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# FDI and Its Determinants: Evidence from Emerging Nations

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## ABSTRACT

*FDI is becoming a buzzword from the prospect of the economic growth and development in the current economic scenario around the globe. In the dynamism of the economic environment it is utmost significant to study its development that enables to have a deep insight about what have been done beneath its theoretical background and what are the possibilities for future development. This project aims to study the growth of the FDI Inflows in the top emerging nations of the world with the view point of understanding what serves as the catalyst for the growth of the said factor. The literature also suggest that there are limited number of studies available on FDI determinants in the context of emerging nations. The study also aims to develop an infrastructure index for the nations in question and discuss how the same has posed an impact on the development of the FDI Inflows. This index was developed using the Principal Component Analysis (PCA). Finally, Quantile Regression technique is to study the relationship of the FDI Inflows and its determinants. The study found that Infrastructure, Trade Openness, Exchange Rate & Inflation were significantly affecting FDI's, while factors like Market Size and Financial Health were found to be insignificant. From the policy point of view, it is imperative to determine and understand the impact of major explanatory variables and this study will assist to identify those significant variables that will eventually help to boost the FDI Inflows.*

**Keywords:** *FDI Inflows, Global Emerging Nations, FDI Determinants, Infrastructure.*

## 1. INTRODUCTION

It is important for an economy to ensure that the development is done on a front that is diversified in nature. Emerging nations have a huge room to develop not just, as strong services based economies but to transition into ones that can make their own ends meet. However, it numerous arguments say that the pace of the development of this sector is nowhere it should be, or more importantly, it could be. What makes manufacturing sector such an important wheel of the economy is the fact for its ability to provide direct employment. This sector also helps boost exports of a country and makes it a much safer option in terms of investment for the host nation as compared to the investment in the Services sector.

Thus, for an economy to become a manufacturing based economy, the emphasis must be laid on an environment that makes it easy not just to manufacture but also making norms such that the right resources are always at the disposal of the individuals to make their job easy. For the same very purpose, global developing economies were selected to serve as a base for the study.

The longlist was prepared based on the indexing of the top global developing nations by the MSCI (previously known as Morgan Stanley Capital International and MSCI Barra) Inc. For achieving the final sample of the study, we have considered the MSCI Inc.'s MSCI Emerging Market Index, which lists the top global

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emerging markets. The emerging markets can serve as the catalyst in the growth of the world trade, global financial stability and help in the transition of the free market economies in Asia, Central Europe, Africa and Latin America.

FDI has shown an emerging trend in the global economic scenario that can serve as a potent factor to boost an economy of a nation while also bring in some valuable resources from the world external to the confines of its boundaries in terms of foreign currency and technological advancement. In addition, considering the permanency nature of said investment, the positive outcomes and repercussions are for a longer duration in comparison to other forms of foreign investments.

Griffin & Pustay (2007) defined FDI as “The situation where 10 percent or more control of the firm’s voting securities in an unincorporated business lie with a foreign investor”. Yet another definition of FDI calls it “A process wherein an individual or an entity invests in an enterprise across the boundaries of the home country in the search of new markets so as to obtain resources and expand their business (Daniels et al. 2004).”

### 1.3 Trends in Emerging Nations

The trends of the FDI inflows are studied for the post-2008 economic crisis era and average yearly growth of the FDI Investments into the country in a nation 2009 to 2015, Compound Annual Growth Rate (CAGR) is employed (Refer Table 1.1).

Out of the emerging nations as defined by MSCI, the worst performance is seen in Hungary (-2.331) and Venezuela (-2.071) while on the contrary, UAE (0.340) and Malaysia (0.337) have seen the highest growth out of all the countries. The period of post crisis is considered for negating any kind of variations in the data.

Apart from a few exceptions, it can be seen that the growth of FDIs in almost all the emerging nations is positive. Thus, the emerging nations are viewed as viable markets for the Multi-national Companies all around the world for the purpose of investment. This is because of the lower costs of production and set-up costs in such nations as the factors of production are available at a much competitive price as compared to the home nation (Moosa, 2002).

### 1.5 Objectives

The objectives that are framed out for this study are as follows:

- To determine what factors significantly affect the Inward FDI in emerging nations for the period of 1995 to 2015.
- To ascertain the extent of relationship between Inward FDI and its determinants.

Table 1.1: CAGR of Emerging Nations

YEAR	2009	2010	2011	2012	2013	2014	2015	CAGR
Argentina	4017.16	11332.72	10839.93	15323.93	9821.66	5065.34	11758.99	0.166
Brazil	25948.58	83748.99	96152.37	76097.95	53059.74	73085.51	64266.95	0.138
Chile	12945.50	17226.76	17738.67	27046.47	19330.67	23783.82	15865.75	0.029
China	95000.00	114734.00	123985.00	121080.00	123911.00	128500.00	135610.00	0.052
Colombia	8034.59	6429.94	14647.76	15039.37	16208.66	16163.14	11732.23	0.056
Czech Rep.	2926.81	6140.58	2317.55	7984.11	3639.13	5492.00	465.11	-0.231
Egypt	6711.60	6385.60	-483.00	6031.00	4256.00	4612.00	6925.20	0.004
Greece	2436.36	329.91	1143.14	1739.70	2817.47	2683.27	1140.29	-0.103

