858	0.43691	−0.8831	0.3778	-0.3134	0.11464	-2.734	0.0066 **
COMPE	4.7245E-10	1.27E-10	3.7103	0.0002 ***	**5.72E-10**	1.68E-10	3.399	**0.0008***	4.74E-10	1.27E-10	3.7191	0.0002 ***
IMP	29.146	36.602	0.7963	0.4264	21.5587	54.1252	0.3983	0.6907	29.101	36.443	0.7985	0.425097
NRES	314	69.809	4.498	9.29e-06 ***	**287.66**	121.637	2.365	**0.0186**	314.15	69.421	4.5254	8.23e-06 ***
POLSTB	63.33	273.08	0.2319	0.8167	−423.252	461.99	−0.9162	0.3602	65.314	271.84	0.2403	0.810261
EXCHRT	-0.9495	0.28917	-3.2839	0.0011**	1.57386	1.24932	1.26	0.2086	-0.9521	0.28858	-3.2993	0.0011 **
CORUPC	977.74	267.51	3.655	0.0003 ***	**1267.85**	775.379	1.635	**0.1003***	975.97	265.78	3.6721	0.0003 ***
LENDIR	8.3293	8.7313	0.954	0.3407	10.4884	9.02224	1.163	0.2459	8.2885	8.7303	0.9494	0.343064

R^2	0.8351	**0.67391**	0.83683
Adj. R^2	0.82954	**0.64286**	0.83133
ANOVA	F (12,356) = 150.23, p-v = 3.1e-131i.e. 0.00	**F(12,336) = 57.866, p-v = 1.0e-118 i.e. 0.00**	F(12,356) = 152.15, p-v = 2.22e-16 i.e. 0.00
Model Comparison Test			
Test			**Appropriate Model**
F Test	F(20, 336) = 1.69249, p-v = 0.0328676 < 0.05		Fixed Effect Model
LM Test	Chi-square (1) = 0.033116 with p-value = 0.8556 > 0.05		Pooled OLS Model
Hausman Test	**Chi-square (12) = 25.193 with p-value = 0.0139342 < 0.05**		**Fixed Effect Model**

Source: Author's Compilation.

*** Significant at 1 % level, ** Significant at 5 % level, * Significant at 10 % level.

Table 8.13 shows the Panel data regression models viz. Pooled OLS Model, Fixed Effect Model and Random Effect Model and their comparison determine the statistically significant factors which influence the flow of FDI out of non-oil-exporting developing nations.

First, Pooled OLS Model is compared with Fixed Effect Model. The fixed effect is tested by the F Test. F Test compares the fixed effect model and OLS to see how much fixed effect model can improve the goodness of fit. Table 8.13 shows that F Test value is 1.69 and significance or p-value is 0.032, which is less than 0.05. This indicates that null hypothesis "There is no significant fixed effect in the panel data" is rejected and alternate hypothesis is accepted i.e. there is a significant fixed effect in the panel data. Therefore, it is concluded that the fixed effect model is better than the pooled OLS model.

Second, Pooled OLS Model is compared with Random Effect Model. A random effect is tested by Breusch-Pagan's Lagrange Multiplier (LM) Test. The LM statistics follow the chi-squared distribution with one degree of freedom. LM test contrasts a random effect model with OLS to see whether random effect model can deal with heterogeneity better than pooled OLS. Table 8.13 shows that chi-square value is 0.03 and significance or p-value is 0.85 which is more than 0.05, this indicates that null hypothesis "There is no significant random effect in the panel data" is accepted. Therefore it is concluded that the pooled OLS model is better than the random effect model.

Thirdly, to know which model is more relevant, the Hausman specification test (Hausman Test) is used under the null hypothesis, "Random Effect Model is appropriate".

Table 8.6 shows that under Hausman Test, chi-square value is 25.193 and significance or p-value is 0.013, which is less than 0.05, this indicates that null hypothesis, "Random Effect Model is not appropriate" is rejected. Therefore it is concluded that the fixed effect model is more appropriate than Random effect model.

The individual effects under the Fixed Effect model are shown in Table 8.14

Table 8.14: Individual Effects of Non-Oil-exporting Developing Nations on FDI Outflows (FE Model)

Nations	Estimate	Std. Error	t-value	P Value
Bulgaria	-1229.63	2062.03	-0.5963	0.551365
Chile	-3412.65	1964	-1.7376	**0.083197***
Costa Rica	-3984.8	1420.14	-2.8059	**0.005310 *****
Croatia	-1314.25	1601.43	-0.8207	0.412414
Dominican Republic	-1369.06	1167.49	-1.1726	0.241769
Honduras	-2673.21	1579.64	-1.6923	**0.091518***
Hungary	-3122.48	1985.25	-1.5728	0.116696
India	-5841.19	1240.25	-4.7097	**3.636e-06 *****
Jamaica	-2053.24	1354.81	-1.5155	0.130581
Jordan	-3010.87	1583.74	-1.9011	**0.058143***
Kenya	-2306.86	1253.89	-1.8398	**0.066684***
Latvia	-1806.4	1523.05	-1.186	0.236443
Mauritius	-2188.53	1552.9	-1.4093	0.159667
Morocco	-2003.1	970.62	-2.0637	**0.039811 ****
Namibia	-2360.77	1318.85	-1.79	**0.074350***
Panama	-986.82	1847.49	-0.5341	0.593598
Paraguay	-15691.8	6863.43	-2.2863	**0.022859 ***
South Africa	-3348.83	1919.35	-1.7448	**0.081939***
Sri Lanka	-2716.15	1031.07	-2.6343	**0.008821 ****
Ukraine	-2938.11	1897.33	-1.5486	0.12243
Zimbabwe	-1923.15	1890.91	-1.017	0.309863

Source: Author's Compilation.

*** Significant at 1 % level,** Significant at 5 % level,*Significant at 10 % level.

Table 8.14 depicts that Individual effects of total 11 non-oil exporting developing nations is significant out of which individual effects of only two non-oil exporting developing nations, i.e. India and Costa Rica is significant at 1 % level, two non-oil exporting developing nations, i.e. Morocco and Sri Lanka are significant at 5 % level and seven non-oil-exporting developing nations, i.e. Chile, Honduras, Jordan, Kenya,

Namibia Paraguay and South Africa are significant at 10 % level whereas the individual effects of remaining non-oil exporting developing nations is not significant.

Table 8.13 proved that the Fixed Effect model is the best regression model. Four independent variables i.e. Economy size (GDP), Labour cost, Natural resources, and Corruption control are positively significant, and all other variables, i.e. GDP growth, Trade openness, Inflation, Infrastructure development, Imports, Political stability, Exchange rate and Lending interest rate are not statistically significant.

Further, Table 8.13 explains that other things remaining constant increase in GDP by 1 $ have a marginal increase in FDI outflows i.e. 0.02 Million $, increase in Labour cost by 1 LCU have marginal rise in FDI outflows by 0.0005 Million $, increase in savings of natural resources by 1 % leads to increase in FDI outflows by 287.66 Million $ and increase in Corruption control by 1 unit leads to increase in the flow of FDI out of non-oil-exporting developing nation by 1267.85 million $.

Figure 8 B highlights that Economy size (GDP), Labour cost, Natural Resources, and Corruption control are the factors which determine the flow of FDI out of non-oil-exporting developing nations.

Figure 8 B: Determinants of FDI Outflows from Non-Oil-exporting Developing Nations
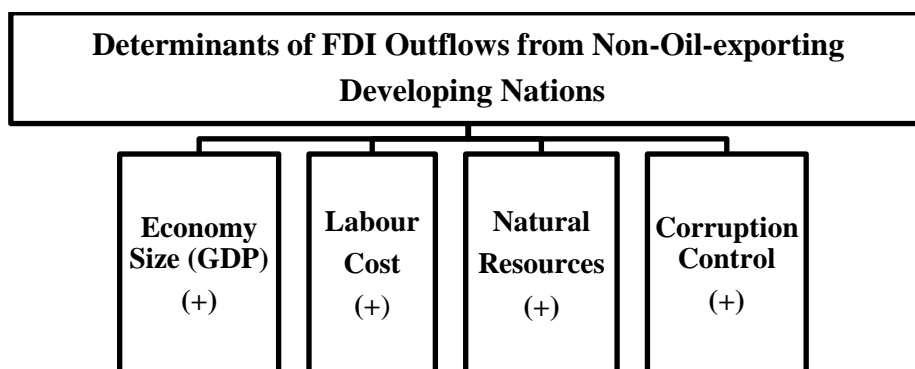
Source: Author's compilation from Table 8.13.

At the end of this chapter, the fifth objective of the study is fulfilled, i.e. to explore the factors influencing FDI outflows from Oil-exporting and Non-Oil exporting Developing Nations. The analysis evidenced that only five out of thirteen factors are significant but only three factors push the FDI out of oil-exporting developing

nations. These socio-economic factors are Economy size measured by Gross Domestic Product, Infrastructure development measured by Electric Power Consumption and Trade openness measured by Imports and Exports as a percentage of GDP. On the other hand Imports and Exports of goods and services express inverse relation with FDI outflow. Whereas four determinants of non-oil exporting developing nations supporting FDI outflows are Economy size measured by Gross Domestic Product, Labour cost measured by Compensation of employees, Savings of Natural resources and Corruption control.

Chapter IX

Comparison of Determinants of FDI Inflows and Outflows of Developing Nations

This chapter is based on the sixth objective of the study, i.e to compare the determinants of FDI inflows and FDI outflows of developing nations. The sections in this chapter compare the determinants of the flow of FDI to developing nations and flow of FDI from developing nations. Comparison is also made among all developing nations, oil-exporting developing nations and non-oil-exporting developing nations covered under the study. This comparison helps to identify the factors influencing the flow of FDI to and FDI from developing nations. It further helps to know the significant common factors having an impact on the flow of FDI into and out of developing nations.

9.1 Comparison of Determinants of FDI Inflows to Developing Nations

This sub section compares the factors influencing FDI inflows of developing nations, oil-exporting developing nations and non-oil-exporting developing nations and extracts the common factors and non-common factors.

Figure 9 A: Comparison of Determinants of FDI Inflows to Developing Nations
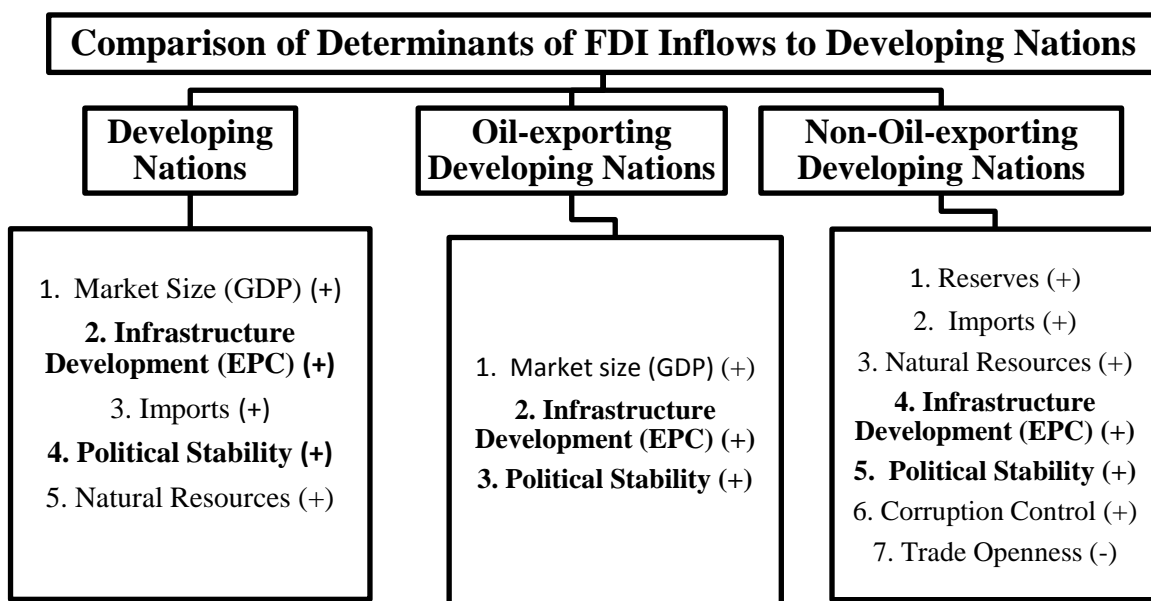
Source: Figure 5 A, 6 A and 6 B

Figure 9 A exhibits the comparison of determinants influencing FDI inflows to developing nations, oil-exporting developing nations and non-oil-exporting developing nations. It also displays that Infrastructure development (EPC) and Political stability are the two common factors having a positive impact on the flow of FDI to all three categories of nations, i.e. developing nations, oil-exporting developing nations and non-oil exporting developing nations. Market size measured by GDP is the one more common factor having a positive impact on the flow of FDI to developing nations and oil-exporting developing nations. Imports and Natural Resources are the two common factors that are having a positive impact on the flow of FDI to developing nations and non-oil-exporting developing nations. Reserves and Corruption control are the two additional factors having a positive impact but Trade openness have a negative impact on the flow of FDI to non-oil exporting developing nations only.

9.2 Comparison of Determinants of FDI Outflows from Developing Nations

This sub section compares the factors affecting the FDI outflows of developing nations, oil-exporting developing nations and non-oil exporting developing nations and selects the common factors and non-common factors.

Figure 9 B: Comparison of Determinants of FDI Outflows from Developing Nations
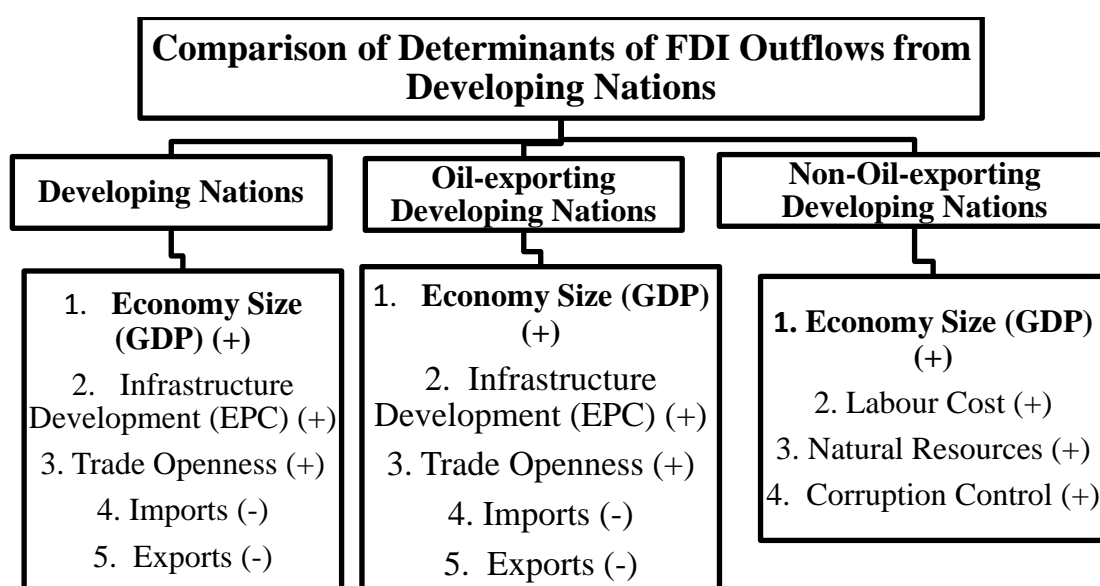
Source: 7 A, 8A and 8 B

Figure 9 B exhibits the comparison of determinants of FDI outflows from developing nations, oil-exporting developing nations and non-oil-exporting developing nations. It also shows that Economy size measured by GDP is the only common factor having a positive impact on the flow of FDI from all three categories, i.e. developing nations, oil-exporting developing nations and non-oil exporting developing nations. Infrastructural development measured by EPC and Trade openness are the two factors having a positive impact and Imports and Exports are the two factors having a negative impact on the flow of FDI out of developing nations. Natural resources, Labour cost and Corruption control are the three factors positively influencing the flow of FDI out of non-oil-exporting developing nations only.

9.3 Comparison of Determinants of FDI Inflows and Outflows of Developing Nations:

This sub section compares the determinants of FDI inflows and FDI outflows of developing nations and finds the common factors and non-common factors.