Hungary	1995.32	2192.81	6300.12	14409.22	3402.08	7752.46	-14804.13	-2.331
India	35633.94	27417.08	36190.46	24195.77	28199.45	34582.10	44064.13	0.031
Indonesia	4877.87	13770.58	19241.25	19137.87	18816.66	21810.52	16641.45	0.192
Israel	4607.03	6335.00	8728.09	8467.84	12448.00	6738.00	11510.00	0.140
Jordan	2413.10	1688.59	1485.92	1548.31	1946.76	2178.45	1600.28	-0.057
Korea Republic	9021.90	9497.40	9773.00	9495.90	12766.60	9273.60	4104.10	-0.106
Malaysia	1452.97	9060.04	12197.58	9238.83	12115.47	10877.35	11121.50	0.337
Mexico	18111.81	27262.84	24706.24	21060.81	47536.86	27507.94	33181.27	0.090
Morocco	1951.71	1573.86	2568.43	2728.36	3298.10	3561.24	3254.80	0.076
Pakistan	2338.00	2022.00	1162.00	859.00	1333.00	1867.00	1289.00	-0.082
Peru	6430.65	8454.63	7341.12	11788.20	9799.70	4441.01	8271.63	0.037
Philippines	1963.38	1298.09	1851.58	2449.31	2429.50	5739.57	4936.77	0.141
Poland	10039.32	12796.27	15925.14	12423.52	3625.46	14268.74	13472.40	0.043
Portugal	1611.33	2424.00	7428.16	8857.96	2701.95	2976.26	6932.71	0.232
Qatar	8124.74	4670.33	938.52	395.88	-840.38	1040.38	1070.88	-0.251
Russia	27752.26	31667.97	36867.77	30187.66	53397.14	29151.66	11857.81	-0.114
South Africa	7502.06	3635.60	4242.87	4558.85	8300.10	5770.64	1729.38	-0.189
Sri Lanka	404.00	477.60	955.91	941.12	932.55	893.63	679.66	0.077
Thailand	5361.81	14554.95	1370.36	9135.22	15493.03	4809.07	5699.72	0.009
Turkey	8585.00	9086.00	16142.00	13631.00	12770.51	12457.68	17258.54	0.105
UAE	1134.29	8796.77	7152.10	8828.37	9490.99	10823.38	8795.10	0.340
Venezuela	-983.00	1574.00	5740.00	5973.00	2680.00	320.00	1591.00	-2.071

Source: UNCTAD

## 2. REVIEW OF LITERATURE

Foreign Direct Investments (FDI) have played a significant role in boosting of the international trade and helping enhance the global capital flows in almost all the countries in the world. It is evident that FDI is a prominent way of increasing the inflows of a foreign currency into a market and help raise the levels of employment of the economy.

After examining the data available in the UNCTAD World Trade Investment Report (2017), it can be argued that global FDI Inflows have seen an astounding increase in the recent times credited to more globalized activities.

The scale of growth in this domain is a prominent reason that studies in the sector related to FDI have seen a drastic increase over the past three decades or so (Dunning, 2009). The focus of the studies in the past have gone from industry specific variables trying to explain the FDI trend, to how the spatial aspects of FDI affect the movement of Multi National firms (MNCs) to new markets in search of better opportunities and

increasing their profitability (Vernon, 1966 & *ibid.*). In contemporary scenario, factors like macroeconomic and micro organizational policies are as important to the MNCs as factors like availability, costs and quality of resources used to be in the 1990s (*ibid.*).

### Factors affecting FDI Inflows

It is understandable that the growth and performance of the Influx of FDI in any particular nation is not a simple function but is dependent on a wide variety of factors. Huyen (2011) considered the case of the Inflow of FDIs for eight countries namely India, China, Japan, South Korea, Singapore, Thailand, Bangladesh and Hong Kong and concluded that the performance of the inflows were dependent on the factors like GDP, Inflation, Infrastructure and Openness to trade by a nation. The period considered for his study ranged from the year 1991 to 2008. Similarly, numerous studies have been focussed to analyse the factors that have a significant impact on the FDI and aftermath of these studies varies in terms of magnitude and extent of the impact on the FDI. The factors may vary from region to region and from country to country. For instance, the railway infrastructure may be considered a significant factor to boost the performance of FDIs as a major means of transport of goods in a country like India. The same may not be held true for a country like ones in the Middle East like UAE or Qatar who lack a significant railway infrastructure in their respective countries as a means of the movement of the people or the goods. Thus, it could be understood that these factors are not universal in nature and thus, their usefulness and impact on the performance and as well as on the growth of the FDIs will vary from country to country.

Theories and studies from all round the globe have studied and analysed a number of factors that have an impact on the Inflow of FDIs. These independent factors have a significant level of impact on the influx of the FDIs regardless of the magnitude of the said impact. Some of these factors affecting FDIs are as follows:

Table 2.1: Summary Table of Review of Literature

Factors	Positive Relation	Negative Relation	No Relation
<b>Inflation</b>	Boateng, Hua, Nisar, Wu (2015)	Elfakhani, Mulama (2011)	Soumaré, I., & Tchana Tchana, F. (2011)
<b>National Income/ GDP/ Market Size</b>	Sharma (2003); Shamsuddin (1994); Resmini (2001); Zhao (2003); Tsai (1994); Akpan et al (2014); Dunning (1994); Forsgren (2013)		Nunnenkamp (2002); Loree and Guisinger (1995); Hausmann and Fernandez- Arias (2000)
<b>Infrastructure</b>	Srinivasan,(1998); Vijayakumar <i>et al.</i> (2010); Apkan <i>et al.</i> (2014)		
<b>Trade Openness</b>	Grossman and Helpman, (1991); Liu <i>et al.</i> , (2001); Mina, (2007)		Wheeler and Mody (1992)
<b>Exchange Rates</b>		Tolentino (2010); Soumaré, I., & Tchana Tchana, F. (2011)	Healy and Palepu (1993)
<b>Natural Resources</b>	Aleksynska and Havrylchyk, (2011)	Jadhav (2012)	Soumaré, I., & Tchana Tchana, F. (2011)

Thus, the existing research in the domain of FDI Inflows posits a fair idea of the factors that influence the growth of the FDIs globally. A number of factors, according to various studies, influences the performance of FDI inflows globally. The viewpoint of the researchers, though, in some cases is conflicting with the impact of some factors on FDI inflows not certainly clear credited to lack of convincing supporting data. For analysing the financial market development of a nation, different proxy variables can be used (Soumaré, and Tchana Tchana, 2011). However, due to inconsistency of the financial health measures data, “Bank Z-Score” was taken as the proxy for the financial health of a nation and further, its impact on FDI inflows has been addressed.

The hypotheses, thus, framed are as follows:

Table 2.1: Hypotheses

Null Hypothesis	Hypothesis Statement(s)
H <sub>01</sub>	: There is no significant relationship between Inflation and FDI Inflows
H <sub>02</sub>	: There is no significant relationship between GDP and FDI Inflows
H <sub>03</sub>	: There is no significant relationship between GDP Growth and FDI Inflows
H <sub>04</sub>	: There is no significant relationship between Infrastructure and FDI Inflows
H <sub>05</sub>	: There is no significant relationship between Trade Openness and FDI Inflows
H <sub>06</sub>	: There is no significant relationship between Exchange Rate and FDI Inflows
H <sub>07</sub>	: There is no significant relationship between Natural Resources and FDI Inflows
H <sub>08</sub>	: There is no significant relationship between Bank Z-Score and FDI Inflows

### 3. DATA METHODOLOGY

#### 3.1 Data Selection

The study started to analyse the relationship that the FDIs hold to other global development indicators. For this very purpose, the first step involved the development of an infrastructure index for each of the country considered as the part of the long list.