Figure 9 C: Comparison of Determinants of FDI Inflows and Outflows of Developing Nations
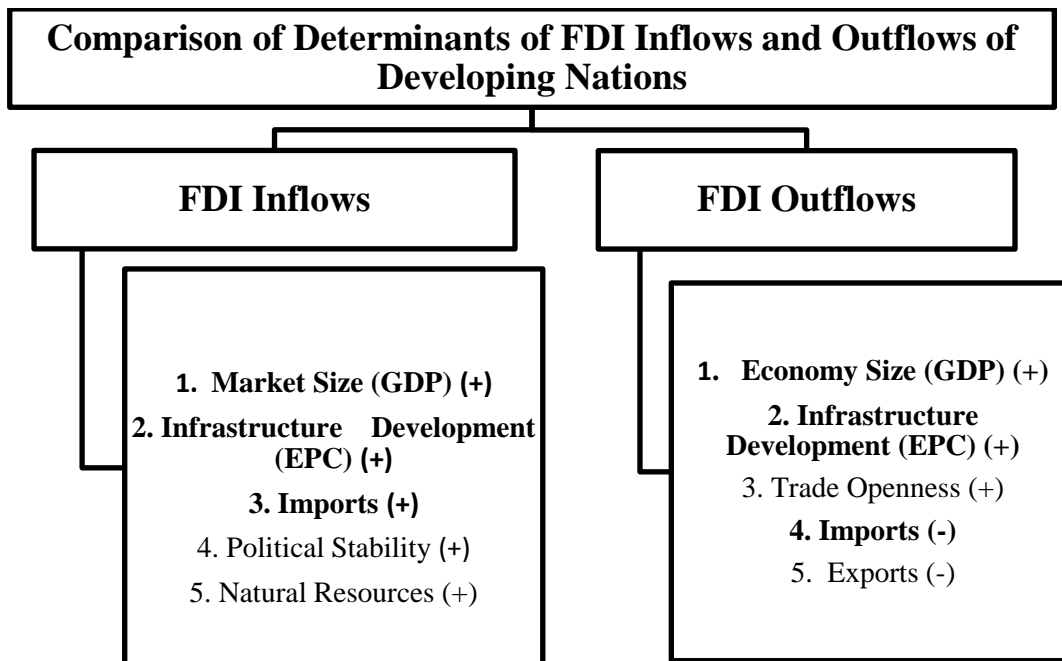
Source: Figure 5A and 7 A.

Figure 9 C displays the comparison of factors determining FDI inflows and outflows of developing nations. It also evidences that Market size or economy size measured by GDP and Infrastructural development measured by EPC are the common factors having a positive impact on FDI inflows and outflows of developing nations. Import of goods and services is also common factor but influence positively in the case of inflows and negatively in the case of outflows of developing nations. Political stability and Natural Resources are the two additional factors that positively influence the FDI inflows of developing nation. Export shows a positive impact but Trade openness negatively affects the FDI outflows of developing nations.

9.4 Comparison of Determinants of FDI Inflows and Outflows of Oil-exporting Developing Nations.

This sub section compares the determinants of FDI inflows and FDI outflows of oil-exporting developing nations and extracts the common factors and non-common factors.

Figure 9 D: Comparison of Determinants of FDI Inflows and Outflows of Oil-exporting Developing Nations
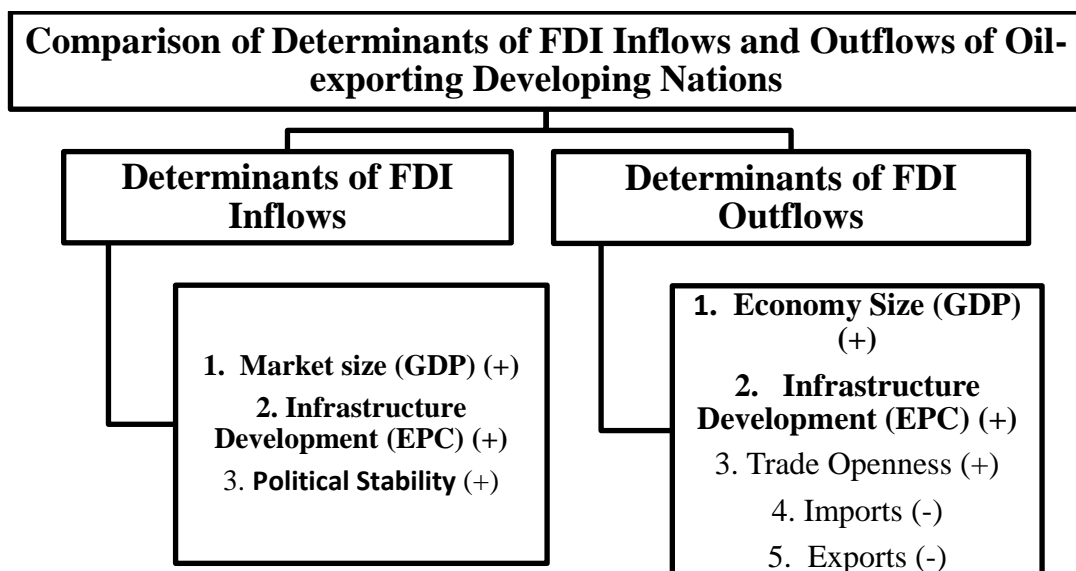

Source: Figure 5 A and 7 A.

Figure 9 D shows the comparison of factors determining the flow of FDI into and FDI out of oil-exporting developing nations. It also proves that Market size/Economy size (GDP) and Infrastructural development (EPC) are two common factors having a

positive influence on the flow of FDI into and FDI from oil-exporting developing nations. Political stability is one more factor that positively influences FDI inflows. However, as far as FDI outflows of oil-exporting developing nations is concerned Trade openness influences positively but Imports and Exports affect negatively.

9.5 Comparison of Determinants of FDI Inflows and Outflows of Non-Oil-exporting Developing Nations.

This sub section compares the determinants of FDI inflows and FDI outflows of non-oil-exporting developing nations and explores the common and non-common factors.

Figure 9 E: Comparison of Determinants of FDI Inflows and Outflows of Non-Oil-exporting Developing Nations.
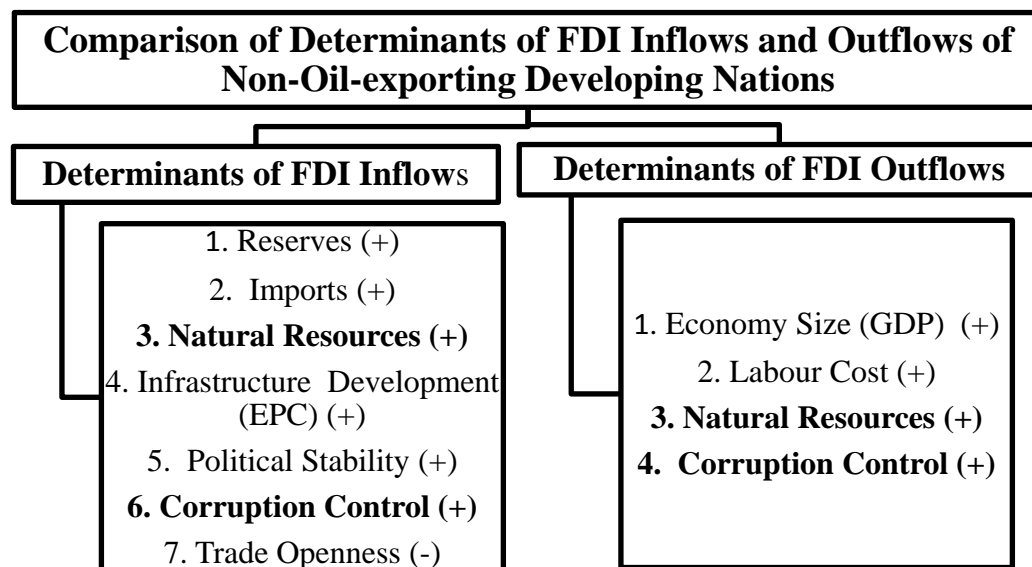
Source: Figure 6 B and 8 B.

Figure 9 E shows the comparison of determinants of the flow of FDI into and out of non-oil-exporting developing nations. It confirms that availability or savings of Natural Resources and Corruption control are the two common factors affecting the flow of FDI into and FDI from non-oil-exporting developing nations. Reserves, Imports, Political stability and Infrastructure development (EPC) are the four additional factors that positively influence the flow of FDI in non-oil exporting developing nations, whereas Trade openness influences negatively. Economy size measured by GDP and Labour cost measured by compensation of employees are two additional factors affecting the flow of FDI out of non-oil exporting developing nations.