The countries were chosen based on the MSCI Emerging Markets Index, which in itself is designed to measure the equity performance of each of the nations. An MSCI Index is developed based on the political, economic and currency risks. The index takes into account the conditions in the nation, market cap segments, sectors and styles. The emerging markets are seen as an overall destination of high potential by the firms existing in the home nation and this is the primary reason these nations were considered to check the performance of FDIs and the impact various global development indicators have over it.

A panel dataset of the selected countries is formed followed by regression analysis for all the independent factors taking FDI Inwards as dependent variable, to see which factor is more forthcoming in its contribution

to Inward FDI in context to global emerging markets. The data was taken for a span of twenty-one years, i.e. 1995 to 2015.

This was done by a robust OLS and quantile regression analysis of the data taking the “Inward FDI” as the explained variable. Other variables like the “Natural Resources”, “Exchange Rates”, “GDP”, “Inflation (CPI taken as proxy)”, “Growth of GDP”, “Bank Z-Score”, “Trade Openness” and “Infrastructure” were taken as the explanatory variables. The details about all the considered variables are explained in the Table No: 3.1.

Table 3.1: Definition of variables for Analysis:

S.No.	Name	Abbreviation Used	Definition	Source
1	FDI Inwards	FDII	Total volume of Foreign Direct Investment coming into a country in US\$ million.	UNCTAD
2	GDP	FCGDP	Total GDP of the country in US\$ millions.	WITS, UNCTAD
3	Trade Openness	TOPN	Openness Index for trade of a particular nation.	WITS, UNCTAD
4	Inflation	INFCPI	The total movement of the prices of market basket of consumer goods and services (proxied by CPI).	UNCTAD, EconStats
5	Infrastructure Index	INFRI	Defines the level of development of infrastructure in the country.	WDI (World Bank)
6	Growth of GDP	GFCGDP	Works as the proxy for the growth of the national economy. Highlights the per year growth of GDP	WITS, UNCTAD
7	Exchange Rate	EXGRT	The currency exchange rate against US \$	WDI (World Bank)
8	Natural Resources	NTROS	Share of fuel and minerals for export data	World Bank Database
9	Bank Z-Score	Z_SCR	Likelihood of the chance of the default of the banking system of a nation.	Global Financial Development Database (World Bank)

After this, the Infrastructure Index was to be developed. Global Development Indicators were used (World Bank Database, 2018) as the data sources to give the factors that had an effect on the infrastructure on a global scale. As much as 11 factors were identified for the development of the Infrastructure Index from 1995 to 2015. The Methodology adopted to serve as the guideline to develop the index is Principal Component Analysis (PCA) with the aim of studying the impact each of the identified factors have on the Infrastructure Index and the magnitude it has.

The PCA is a statistical multivariate technique used to identify the linear components of a set of variables (Field, 2009). In simple words, the PCA is a factor reduction technique that was employed in the framing of the Infrastructure Index with the purpose of identifying the magnitude of the identified factors has on the overall index and to negate the ones with the least or insignificant contribution. Thus, considering only the ones with some significant contribution to the overall index.

For PCA, assume the dataset to be in the form of a matrix shaped “ $a \times b$ ” such that “ $b$ ” is the number of samples or observations and “ $a$ ” is the number of variables. In PCA, the matrix  $\mathbf{T}$  of size “ $a \times b$ ” is transformed into another matrix  $\mathbf{W}$  such that;

$$\mathbf{W} = \mathbf{PT}$$

$$PT = ( P_{t_1} P_{t_2} P_{t_3} \dots P_{t_n} ) = \begin{bmatrix} p_1 t_1 & p_1 t_2 \dots & p_1 t_n \\ p_2 t_1 & p_2 t_2 \dots & p_2 t_n \\ \vdots & \vdots & \vdots \\ p_m t_1 & p_m t_2 \dots & p_m t_n \end{bmatrix} = W$$

It is important to understand that “P” gives the amplitude of the principal components. These principal components are nothing but linearly uncorrelated variables, which come out because of conversion of correlated variables via orthogonal transformation. The first principal component is the one, which highlights the largest variance in the given data set and so on. It must be kept in mind that no two principal components are correlated to each other. The total number of the principal components is given by the function “ $\min(b-1, a)$ ”.

Using PCA, the infrastructure index was evaluated and shortlisting of countries was done based on the reliability of the infrastructure index. Thus, using the PCA, countries namely Venezuela, Hungary and Greece were omitted due to very low KMO (Kaiser Meyer Olkin) value and thus resulting in the data being unacceptable (Kaiser, 1970, 1974).

The KMO value varies in between 0 to 1 with a value “zero” indicating large sum of partial correlations as compared to relative sum of correlations and thus a diffusion in a pattern of correlations. A value close to “one”, thus, signifies that factor analysis should present distinct and reliable factors (Field, 2009).

The final shortlist of the countries, thus, prepared for the study were as follows:

Table 3.2: Shortlisted Countries

Continent	Countries
Asia	India, China, Korea Republic, Qatar, UAE, Malaysia, Pakistan, Thailand, Indonesia, Philippines, Jordan, Sri Lanka, Israel
Africa	Egypt, South Africa, Morocco
America	Brazil, Mexico, Peru, Chile, Columbia, Argentina
Europe	Turkey, Russia, Czech Republic, Poland, Portugal

### 3.2 Data Transformation

In order for the analysis to be done, all the series must be stationary of same level, i.e.  $i(0)$  or  $i(1)$ . For the same, data transformations has been applied so that the series can lie in either of the two domains.

At the preliminary level, all the data series are transformed into stationary data series either by taking the logarithmic transformation or by deflating the data series by the appropriate deflator or by taking the combination of both. Details about all the data and necessarily adjustments are depicted in the Table 3.3.

Table 3.3: Series Transformation

Name	Code	Transformation
FDI Inwards	FDII	FDI taken as the proportion of the total GDP generated in the nation.
GDP	FCGDP	Logarithmic transformation taking the log of the series
Natural Resources	NTROS	No transformation.
Exchange Rate	EXGRT	Logarithmic transformation taking the log of the series

Trade Openness	TOPN	Logarithmic transformation taking the log of the series
Inflation	INFCPI	Logarithmic transformation taking the log of the series
Infrastructure Index	INFRI	No transformation.
Bank Z-Score	Z_SCR	No transformation.

### 3.3 Unit Root Analysis

For examining the stationarity of the raw data series and transformed data series, Unit Root Analysis is employed. This is imperative step before performing further econometric analysis, i.e. panel regression analysis and it further assists to ascertain the appropriate methodology for formulating the final model.

Unit Root test is a type of a statistical testing technique which helps test and analyse whether the data series in question is stationary or not and whether the series possesses any “unit root” or not (Ko enda, and erný ,2014). The hypothesis that are considered in the Unit Root Testing are as follows:

$H_0$ : Unit Root is present in the series.

$H_1$ : No unit root is present in the series.

The stochastic component to be tested to contain the unit root or not by unit root testing is given by:

$$X_t = C_t + s_t + e_t$$

Where,

$X_t$ = Series to be tested for unit root

$C_t$ = Deterministic component (Trend, Intercept, Seasonality, etc.)

$s_t$ = stochastic or random component

$e_t$ = stationary error component

The Following four types of Unit Root Testing is used for the same:

- Levin, Lin & Chu (LLC)
- Im, Pesaran and Shin (IPS)
- ADF - Fisher Chi-square
- PP - Fisher Chi-square

### 3.4 Quantile Regression

Regression, in simple words, is as a statistical technique that is used to derive a statistical relationship that may exist between two or more variables. For regression to be applied, though, there must exist a physical way in which the independent variable can affect the dependent variable (Kothari, 2004). Least square methodology is generally used to provide the best-fit line for the regression analysis. Thus, a regression model simply develops a mathematical model that, using the independent variables, helps predict the dependent variables.

The type of regression technique to be employed in this study is the “Quantile Regression” or the “QR” method and not the “Ordinary Least Square Method (OLS)” method. The OLS method works following the assumption that all the error terms in an equation are normally distributed. On the other hand, np such condition is existent in the QR model and thus, is more effective as it can take into account the extreme observations in a set without having to compromise such data. This model divides the datasets into various quantiles and the data outputs are presented accordingly for each of the such desired quantiles (Koenker & Bassett, 1978).

QR, in this study, is used to see the impact of the explanatory variables considered in the study (like exchange rate, inflation, etc.), see the relation, and study how they influence the explained variable (FDI Inwards).

#### 4. DATA ANALYSIS

##### 4.1 Bartlett's and KMO Test

Post estimations were based on the Principal Component Analysis (PCA) of the infrastructure data for each of the thirty long-listed countries.

Table 4.1: Post-estimation values

S.No.	Name	Bartlett Chi-Sq	p value	KMO Stat	Acceptance
1	India	705.725	0.000	0.749	Accept
2	Brazil	410.091	0.000	0.677	Accept
3	China	698.257	0.000	0.863	Accept
4	Poland	450.416	0.000	0.672	Accept
5	Mexico	294.545	0.000	0.659	Accept
6	Korea	396.638	0.000	0.798	Accept
7	South Africa	269.168	0.000	0.639	Accept
8	Turkey	467.503	0.000	0.809	Accept
9	Egypt	469.651	0.000	0.604	Accept
10	Russia	572.461	0.000	0.824	Accept
11	Hungary	482.238	0.000	0.393	Reject
12	Greece	345.750	0.000	0.488	Reject
13	Czech Republic	433.583	0.000	0.689	Accept
14	Qatar	323.414	0.000	0.719	Accept
15	UAE	346.844	0.000	0.653	Accept
16	Indonesia	377.927	0.000	0.775	Accept
17	Malaysia	363.902	0.000	0.755	Accept
18	Pakistan	385.249	0.000	0.718	Accept
19	Philippines	323.805	0.000	0.608	Accept
20	Thailand	483.082	0.000	0.739	Accept
21	Israel	362.945	0.000	0.625	Accept
22	Jordan	319.015	0.000	0.6095	Accept
23	Morocco	414.181	0.000	0.826	Accept
24	Portugal	353.655	0.000	0.695	Accept
25	Sri Lanka	451.345	0.000	0.812	Accept
26	Venezuela	273.353	0.000	0.508	Reject
27	Colombia	300.666	0.000	0.653	Accept

28	Chile	382.275	0.000	0.692	Accept
29	Peru	370.102	0.000	0.669	Accept
30	Argentina	273.986	0.000	0.714	Accept

Extraction Method: Principal Component Analysis

The rejection of the countries was based on the Kaiser-Meyer-Olkin (KMO) values of the data of each of the countries keeping in mind the threshold of the KMO values. The acceptance as per the KMO values is defined in the table below:

Table 4.2: KMO Value Threshold

KMO Value	Acceptance Level
0.00 to 0.49	“Unacceptable”
0.50 to 0.59	“Miserable”
0.60 to 0.69	“Mediocre”
0.70 to 0.79	“Middling”
0.80 to 0.89	“Meritorious”
0.90 to 1.00	“Marvellous”

Source: Kaiser (1974)

Thus, the countries with a KMO value less than or equal to the value of “0.5” were rejected given the representation of the data as miserable. Thus, the countries namely Hungary (0.393), Greece (0.488) and Venezuela (0.508) were dropped from the study due to their low KMO values.

The value of significance for the data of all the countries is very small (0.000). This signifies that the factor reduction by the PCA is useful for the data.

Following this, the PCA of all the finally selected twenty-seven countries was performed so as to bring out the principal components for all the countries and plotting of the scree plot for the same.

In total, for the purpose of formulation of the infrastructure index, a total of eleven global development indicators were considered so as to provide a wide variety of data points so as to give a proper representation of the infrastructure for each of the country. The data source for the same is World Bank Database and the duration considered is from 1995 to the year 2015. The indicators considered for the infrastructure index are described in the table number 4.3.