Chapter X

Discussion, Findings and Conclusion

This study explores the trend and growth of FDI inflows to and FDI outflows from developing nations. The study also made an attempt to identify the factors that determine FDI inflows to developing nations, oil-exporting developing nations and non-oil exporting developing nations. These factors include: Market size (GDP), Market growth (GDP Growth Rate), Trade openness (Imports and Exports as a percentage of GDP), External Debt (as a percentage of Exports), Inflation (Consumer Price Index (CPI), Infrastructure Development (Electric Power Consumption (EPC), Reserves, Labour cost (Compensation of Employees), Imports, Natural Resources, Political Stability, Exchange Rate and Corruption Control

The study also explores the factors affecting FDI outflows from developing nations, oil-exporting developing nations and non-oil exporting developing nations. These factors include: Economy size (GDP), Economic Growth (GDP Growth Rate), Trade openness (Imports and Exports as a percentage of GDP), Inflation (Consumer Price Index (CPI), Infrastructure Development (Electric Power Consumption (EPC), Labour cost (Compensation of Employees), Imports, Natural Resources, Political Stability, Exchange Rate, Corruption Control, Exports and Cost of capital (Lending Interest Rate).

The objectives covered in this study are:

1. To study the Trend and Growth of FDI inflows into and FDI outflows from Developing Nations.
2. To identify the factors that determine FDI inflows to Developing Nations.
3. To identify the factors that determine FDI inflows to Oil-exporting and Non-oil-exporting Developing Nations
4. To explore the factors influencing FDI outflows from Developing Nations.
5. To explore the factors influencing FDI outflows from Oil-exporting and Non-oil-exporting Developing Nations.
6. To compare the determinants of FDI inflows and FDI outflows of developing nations

Based on these objectives the findings are as below:

10.1 Findings of the study:

The objective wise findings of the study are described in the following pages.

10.1.1 Findings on Trend and Growth of FDI Inflows to developing nations:

The Trend and Growth of FDI inflow have been studied for 153 developing nations covering the period 1970 to 2016. The trends of FDI inflows, growth, annual growth rate, Average Annual Growth Rate (AAGR) and Compound Annual Growth Rate (CAGR) have been calculated and displayed using tables, graphs and descriptive statistics. Its findings are as below.

✧ With regards to performance, FDI inflows of developing nations for the period 1970 to 2016 is 2,17,448.9 USD millions on an average, the minimum FDI inflow is 3,224.96 USD millions in the year 1970 and maximum is 7,74,803.3 USD millions in the year 2015.

✧ FDI inflows of developing nations show an increasing trend from the year 1970 till 2016 with few ups and downs in between. From 1970 till 2000 it was absolutely increasing i.e. 2,54,239 USD millions but in the year 2002 decreased to 1,79,478 USD millions may be due to 1998 - 2002 Argentine Great Depression or early 2000s recession of developed nations or 2002 stock market crash across the United States, Canada, Asia, and Europe. Again, it declined to 5,27,366 USD millions in 2009, may be due to the Great Recession, observed in world markets during the early 2010s and was related to the financial crisis of 2007–08 and U.S. subprime mortgage crisis of 2007–09. Again, the FDI inflows decreased in 2016, i.e. 6,86,396 USD millions. FDI inflow to developing nations was highest in the year 2015 at 7,74,803 USD millions.

✧ The growth of FDI inflows to developing nations over the previous year was positive every year till 1982, later it was negative in the year 1983, i.e. 8,348 USD millions, then in the year 1998, 2001, 2002, 2009, 2012 and in 2016, it was 88,407 USD millions. The growth was highly positive in the year 2007, i.e. 1,57,963 USD millions, and it heavily declined in the year

2009, i.e. 2,13,800 USD millions. The growth declined over 1998-2002 may be due to the the 1998–2002 Argentine Great Depression or early 2000s recession or 2002 stock market crash. Further, the growth decreased in 2009 and 2012 may be due to the 2007-2009 US based Great Recession.

✧ The Growth Rates of FDI inflow of developing nations over the previous years was positive till 1974. It was negative in the year 1975 (i.e. 13.25%), in 1976, 1983, 1986, 1998, 2001, 2002 i.e. 19.87%, in 2009 i.e. 28.85%, in 2012 i.e. 4.75% and in 2016, it was 11.41%. The growth rate was lowest in the year 2009 (28.85%). It was very high in the year 1974, i.e. 91.81%. The growth rate was negative over 1998 -2002 may be due to the 1998–2002 Argentine Great Depression or early 2000s recession or 2002 stock market crash. The growth rate of FDI inflows of developing nations was lower in 2009 and 2012 may be due to the 2007-2009 US-based Great Recession.

✧ The Average Annual Growth Rates (AAGR) of FDI inflows of developing nations for 21 years from 1970 to 1990 was 14.47%, for next 26 years from 1991 to 2016 it was nearly equal, i.e. 14.69 %. The combine average growth rate for a total of 47 years from 1970 to 2016 was 14.58 %. It is a good sign that the AAGR of FDI inflows of developing nations is positive.

✧ The Compound Annual Growth Rate (CAGR) of FDI inflows of developing nations over a period of 47 years is 13.79 %.

10.1.2 Findings on Trend and Growth of FDI outflows from developing nations:

The Trend and Growth of FDI outflow have been studied for 136 developing nations covering the period 1970 to 2016. The trends of FDI outflows, growth, annual growth rate, Average Annual Growth Rate (AAGR) and Compound Annual Growth Rate (CAGR) have been calculated and displayed using tables, graphs and descriptive statistics. Its findings are as below.

✧ With regards to performance, FDI outflows from developing nations for the period 1970 to 2016 is 1,13,509.1 USD millions on an average, the minimum FDI outflows are 39.68 USD millions whereas maximum is 5,96,256.2 USD millions.

✧ FDI outflows from developing nations show an increasing trend for the period 1970-2016 with few ups and downs in between. It was continuously increasing from 1970 till 1997, i.e. 58,061 USD millions but decreased in 1998, 2001 and 2002. The decline of 1998 - 2002 may be due to the 1998–2002 Argentine Great Depression or early 2000s recession or 2002 stock market crash. Again, the FDI outflows started increasing till 2008, i.e. 3,49,016 USD millions and decline in 2009, 2010, 2011. The decrease from 2009 to 2011 may be due to the 2007-2009 US - based Great Recession. It was further decreased to 4,12,072 USD millions in 2015. It was highest in 2012 at 5,96,256 USD millions.

✧ The growth of FDI outflows from developing nations over the previous year was at one pace and there was no major negative growth till 1987, but it was very much negative in the year 1998, i.e. 13,364 USD millions, then in the year 2001, 2009, 2013 and 2015. The growth was heavily declined in 2009 (69,455 USD millions). The growth was reduced in 1998 and 2001 may be due to the 1998–2002 Argentine Great Depression or early 2000s recession or 2002 stock market crash. The decline of 2009 may be due to the 2007-2009 US-based Great Recession. The growth was highly positive in 2012, i.e. 1,85,528 USD millions.

✧ The Growth Rates of FDI outflow from developing nations over the previous years was positive from 1970 till 1978. It was negative in the year 1979 i.e. 7.51%, 1981, 1983, 1984, 1990, 1998, 2001, 2002, 2009, 2013 and in 2015, it was 21.74%. The growth rate was lowest in the year 1998 (23.02%). The growth rate was negative during 1998, 2001 and 2002 may be due to the 1998–2002 Argentine Great Depression or early 2000s recession or 2002 stock market crash. It was lower in 2009 and 2013 may be due to the 2007-2009 US based Great Recession. Growth Rate was very high in the year 1980, i.e. 345.71%.

✧ The Average Annual Growth Rate (AAGR) of FDI Outflows from Developing Nations for the period 1970 to 1990, i.e. 21 years results into 40.99% whereas for the period 1991 to 2016, i.e. 26 years is 25.15%. The overall AAGR for the period 1970 to 2016, i.e. 47 years is 33.07%. Thus

AAGR during the period 1991-2016 is lower by 15% as compared to 1970-1990 and lower by 8% as compared to 1970-2016.

✧ The Compound Annual Growth Rate (CAGR) of FDI Outflows from Developing Nations over a period of 47 years is 22.72%.