Table 4.3: Indicators considered for Infrastructure Index

S.No.	Name	Abbreviation Used	Definition	Source
1	Mobile cellular subscriptions	MCS	Total number of public mobile telephone subscriptions (both prepaid and post-paid).	WDI (World Bank)
2	Air transport, freight (million ton-km)	ATF	Freight, express and diplomatic baggage carried on each flight stage in metric tonnes times kilometres travelled.	WDI (World Bank)

3	Electric power consumption (kWh per capita)	ELC	Electricity production by all power plants less the losses (transformation, distribution, transmission, heat).	WDI (World Bank)
4	Energy use (kg of oil equivalent per capita)	EUG	Primary energy before transformation to other end-use fuels less the fuels to ships and aircrafts engaged in international routes.	WDI (World Bank)
5	Energy use (kg of oil equivalent) per \$1,000 GDP (constant 2011 PPP)	EUGPG	Kilogram of oil equivalent energy used per constt PPP GDP.	WDI (World Bank)
6	Railways, goods transported (million ton-km)	RLG	Metric tonnes times kilometres travelled volume of goods transported by railways.	WDI (World Bank)
7	Railways, passengers carried (million passenger-km)	RLP	Total number of passengers transported by railways times the total kilometres travelled.	WDI (World Bank)
8	Rail lines (total route-km)	RLL	Total stretch of railway tracks available for train service.	WDI (World Bank)
9	Fixed telephone subscriptions	FTS	Total active number of analogue fixed telephone lines.	WDI (World Bank)
10	Fixed telephone subscriptions (per 100 people)	FTSP	Weighted average of total fixed telephone lines per 100 people.	WDI (World Bank)
11	Air transport, passengers carried	ATPC	Total number of both domestic as well as international passengers carried.	WDI (World Bank)

#### 4.2 Unit Root Test

Further, Unit Root Testing was done to check the stationarity of all the series taken into account. It is important that all the series that are taken into account are either stationary or non-stationary.

Table 4.4: Unit Root Tests

Method	FDI	GDP	GDP Growth	Exchange Rate	Trade Openness	Inflation	Infrastructure	Natural Resources	Bank Z-Score
LLC t	-6.3359	-21.891	-3.53694	-9.05394	-6.7378	-7.46307	-8.0560	-2.60785	-8.60973
	(0.0000)*	(0.0000)*	(0.0002)*	(0.0000)*	(0.0000)*	(0.0000)*	(0.0000)*	(0.0046)*	(0.0000)*
IPS W-stat	-5.6067	-6.7266	-7.4684	-6.3796	....	-4.94342	-1.4225	-0.78352	-7.67417

		(0.0000)*	(0.0000)*	(0.0000)*	(0.0000)*	....	(0.0000)*	(0.0774)***	(0.2167)	(0.0000)*
ADF - Fisher	-square	123.151	78.5426	158.360	345.328	110.730	130.866	89.7725	71.0523	146.373
		(0.0000)*	(0.0162)**	(0.0000)*	(0.0000)*	(0.0000)*	(0.0000)*	(0.0016)*	(0.0597)***	(0.0000)*
PP - Fisher	-square	143.444	37.0822	254.241	131.223	133.751	400.092	144.534	66.1418	105.372
		(0.0000)*	(0.9618)	(0.0000)*	(0.0000)*	(0.0000)*	(0.0000)*	(0.0000)*	(0.1243)	(0.0000)*

Note: (\*), (\*\*), (\*\*\*) represent significance levels at 1%, 5% and 10% respectively.

Value in parentheses represent p-values

As is evident from the table above, the p-values are significant and thus, the unit root tests signify that the considered series are stationary in nature. The variables FDI, GDP, GDP Growth, Inflation & Bank Z-Score are stationary with “Intercept and Trend”; Exchange Rate, Infrastructure & Natural Resources with “Individual Intercept” and Trade Openness with “Neither Intercept nor Trend”.

### 4.3 Descriptive Statistics

Table 4.5: Descriptive Statistics

	Mean	Maximum	Minimum	Std. Dev.	Observations
EXGRT	470.2394	13389.41	0.045845	1750.225	567
FDII	10767.58	135610.0	-4550.37	18699.79	567
FCGDP	574305.9	8908301.0	12246.58	977093.9	567
GFCGDP	0.044987	0.377854	-0.13127	0.041778	567
INFCPI	107.1967	656.2220	1.853386	51.15522	567
INFRI	2.29E-09	2.439789	-2.79815	0.994496	567
NTROS	15.90647	93.84781	0.001621	23.11795	567
TOPN	0.465395	1.967407	0.066977	0.329538	567
Z_SCR	14.35877	93.74000	-2.71	10.53370	567

Analysis done on EViews 9 by the user

The test for the descriptive statistics was done using the EViews V9 Statistical software package. This analysis was done for 567 data points from 1995 to 2015 for all the twenty-seven countries. It is important to note that the least value of FDII is “-4550.37 million US\$”. A negative situation indicates that the disinvestment by the foreign firms was more than the investment in that period.

The FCGDP, proxy taken for the nation’s economic prowess, explains the size of the economies considered for this study for the selected period and it ranges from “12246.58million

US\$”to“8908301.0million US\$”. This serves to represent that a wide mix of nations is taken under consideration for the study.

In the selected twenty-seven countries, the mean growth of the emerging economies (GDP Growth as proxy) is 4.49 percent over the study period. The values of TOPN range from “0.067” to “1.97”.

#### 4.4 Correlation

Table 4.6 shows tabulation of correlation among all the variables with the respective significance levels. It is possible that the correlation amongst data series is just by chance. Correlation Test, thus, helps to check whether the correlation computed holds any significance or not.

Thus, if the value or the correlation coefficient is less than the significance level of  $\alpha=0.80$ , we can reject the null hypothesis and reaching the conclusion that the derived correlation between the data sets is significant in nature (Field, 2009). The Pearson Correlation coefficient is the extraction method to calculate the inter element correlation coefficient “ ”.

As observed from the table 4.15, no value of  $r$  is more than 0.80. Thus, it can be inferred there happens to be no multi-collinearity problem between the variables (Field, 2009), and it further fulfils one of the important preconditions for performing Regression Analysis. The maximum correlation exists among TOPN & FDII (0.350097) and a high inverse correlation is there among Z\_SCR & EXGRT.