10.1.3 Findings on Determinants of FDI inflows to Developing Nations:

The determinants of FDI inflows have been studied for 92 developing nations covering the period 1996 to 2015. Panel data regression models, i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model, are used to find the determinants of FDI inflows to developing nations. Its findings are as below.

✧ As per OLS model, FDI inflows to developing nations are positively and significantly related to Market size (GDP), Economic growth (GDP growth), Trade openness, External debts, Infrastructure Development (EPC) and Corruption control whereas it is significantly but negatively related to Imports of developing nations.

✧ According to the Fixed Effect model, FDI inflows to developing nations are positively and significantly related to Market size (GDP), Infrastructure Development (EPC), Imports, Savings in Natural Resources and Political stability.

✧ Random Effect Model shows that FDI inflows to developing nations are positively and significantly related to Market size (GDP), Economic growth (GDP growth), Trade openness, External debts, Infrastructure Development (EPC) and Corruption control, but it is negatively related to Imports of developing nations.

✧ After comparing OLS, Fixed Effect and Random Effect Models with the help of F Test, LM Test and Hausman Test, it is concluded that the fixed effect model is more appropriate and the best regression model.

✧ Individual or country effects under fixed effect model are significant in 33 developing nations.

✧ Finally, five factors i.e. Market size (GDP), Infrastructure Development (EPC), Imports of Goods and Services, Natural Resources and Political

stability creates a positive impact on the flow of FDI to developing nations.

✧ Other things remaining constant, increase in GDP by 1 $ estimates to increase FDI inflows by 0.01 $, increase in EPC by 1 Kwh per capita increases FDI by 2.58 Million $, increase in Imports by 1 % leads to rise in FDI by 102.71 Million $, increase in savings of Natural resources by 1 % increases FDI by 148.61 Million $ and increase in Political stability index by 1 unit estimates to increase FDI inflows of developing nations by 1,359.49 Million $.

10.1.4 Findings on Determinants of FDI inflows to Oil-exporting Developing Nations:

The determinants of FDI inflows to oil-exporting developing nations have been studied for 44 developing nations covering the period 1996 to 2015. Panel data regression models, i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model, are used to determine the factors influencing the flow of FDI to oil-exporting developing nations. Its findings are as below.

✧ As per OLS model, FDI inflows to oil-exporting developing nations are positively and significantly influenced by Market size (GDP), Market growth (GDP growth), Infrastructure Development (EPC), Savings in Natural Resources and Corruption control.

✧ According to the Fixed Effect model, FDI inflows to oil-exporting developing nations are positively and significantly influenced by Market size (GDP), Infrastructure Development (EPC) and Political stability.

✧ Random Effect Model shows that FDI inflows are positively and significantly related to Market size (GDP), Market growth (GDP growth), Infrastructure Development (EPC) and Corruption control.

✧ After comparing OLS, Fixed Effect and Random Effect Models with the help of F Test, LM Test and Hausman Test, it is concluded that the Fixed Effect Model is more appropriate and the best regression model.

✧ Individual or country effects under fixed effect model are significant in 14 oil-exporting developing nations.

✧ Finally, three factors, i.e. Market size (GDP), Infrastructure Development (EPC) and Political stability create a positive impact on the flow of FDI to oil-exporting developing nations.

✧ Other things remaining constant, increase in GDP by 1 $ leads to a marginal increase in FDI inflows by 0.01 $, increase in EPC by 1 Kwh per capita increases FDI by 3.67 Million $ and increase in Political stability index by one unit leads to increase in FDI inflows of oil-exporting developing nations by 2,048.54 Million $.

10.1.5 Findings on Determinants of FDI inflows to Non-Oil exporting Developing Nations:

The determinants of FDI inflows to non-oil-exporting developing nations have been studied for 48 developing nations covering the period 1996 to 2015. Panel data regression models, i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model, are used to determine the factors influencing the flow of FDI to non-oil-exporting developing nations. Its findings are as below.

✧ As per OLS model, FDI inflows to non-oilexporting developing nations are positively and significantly influenced by Infrastructure Development (EPC), Reserves and availability of Natural Resources.

✧ According to the Fixed Effect model, FDI inflows to non-oil exporting developing nations are positively and significantly influenced by Infrastructure Development (EPC), Reserves, Imports, Natural Resources, Political stability and Corruption control whereas Trade openness affects FDI inflows negatively.

✧ Random Effect Model shows that FDI inflows are positively and significantly influenced by Infrastructure Development (EPC), Reserves, Imports and Savings of Natural Resources of non-oil exporting developing nations, whereas Trade openness affects FDI negatively.

✧ After comparing OLS, Fixed Effect and Random Effect Models with the help of F Test, LM Test and Hausman Test, it is concluded that the Fixed Effect Model is more appropriate and the best regression model.

✧ Individual or country effects under fixed effect model are significant in 7 non-oil exporting developing nations, i.e. Costa Rica, Ghana, India, Macedonia, Mauritius, Pakistan and South Africa.

✧ Finally, six factors, i.e. Infrastructure Development (EPC), Reserves, Imports, Natural Resources, Political stability and Corruption control have positive impact on FDI inflows whereas Trade openness has negative impact on the flow of FDI to non-oil exporting developing nations.

✧ Other things remaining constant,increase in EPC by 1 Kwh per capita increases FDI by 0.78 Million $, increase in Reserves by 1 $ leads to marginal increase in FDI inflows by 0.11 $, increase in Imports of goods by 1 % increases FDI by 105.49 Million $, increase in savings of Natural Resources by 1 % leads to increase in FDI by 255.83 Million $, increase in Political stability index by 1 unit, raises FDI by 788.88 Million $ and increase in control of Corruption by 1 unit increases FDI by 2234.59 Million $ whereas increase in Trade openness (Imports and Exports) by 1 % leads to decrease in FDI inflows of non-oil-exporting developing nations by 116 Million $.

10.1.6 Findings on Determinants of FDI outflows from Developing Nations:

The determinants of FDI outflows from developing nations have been studied for 56 developing nations covering the period from 1996 to 2015. Panel data regression models i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model are used to find out the factors determining the flow of FDI out of developing nations. Its findings are as below.

✧ As per the OLS model, FDI outflows from developing nations is positively and significantly influenced by Economy size (GDP) and Trade openness, whereas Imports of goods and services affects FDI outflows negatively.

✧ According to the Fixed Effect model, FDI outflows from developing nations are positively and significantly influenced by Economy size (GDP), Trade openness and Infrastructure Development (EPC) and whereas Imports and Exports of goods and services affect FDI outflows negatively.

✧ Random Effect Model shows that FDI outflows are positively and significantly influenced by Economy size (GDP), Trade openness, whereas Imports of goods and services affects FDI negatively.

✧ After comparing OLS, Fixed Effect and Random Effect Models with the help of F Test, LM Test and Hausman Test, it is concluded that the Fixed Effect Model is more appropriate and the best regression model.

✧ Individual or country effects under fixed effect model are significant in 18 developing nations.

✧ Finally three factors, i.e. Economy size (GDP), Trade openness and Infrastructure Development (EPC) have a positive impact on FDI outflows whereas Imports and Exports of goods and services have a negative impact on the flow of FDI out of developing nations.

✧ Other things remaining constant, increase in GDP by 1 $ have a marginal increase in FDI outflows, i.e. 0.01$, increase in Trade openness by 1 % leads to increase in FDI outflows by 1333.84 Million $, increase in EPC by 1 Kwh per capita increases FDI outflows by 2.27 Million $ whereas the increase in imports by 1 % decreases FDI outflows by 667.30 Million $ and increase in exports by 1 % also decreases FDI outflows of developing nations by 621.86 Million $.

10.1.7 Findings on Determinants of FDI outflows from Oil-exporting Developing Nations:

The determinants of FDI outflows from oil-exporting developing nations have been studied for 29 developing nations covering the period 1996 to 2015. Panel data regression models i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model are used to find out the factors determining the flow of FDI out of oil-exporting developing nations. Its findings are as below.

✧ As per the OLS model, FDI outflows from oil-exporting developing nations is positively and significantly influenced by Economy size (GDP) and Trade openness, whereas Imports of goods and services affects FDI outflows negatively.

◇ According to the Fixed Effect model, FDI outflows from oil-exporting developing nations are positively and significantly influenced by Economy size (GDP), Trade openness and Infrastructure Development (EPC) whereas Imports and Exports of goods and services affect FDI outflows negatively.

◇ Random Effect Model shows that FDI outflows from oil-exporting developing nations are positively and significantly influenced by Economy size (GDP) and Trade openness.

◇ After comparing OLS, Fixed Effect and Random Effect Models with the help of F Test, LM Test and Hausman Test, it is concluded that the Fixed Effect Model is more appropriate and the best regression model.

◇ Individual or country effects under the Fixed Effect Model are significant in 7 oil-exporting developing nations, i.e. Bahrain, Brazil, Colombia, Kuwait, Mexico, Qatar and Venezuela.

◇ Finally, three factors, i.e. Economy size (GDP), Trade openness and Infrastructure Development (EPC) has positive impact whereas Imports and Exports of goods and services have a negative impact on the flow of FDI out of oil-exporting developing nations.

◇ Other things remaining constant increase in GDP by 1 $ have a marginal increase in FDI outflows, i.e. 0.01 $, increase in Trade openness by 1 % leads to increase in FDI outflows by 1323.59 Million $, increase in EPC by 1 Kwh per capita increases FDI outflows by 2.97 Million $ whereas increase in imports by 1 % decreases FDI outflows by 688.72 Million $ and increase in exports by 1 % also decreases FDI outflows of oil-exporting developing nations by 562.88 Million $.

10.1.8 Findings on Determinants of FDI outflows from Non-Oil-exporting Developing Nations:

The determinants of FDI outflows from non-oil-exporting developing nations have been studied for 27 developing nations covering the period from 1996 to 2015. Panel data regression models, i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model, are used to find out the factors determining the flow of FDI out of non-oil-exporting developing nations. Its findings are as below.

◇ As per OLS model, FDI outflows from non- oil-exporting developing nations are positively and significantly influenced by Economy size (GDP), Labour cost (Compensation of employees), Natural resources, Corruption control whereas Infrastructure Development (EPC) and Exchange rate affects FDI outflow negatively.

◇ Fixed Effect model depicts that FDI outflows from non-oil-exporting developing nations are positively and significantly influenced by Economy size (GDP), Labour cost (Compensation of employees), Natural resources and Corruption control.

◇ Random Effect model shows that FDI outflows from non-oil-exporting developing nations are positively and significantly influenced by Economy size (GDP), Labour cost (Compensation of employees), Natural resources, Corruption control whereas Infrastructure Development (EPC) and Exchange rate affects FDI outflows negatively.

◇ After comparing OLS, Fixed Effect and Random Effect Models with the help of F Test and LM Test, it is inferred that the Fixed Effect model is more appropriate and the best regression model.

◇ Individual or country effects under Fixed Effect model are significant in 11 non-oil-exporting developing nations, i.e. Chile, Costa Rica, Honduras, India, Jordan, Kenya, Morocco, Namibia, Paraguay, South Africa and Sri Lanka.

◇ Finally, four factors, i.e. Economy size (GDP), Labour cost, Natural resources and Corruption control have a positive impact on the flow of FDI out of non-oil exporting developing nations.

◇ Other things remaining constant increase in GDP by 1 $ raises FDI outflow by 0.02$ and increase in Labour cost by 1 LCU will marginally increase FDI outflows by 0.0005 $, increase in savings of natural resources by 1 % leads to increase in FDI outflows by 287.66 Million $ and increase in Corruption control by 1 unit leads to increase in the flow of FDI out of non-oil-exporting developing nation by 1267.85 million $.

10.1.9 Findings on Comparison of Determinants of FDI Inflows and Outflows:

The determinants of FDI inflows to and FDI outflows from all three categories of developing nations are compared to find out the common and uncommon factors. Its findings are as below.

◇ Infrastructure development (EPC) and Political stability are the two common factors having a positive impact on the flow of FDI to all three categories i.e. developing nations, oil-exporting developing nations and non-oil-exporting developing nations. Market size measured by GDP is the only common factor which positively influences FDI inflows to developing nations and oil-exporting developing nations. Imports and Natural Resources are two common factors which create a positive impact on the flow of FDI to developing nations and non-oil-exporting developing nations. Reserves and Corruption control are two more factors having a positive impact but Trade openness have a negative impact on FDI inflows to non-oil exporting developing nations only.

◇ Economy size (GDP) is the only common factor in having a positive impact on outflow of FDI from all three categories of developing nations. Infrastructural development (EPC) and Trade openness have a positive impact and Imports and Exports have negative impact on the flow of FDI out of developing nations and oil-exporting developing nations. Natural resources, Labour cost and Corruption control are three factors supporting the flow of FDI out of non-oil-exporting developing nations.

◇ Market size/ Economy size (GDP) and Infrastructural development (EPC) are the common factors having a positive impact on the flow of FDI into and FDI out of developing nations. Imports support FDI inflow and restrict FDI outflow.

◇ Market size/ Economy size (GDP) and Infrastructure Development (EPC) are the two common factors positively influencing FDI inflows and FDI outflows from oil-exporting developing nations.

◇ Savings of Natural resources and Corruption control are the two common factors supporting the FDI inflow and FDI outflow of non-oil-exporting developing nations.

10.2 Conclusion:

This study investigates the performance of inflow and outflow of foreign direct investment of the developing nations for the period of 47 years from 1970 to 2016. The performance is explained showing trend and computing the growth, growth rate, average annual growth rate and compound annual growth rate. The study also determines the factors affecting the flow of foreign direct investment in and out of developing nations for the period of 20 years from 1996 to 2015.

The results reveal that the flow of FDI into and out of developing nations shows an increasing trend and growth, but with few ups and downs during the years 1998-2002, may be due to Argentine Great Depression or early 2000s recession of developed nations or 2002 stock market crash and again in 2009, may be due to the Great Recession observed in world markets during early 2010s, which was related to U.S. subprime mortgage crisis of 2007–09. The study also indicates that FDI is moving into developing nations at Compound Annual Growth Rate (CAGR) of 13.79 % whereas moving out at 22.72 %.

Further, the study explores the impact of various socio-economic and political factors on the flow of FDI in and out of developing nations. The result indicates that, as far as FDI inflows are concerned, Infrastructure development and Political stability positively influence all categories of developing nations. Market size (GDP), Imports, Reserves, Natural Resources, Corruption control influence positively, whereas Trade openness affects negatively in developing nations or oil-exporting developing nations or non-oil exporting developing nations.

With regards to FDI outflows, the study indicates that Economy size (GDP) is the only common determinant having a positive impact in all categories of developing nations. Infrastructural development (EPC), Trade openness, Natural resources, Labour cost and Corruption control have a positive impact, on the other hand Imports and Exports create a negative impact in developing nations or oil-exporting developing nations or non-oil exporting developing nations.

Therefore, it is inferred that economic factors like Reserves, Market size (GDP), Infrastructural development (EPC), Imports, social factors like savings in natural resources, control of corruption, political factor like political stability support the flow of FDI to developing nations on the other hand economic factor like Trade openness restricts the inward FDI. This means that large reserves, big market size, improvement in infrastructural facilities like telecommunication, electricity, transport system, etc., increase in import of goods and services, availability or savings of natural resources and control over corruption pulls the foreign direct investment to developing nations. However, globalization policy of developing nations does not support the FDI inflow. It also implies that the foreign direct investment of developing nations is Natural Resource seeking and Market seeking, as explained by Dunning (1988).

On the other hand, FDI outflow from developing nations is highly influenced by the size of the economy measured by GDP. Economic factors like Infrastructural development (EPC), Trade openness, Labour cost and social factors like savings in Natural resources and Corruption control support the FDI outflows from developing nations, but economic factors such as Imports and Exports restrict the FDI outflows. This means that large size of the economy, improvement in infrastructural facilities like telecommunication, electricity, transport system, globalization policy, high cost of labour, availability of natural resources and control over corruption push the foreign direct investment out of developing nations.

To conclude, size of the market or economy measured by GDP, development of infrastructure facilities, availability of natural resources and control over corruption are the four main determinants which pull as well as push the foreign direct investment of developing nations. Thus, developing economies should concentrate strengthening the GDP, develop infrastructure, reduce exploitation of natural resources, control corruption level, increase reserves and maintain the stability of the government to improve the FDI inflows and in turn the economic growth of the developing nations.