Table 4.6: Correlational Matrix

Correlation p-value	FDII	FCGDP	TOPN	INFCPI	INFRI	GFCGDP	EXGRT	NTROS	Z_SCR
FDII	1.000000								
	-----								
FCGDP	-0.189175*	1.000000							
	(0.0000)	-----							
TOPN	0.350097*	-0.172318*	1.000000						
	(0.0000)	(0.0000)	-----						
INFCPI	0.231160*	0.075710**	0.390273*	1.000000					
	(0.0000)	(0.0716)	(0.0000)	-----					
INFRI	0.209099*	0.136135*	0.250786*	0.362698*	1.000000				
	(0.0000)	(0.0012)	(0.0000)	(0.0000)	-----				
GFCGDP	0.108756*	-0.011640	0.077521**	0.027244	0.040477	1.000000			
	(0.0096)	(0.7821)	(0.0651)	(0.5174)	(0.3360)	-----			
EXGRT	-0.112442*	0.138115*	-0.060754	0.128833*	0.034204	-0.001491	1.000000		
	(0.0074)	(0.0010)	(0.1485)	(0.0021)	(0.4163)	(0.9717)	-----		
NTROS	-0.044642	-0.024003	0.019615	-0.012690	0.054649	0.186246*	0.055037	1.000000	
	(0.2886)	(0.5684)	(0.6412)	(0.7630)	(0.1938)	(0.0000)	(0.1907)	-----	
Z_SCR	0.145820*	-0.239933*	0.162008*	0.056480	0.000324	0.164398*	-0.360330*	0.129722*	1.000000
	(0.0005)	(0.0000)	(0.0001)	(0.1793)	(0.9939)	(0.0001)	(0.0000)	(0.0020)	-----

Extraction Method: Variance Analysis (Ordinary)

Note: (\*) (\*\*) represent rejection of the null hypothesis at 1% and 10% significance level respectively.

#### 4.5 Regression Analysis

Table 4.7: Determinants of FDII

	Robust OLS	Q.10	Q.25	Q.50	Q.75	Q.90
FCGDP	-0.001056 (0.001075)	0.002688* (0.000715)	0.001363 (0.000835)	-0.001881 (0.001632)	-0.009417* (0.002552)	-0.014991* (0.003722)
TOPN	0.01108* (0.002056)	0.005882* (0.001750)	0.010287* (0.002164)	0.014798* (0.002244)	0.010323** (0.004225)	0.011746*** (0.007021)
INFCPI	0.008835* (0.002875)	0.007726* (0.001452)	0.007905* (0.001767)	0.006460*** (0.003599)	0.012387 (0.007931)	0.020904* (0.005046)
INFRI	0.002895* (0.000576)	0.000675*** (0.000401)	0.001303** (0.000552)	0.002869* (0.000807)	0.002981** (0.001424)	0.001682 (0.001356)
GFCGDP	0.027345** (0.012897)	0.025641* (0.009315)	0.018409 (0.014610)	0.010613 (0.014622)	0.050069** (0.024674)	0.021289 (0.038129)
EXGRT	-0.00231* (0.000551)	-0.001709* (0.000449)	-0.002370* (0.000598)	-0.002544* (0.000814)	-0.002487** (0.000993)	-0.001486 (0.001813)
NTROS	0.000204 (0.002330)	-0.007193* (0.002052)	-0.002996 (0.003035)	-0.000305 (0.003543)	0.005172 (0.006654)	0.003503 (0.007375)
Z_SCR	1.01E-05 (5.62E-05)	-1.72E-07 (3.46E-05)	-1.91E-05 (4.14E-05)	-5.55E-06 (9.81E-05)	5.42E-05 (0.000159)	4.99E-05 (0.000193)
Constant	0.01271 (0.007966)	-0.019013* (0.004874)	-0.005290 (0.005676)	0.024104** (0.012208)	0.059225* (0.018792)	0.085971* (0.016350)
Adjusted Robust R <sup>2</sup>	0.142343	0.086098	0.111580	0.111150	0.113371	0.158039

Note: (\*), (\*\*), (\*\*\*) represent significance levels at 1%, 5% and 10% respectively.

The table number 4.7 represents the relation of the explained variable (FDI Inwards) with the explanatory variables. The data is studied in five quartiles at 10 percent, 25 percent, 50 percent, 75 percent and 90 percent.

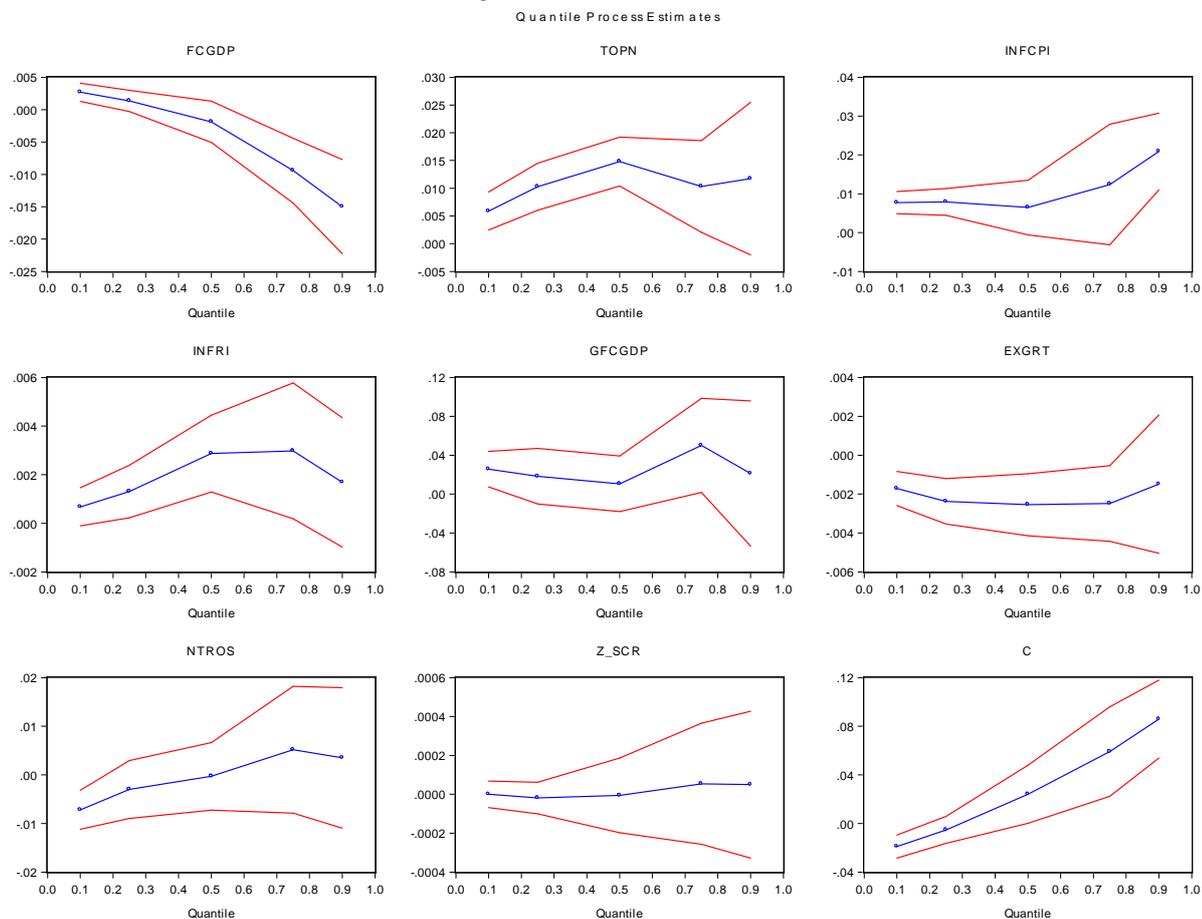
The above regression gives a good estimate of what factors are more influential on their impact on the FDII studying the impact of the explanatory variables over a select section or *quantile* of the panel series.