10.3 Theoretical Contributions:

10.3.1 Theoretical Contributions with respect to FDI inflows:

This study reveals that as expected economic factors, i.e. Reserves, Market size (GDP), Infrastructural development (EPC), Imports, social factors, i.e. savings in natural resources, control of corruption, political factor i.e. Political stability support the FDI inflows of developing nations whereas unexpectedly one of the economic factors Trade openness restricts the FDI inflow.

◇ Reserves support the FDI inflows of developing nations. This result confirms with the findings of Lucas (1993), SapnaHooda (2011), Khachoo and others (2012), Madaan and Chowdhry (2016).

◇ The Market size has a positive impact on FDI inflows of developing nations. This finding confirms with Hill and Munday (1992), Lucas (1993), Tsai (1994), Chen (1997), Holland and others (2000), Chakraborty and Basu (2002), Asiedu (2002), Kishore Nawal (2003), Campos and Kinoshita (2003), Addison and Heshmati, (2003), Bhati (2006), Mottaleb and Kalirajan (2010), Khachoo and others (2012).

◇ Infrastructure Development supports the flow of FDI to developing nations. This confirms the conclusion of UNCTAD World Investment Report (1998), Nagaraj R. (2003), Addison and Heshmati (2003), Demishan and Masca (2008), Mottaleb and Kalirajan (2010), Khachoo and others, 2012, Madaan and Chowdhry (2016).

◇ Imports of goods and services attract FDI inflows to developing nations. Similar findings are noted by Mundell (1957), Hymer (1970) and Madaan and Chowdhry (2016).

◇ Availability of Natural Resources pulls FDI to developing nations. This result substantiates the findings of Campos and Kinoshita (2003) and Moreira (2009).

◇ Control of corruption leads to high inflow of FDI to developing nations. This statement witnesses the outcome of Moreira (2009) and Ajayi (2006).

◇ Political stability invites FDI to developing nations. This confirms the result of Soon (1990), Lucas (1993), Addison and Heshmati (2003), Quazi and Mahmud (2004) and Pradeep (2011).

Thus, the above outcome of this study partially complies with Dunning's Eclectic Theory or OLI Paradigm (i.e. Ownership Advantage, Location Advantage, Internalization) which considers the significance of country specific variables i.e. Location Advantage variables for FDI inflows. The findings comply with the location advantage aspects such as taxation and fiscal policy of developing nations (variables i.e. Reserves, GDP), Research and development advantages (Infrastructure development), Government's regulatory framework (Imports of goods and services), Geographical environment (Availability of natural resources), Cultural environment and production and transportation cost (control of corruption) and political environment (Political stability).

10.3.2 Theoretical Contributions with respect to FDI outflows:

This study also reveals that as expected, economic factors, i.e. Economy size (GDP), Infrastructural development (EPC), Trade openness, Labour cost, social factors, i.e. savings in natural resources and control of corruption supports the FDI outflows from developing nations but economic factors such as Imports and Exports of goods and services restrict the FDI outflows.

✧ The size of the economy measured by GDP has a positive impact on FDI outflows of developing nations. This finding confirms the Investment Development Path (IDP) propounded by Dunning (1981) which states that the country develops, and its own firms invest overseas and further adds that FDI outflows are totally dependent and encouraged by home country's level of economic development or growth measured by GDP or GDP per capita (Dunning, 2001) and (Das Khanindra ch., 2013).

✧ Infrastructural development (EPC) of the home country supports the FDI outflows of developing nations. This outcome is against the result of Banga (2008), which infers poor infrastructure of home country forces outflow of FDI.

✧ Trade openness or globalization is a positive and significant determinant of outward FDI from developing nations. This result confirms the findings of Kravis and Lipsey (1982), Culem (1988), Edwards (1990), Pantelidis and Kyrkilis (2005), Masron and Shahbudin (2010), Tolentino (2010), Das

Khanindra ch. (2013) and Belloumi (2014). Wheeler and Mody (1992) presented a similar effect of openness on FDI in the manufacturing sector. Chakrabarti (2001) and Ghosh (2007) also found a positive correlation but no causality.

✧ The labour cost of home countries positively and significantly influences the FDI outflows from developing nations; this implies that due to high labour cost in developing nations direct investors tend to invest in developed or other developing nations. This seems to be a new finding since this variable is not covered in earlier studies.

✧ Availability or savings of natural resources of the home country significantly increases the outflow of FDI from developing nations; this implies that after possessing a large quantity of natural resources, the direct investors invest abroad. This also may be a new finding since this variable is not covered in earlier studies.

The above two findings bring out a theory that the factor endowments (High Labour Cost and Abundant Natural Resources) of home countries may lead to an exodus of FDI to developed nations and other developing nations.

✧ Control of corruption in home country pushes FDI out of developing nations. It means corruption controlled through improved governance and reduced red-tapism supports the investors to invest in foreign countries. This finding contradicts with the result of Kayam (2009), which states that improvement in government stability and bureaucratic quality of the home country leads to a reduction in FDI outflows.

✧ Imports of goods and services restrict the FDI outflow; this result confirms the studies of Balasubramanyam et al (1996) and Liu et al. (2001) who added that import causes the growth of FDI from home country which is consistent with product life cycle theory.

✧ Exports of goods and services have a negative impact on the FDI outflows, this confirms the conclusion of Dasgupta (2009), Shawa and Shen (2013) and Liu et al. (2015) who adds that in early phase FDI outflow complements export and in maturity stage it substitutes exports.

Thus, the above outcome with respect to FDI outflows, i.e. Size of the economy measured by GDP has a positive impact on FDI outflows of developing nations, comply with the dominant theory of FDI outflow i.e. Investment Development Path (IDP) propounded by Dunning (1981) which states that country develops and its own firms invest overseas and further addition of Dunning (2001) that FDI outflows are totally dependent and influenced by the home country's level of economic development or growth measured by GDP or GDP per capita.

10.4 Policy Implications for Governments and Corporate World:

Whether the implication of this outcome is acceptable, positive or otherwise, for the developing nations and for the world as a whole is a debatable question. It is believed that the increase in new economic players in the form of or as a part of new enterprises or firms from developing or recently developed nations that are capable of investing and willing to invest in other nations, is positive growth, for economic prosperity and peace and stability of the universe. FDI tends to promote economic prosperity in the source or home country as well as the host country. In the short run, workers class from home country and capitalist class from host country may suffer losses but in the long run, investment both from existing and new sources shall generate a profitable allocation of resources and thus gain for the society as a whole.

Considering the existing pattern of FDI inflow i.e. flow from developed nations to developing nations and new pattern of FDI outflow i.e. flow from developing nations to developed or other developing nations (Reverse FDI), the following policies are derived from our findings that may be considered at regional, national or international levels to capacitate and inspire more countries to participate in capital flows.

a.   Governments of developing nations should pursue competition policy which stimulates national and international investments.

b. Governments of developing nations should follow outward looking policies for FDI. The synthesis of national economies into global are generally favourable for their growth and development.

c. In order to flourish in an international market, the corporation from the country must provide a superior product or service with regards to price and quality as compared to other nations.

d. Governments should motivate and support the creation of industry clusters. World's competitive clusters have emerged from industry clusters.

e. Governments should encourage the free flow of goods and services, labour, capital and should take efforts to reduce barriers in this regard.

f. Governments of developing nations should device a comprehensive policy which helps to improve the GDP of the country, develop the infrastructural facilities, increase the total reserves, improve the imports of goods and services and saves the natural resources. Governments should also maintain stability in the political field, so that more FDI shall pour in these nations, which in turn shall boost economic growth. The same policy shall apply to oil-exporting developing nations. However, the Governments of non-oil-exporting developing nations should take an additional step to reduce corruption by improving fair governance and reducing red-tapism.

g. Governments of developing nations should device a policy which helps to improve the GDP of the country, develop the infrastructural facilities and encourage the process of globalization so that more FDI flow from developing nations to developed nations or other developing nations. This will strengthen the new phenomenon of "Reverse FDI" and prove the sustainability of their economic growth and alter the world's investment profile, which may further lead to a new concept of 'World wide growth'. The same policy shall apply to oil-exporting developing nations. However, the Governments of non-oil exporting developing nations should take additional steps to maintain the labour cost, save natural resources and control corruption by improving fair governance and reducing red-tapism.

To generalize, any developing nation's policy should stress over the improvement of GDP, development of infrastructure, supporting globalization, saving of natural resources, maintaining political stability and controlling of corruption to bring balance between inward and outward FDI.