The initial conclusion that can be inferred from the above is that the effect of the Z\_SCR is very minimalistic over FDII and thus proving that the financial health has insignificant impact on the FDI inflow.

TOPN is the most significant factor in the performance of the explained factor FDII proving the hypothesis that trade openness (and in turn exports and imports of a nation) directly influence the Inward FDIs. For the first two quartiles “Q 0.25” and “Q 0.50”, the FCGDP holds a significant positive value, which turn negative over the next three quartiles.

The NTROS remains insignificant for all the quartiles but one. The EXGRT has a significant negative relation with FDII over all the quartiles. The values for the factor INFRI highlight a positive relation with FDII consistently over all the quartiles. A positive trend over the select quartiles is seen with GFCGDP. FCGDP shows significance in the initial and the last two quartiles. The trend shown by INFCPI remains significant throughout with the exception of one quartile.

Fig 4.1: Quantile Process Estimates



## 5. DISCUSSIONS AND CONCLUSION

### 5.1 Conclusion

The available literature on FDIs posits a fair impression regarding the subjective expansion of the existing theories on FDI inflows and the pragmatic application of the said theories in existent economic setting. Application of these theories, however, remains an inquisitive question from the prospect of developing nations; however, it creates an opportunity to discern the applicability of some of these theories on a particular economy. The study of the existing literature was performed extensively for highlighting and identifying the contributing and influential explanatory factors for the inflow of the foreign investment that are direct in nature, which further followed by the study of the viability of these selected factors.

Taking various researches as a base, as many as eight explanatory factors were selected to study FDI Inflows over a period of 1995 to 2015. The study was confined to the top emerging markets of the world studying twenty-seven countries, which were shortlisted after the preliminary examination of the emerging nations included in the list of the MSCI's Emerging Markets Index.

A Quantile Regression (QR) was employed for analysing the impact of the select eight explanatory variables over the explained variable, FDI Inwards. Post QR, as many as seven out of eight variables were found to have significant impact on inflows of direct investment. The factor "Z\_SCR" was found insignificant proving the condition of the country's financial health doesn't have much to do with the inflows of FDI.

The study found inverse relation between EXGRT and FDII, this outcome is in line with the previous research. Thus, as exchange rate falls, it encourages the foreign players to cross their boundaries to enter new

markets (Tolentino, 2010). The results for INFCPI are also in consistency with the findings of Boateng, Hua, Nisar, Wu (2015), they argue that Inflation is a positive condition for the growth of FDI inflows in a nation.

The results also align to the arguments made by Srinivasan (1998), which signifies that INFRI is one of the most prominent factor for the FDII, proving a good level of infrastructure does holds its importance to promote and influence the inward foreign investment. The results also support the findings by Grossman and Helpman(1991) establishing a positive relation between TOPN and FDII. The results do not support the Market Size Hypothesis and according to the findings, the market size (proxied by FCGDP) has nothing much to do with the FDI. The same can also be supported in the light of the results of the GFCGDP. Findings also support the arguments made by Soumaré, and Tchana Tchana (2011) that no significant relationship exist between FDII and NTROS.

Thus, the study establishes causal relationships of the selected variables with the inflow of FDI and most of the outcomes of this study supports the available literature in the context of the emerging nations globally (for details, refer Table: 5.1). The factors identified are domineering to boost the FDI inflows in a nation. Thus, the national policy makers must focus on these determinants to enhance the performance of FDI inflows in a nation while framing the policy framework.

Table 5.1: Hypotheses Conclusions

Hypotheses	Acceptance	Studies Supported
H <sub>01</sub>	Rejected	Boateng, Hua, Nisar, Wu (2015)
H <sub>02</sub>	Accepted	Nunnenkamp (2002); Loree and Guisinger (1995)
H <sub>03</sub>	Accepted	Hausmann and Fernandez- Arias (2000)
H <sub>04</sub>	Rejected	Srinivasan,(1998); Vijayakumar <i>et al.</i> (2010); Apkan <i>et al.</i> (2014)
H <sub>05</sub>	Rejected	Grossman and Helpman, (1991); Liu <i>et al.</i> , (2001); Mina, (2007)
H <sub>06</sub>	Rejected	Healy and Palepu (1993)
H <sub>07</sub>	Accepted	Soumaré, I., & Tchana Tchana, F. (2011)
H <sub>08</sub>	Accepted	Soumaré, I., & Tchana Tchana, F. (2011)

## 5.2 Future Scope

- The scope of the study was limited to the emerging markets of the world only taking MSCI Index as reference. Henceforth, it is conceivable to conduct related research in view of the developed countries accompanied by developing nations. It will also permit making contrast between developed and developing countries.
- The extent of the study goes from 1995 to 2015 due to accessibility of data and time constraints. The unobtainability and discrepancy of the data was a key restraint due to which, some nations along with factors had to be dropped. For future development, it is possible to increase the period of the work and including more independent variables to boost the descriptive power of the model.