10.5 Limitations of the study:

The limitations of this study are as follows:

1. The study includes only developing nations of the world.
2. Select developing nations are covered in the study based on the availability of data.
3. The study is limited to the period of 47 years from 1970 to 2016 for objective 1 and 20 years from 1996 to 2015 for objective 2 to 6.
4. There are various other socio-economic and geographical factors which have influence on the flow of FDI to and from developing nations such as Tax rates, Research and Technology development, Literacy or Education, Govt. incentives, Economic reforms, Legal and procedural framework, distance between nations, location of nations, population, etc. which have not been included in the study due to non-availability of data for the period covered in the study.

10.6 Scope for Further Research:

Though the study of trend and growth of FDI inflows and outflows has been a widely researched topic across the individual countries, still it remains unexplored in the context of developing nations of the world as a whole. The flow of FDI in and out of the developing nations has been growing at a rapid pace with new countries entering the area of foreign direct investment. The trend and growth of few individual developing nations and few group have been analysed by many researchers, but the period covered is a decade or two and such research using a big period still left unexplored.

Again, the analysis of determinants of FDI inflows has been a widely researched topic across the individual countries and few groups of developing nations but still no extensive research has been conducted with regards to all developing nations of the world.

Similarly in the case of FDI outflows lot of research has been done to study why FDI flows out to certain host countries? Which factors of host countries attract them? However, there is negligible research conducted to study why FDI flows out of home countries, which factors of home countries influence outward flow?

There is a lot of scope to carry out further research in the areas stated below:

1. The trend and growth of FDI inflows as well as outflows can be studied for every individual country in the world or group of developed nations or group of underdeveloped nations or group of nations in the continents of the world such as Asian continent, African continent, etc.

2. The research on factors attracting FDI inflows can be carried out for every individual country in the world or group of developed nations or group of underdeveloped nations or group of nations in the continents of the world such as Asian continent, European continent, etc.

3. The research on determinants of FDI outflows can also be carried out for every individual country in the world or group of developed nations or group of underdeveloped nations or group of nations in the continents of the world such as American continent, Australian continent, etc.

4. The flow of FDI into and out of certain nations is affected by innumerable factors. This study incorporates a few factors or determinants. There is wide scope in this area for further research incorporating new factors such as Tax rates, Research and Technology development, Literacy or Education, Population and many more which are unexplored in this study.

5. This study analyses the factors of FDI flows for the period 1996 to 2015. Further research can be carried out to analyse the factors determining FDI flows considering the longer or latest timeframe.

6. There is a scope for further research with respect to the comparison of determinants of FDI flows among individual countries and among various groups such as developed nations, developing nations, under developed nations, between continents, between income level countries and so on.

7. There is also a scope to develop new models / measures / methods to determine the factors influencing the flow of foreign direct investments.

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Appendix A

FDI Inflows to Developing Nations (in US $ Millions)

Year	FDI Inflows	Year	FDI Inflows
1970	3225	1993	79569
1971	3306	1994	99118
1972	3577	1995	118169
1973	5316	1996	148852
1974	10197	1997	189156
1975	8846	1998	186952
1976	5938	1999	216052
1977	7450	2000	254239
1978	9178	2001	223978
1979	10863	2002	179478
1980	15781	2003	201935
1981	21599	2004	277352
1982	24674	2005	376263
1983	16325	2006	478082
1984	16578	2007	636045
1985	14318	2008	741166
1986	13745	2009	527366
1987	16932	2010	606088
1988	23829	2011	719174
1989	27526	2012	685028
1990	29136	2013	706128
1991	35404	2014	730226
1992	54739	2015	774803
		2016	686396

Appendix B

Growth of FDI Inflows to Developing Nations (in US $ Millions)

Year	Growth of FDI Inflows	Year	Growth of FDI Inflows
1970	0	1993	24830
1971	81	1994	19549
1972	270	1995	19051
1973	1740	1996	30683
1974	4881	1997	40304
1975	-1351	1998	-2204
1976	-2908	1999	29100
1977	1512	2000	38187
1978	1728	2001	-30261
1979	1685	2002	-44500
1980	4918	2003	22457
1981	5818	2004	75417
1982	3074	2005	98911
1983	-8348	2006	101819
1984	253	2007	157963
1985	-2261	2008	105121
1986	-573	2009	-213800
1987	3187	2010	78722
1988	6896	2011	113086
1989	3697	2012	-34146
1990	1610	2013	21100
1991	6268	2014	24097
1992	19335	2015	44578
		2016	-88407

Appendix C

Growth Rates of FDI Inflows to Developing Nations (in percentage)

Year	Growth Rate of FDI Inflows	Year	Growth Rate of FDI Inflows
1970	0.00	1993	45.36
1971	2.53	1994	24.57
1972	8.17	1995	19.22
1973	48.64	1996	25.97
1974	91.81	1997	27.08
1975	-13.25	1998	-1.17
1976	-32.87	1999	15.57
1977	25.46	2000	17.67
1978	23.19	2001	-11.90
1979	18.36	2002	-19.87
1980	45.27	2003	12.51
1981	36.87	2004	37.35
1982	14.23	2005	35.66
1983	-33.84	2006	27.06
1984	1.55	2007	33.04
1985	-13.64	2008	16.53
1986	-4.00	2009	-28.85
1987	23.19	2010	14.93
1988	40.73	2011	18.66
1989	15.51	2012	-4.75
1990	5.85	2013	3.08
1991	21.51	2014	3.41
1992	54.61	2015	6.10
		2016	-11.41

Appendix D

FDI Outflows from Developing Nations (in US $ Millions)

Year	FDI Outflows	Year	FDI Outflows
1970	40	1993	33531
1971	40	1994	42350
1972	49	1995	45005
1973	103	1996	50093
1974	219	1997	58061
1975	407	1998	44696
1976	417	1999	47834
1977	499	2000	100084
1978	703	2001	55349
1979	650	2002	52114
1980	2898	2003	67860
1981	1850	2004	112385
1982	1886	2005	133218
1983	1584	2006	232986
1984	1303	2007	290728
1985	2482	2008	349016
1986	4021	2009	279561
1987	3369	2010	373007
1988	5107	2011	410728
1989	5806	2012	596256
1990	5467	2013	471052
1991	10500	2014	526538
1992	24931	2015	412072
		2016	476074

Appendix E

Growth of FDI Outflows from Developing Nations (in US $ Millions)

Year	Growth of FDI Outflows	Year	Growth of FDI Outflows
1970	0	1993	8600
1971	0	1994	8819
1972	9	1995	2654
1973	54	1996	5088
1974	116	1997	7968
1975	188	1998	-13364
1976	10	1999	3138
1977	82	2000	52249
1978	204	2001	-44734
1979	-53	2002	-3235
1980	2248	2003	15746
1981	-1048	2004	44525
1982	37	2005	20834
1983	-302	2006	99767
1984	-281	2007	57743
1985	1179	2008	58287
1986	1538	2009	-69455
1987	-651	2010	93446
1988	1738	2011	37721
1989	699	2012	185528
1990	-338	2013	-125205
1991	5033	2014	55487
1992	14431	2015	-114466
		2016	64002

Appendix F

Growth Rates of FDI Outflows from Developing Nations

(in Percentage)

Year	Growth Rate of FDI Outflows	Year	Growth Rate of FDI Outflows
1970	0.00	1993	34.49
1971	-0.30	1994	26.30
1972	23.52	1995	6.27
1973	111.00	1996	11.31
1974	112.17	1997	15.91
1975	85.53	1998	-23.02
1976	2.44	1999	7.02
1977	19.56	2000	109.23
1978	40.94	2001	-44.70
1979	-7.51	2002	-5.85
1980	345.71	2003	30.21
1981	-36.17	2004	65.61
1982	1.99	2005	18.54
1983	-16.03	2006	74.89
1984	-17.75	2007	24.78
1985	90.52	2008	20.05
1986	61.96	2009	-19.90
1987	-16.20	2010	33.43
1988	51.57	2011	10.11
1989	13.68	2012	45.17
1990	-5.82	2013	-21.00
1991	92.05	2014	11.78
1992	137.44	2015	-21.74
		2016	15.53

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1. **Foreign Direct Investment in India – Trends and Issues**

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   The International Research Journal of Commerce, Business and Social Sciences.
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