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## REFERENCES

- Akpan, U. S., Isihak, S. R., & Asongu, S. A., (2014). “Determinants of Foreign Direct Investment in Fast-Growing Economies: A Study of BRICS and MINT”, African Governance and Development Institute Working Paper No. 14/002.
- Aleksynska, M., Havrylchyk, O. (2011). FDI from the South: The role of institutional distance and natural resources.
- Aliber, R.Z. (1970). A Theory of Direct Foreign Investment. In: Kindleberger, C.P., ed, *The International Corporation*, Cambridge: MIT Press, 17-34.
- Aliber, R.Z. (1971). The Multinational Enterprise in a Multiple Currency World. In: Dunning, J.H., ed., *The Multinational Enterprise*, London: Allen and Unwin, 49-56.
- Basu, P., C. Chakraborty and D. Reagle (2003), ‘Liberalization, FDI, and Growth in Developing Countries: A Panel Cointegration Approaches’, *Economic Inquiry*, 510-516.
- Bénassy-Quéré, A., Fontagné, L., & Lahrèche-Révil, A. (2005). How does FDI react to corporate taxation?. *International Tax and Public Finance*, 12(5), 583-603.
- Billington, N. (1999). The location of foreign direct investment: an empirical analysis. *Appl. Econ.* 31, 65–75.
- Boateng, A., Hfua, X., Nisar, S., Wu, J. (2015). “Examining the determinants of inward FDI: Evidence from Norway”. *ScienceDirect*.
- Buckley, P.J., Clegg, L.J., Cross, A.R., Xin, L., Voss, H., Ping, Z. (2007). The determinants of Chinese outward foreign direct investment. *J. Int. Bus. Stud.* 38, 499–518.
- Buckley, P.J. and Casson, M.C. (2009). The Internalisation Theory of the Multinational Enterprise: A Review of The Progress of a Research Agenda After 30 Years. *Journal of International Business Studies*, 40, 1563–1580.
- Daniel, A. (2010). Foreign Direct Investment in East Africa. A Comparative Analysis of its Investment Laws. Mimeo.
- Daniels, J.D., Radebaugh, L.H. and Sullivan, D.P. (2004). *International Business: Environments and Operations*. 10 ed., Pearson Prentice Hall: New Jersey.
- Dunning, J.H. (2001). The Eclectic (OLI) Paradigm of International Production: Past, Present and Future. *International Journal of the Economics of Business*, 8 (2), 173-190.
- Dunning, J.H. (1981a). Explaining the International Direct Investment Position of Countries: Towards a Dynamic or Developmental Approach. *Review of World Economics*, 117 (1), 30-64.
- Dunning, J.H. (2009). Location and the multinational enterprise: a neglected factor? *J. Int. Bus. Stud.* 40, 5–19.
- Edwards, S. (1990). Capital Flows, Foreign Direct Investment and Debt- Equity Swaps In Developing Countries. Working Paper No. 3497.
- Eiteman, D.K., Stonehill, A.I. and Moffett, M.H. (2010). *Multinational Business Finance*. 12th ed., Pearson Prentice Hall: Boston.
- Elfakhani, S. & Mulama, N.S. (2011). “Determinants of FDI in Emerging Markets: The Case of Brazil, China, and India”, *International Journal of Business Management and Economics Research*, Vol, 2, No 2. Retrieved February 14, 2016, from <http://www.ijbmer.com/docs/volumes/vol2issue2/ijbmer2011020204.pdf>
- Field, A. (2009). *Discovering Statistics Using SPSS*. London: Sage Publications.
- Gaughan, P.A. (2005). *Merger: What Can Go Wrong and How to Prevent It*. John Wiley & Sons Inc.: New Jersey.
- Gladwin, T.N. and Giddy, I.H. (1973). A Survey of Foreign Direct Investment Theory. Division of Research, Graduate School of Business Administration, University of Michigan Working Paper, 86, 1-46.
- Griffin, R., Pustay, M. (2007). “International Business: A Managerial Perspective”.
- Grossman, G.M and E. Helpman (1997), ‘Innovation and Growth in the Global Economy’, Cambridge, MA: MIT Press.
- Grossman, G., Helpman, E. (1991). *Innovation and Growth in the Global Economy* Cambridge. MIT Press, Cambridge.
- Hausmann, R., and Fernandez-Arias, E. (2000). “Foreign Direct Investment: Good Cholesterol?,” *Inter-American Development Bank Working Paper No. 417* (Washington).
- Healy, P.M., Palepu, K.G. (1993). International Corporate Equity Acquisitions: Who, Where and Why? In: Froot, Kenneth A. (Ed.), *Foreign Direct Investment*. The University of Chicago Press, Chicago and London
- Huyen, H. (May 2011). The determinants of Foreign Direct Investment Inflows: The case of India. *Jonkoping International Business of School*, 3-35.
- Hymer, S.H., (1960). *The International Operations of National Firms, A Study of Direct Foreign Investment*. Cambridge, MA: MIT Press.
- Jadhav, P. (2012). Determinants of Foreign Direct Investments in BRICS Economies: Analysis of Economic, Institutional and Political Factors. *Procedia-Social and Behavioral Sciences*, 37, 5-14.
- Jeon, N.B., Rhee, S.S. (2008). The determinants of Korea's foreign direct investment from the United States, 1980–2001: an empirical investigation of firm-level data. *Contemp. Econ. Policy* 26 (1), 118–131.
- Kaiser, H. (1970). A second generation little Jiffy. *Psychometrika*, 35, 401-415.
- Kaiser, H. (1974). An index of factorial simplicity, *Psychometrika*, 39, 31-36.

- Kindleberger, Charles P. (1969). *American Business Abroad: Six Lectures on Direct Investment*. New Haven: Yale University Press.
- Knickerbocker, F. T. (1973). Oligopolistic Reaction and Multinational Enterprise. *The International Executive*, 15(2), 7-9.
- Kocenda, E; Cerný, A (2014). *Elements of Time Series Econometrics: An Applied Approach*. Prague: Karolinum Press.
- Koenker, R., & Bassett, Jr. G. (1978), "Regression quantiles", *Econometrica*, 46, pp.33-50.
- Kothari, C. (2004). *Research Methodology*. New Delhi: New Age International Publishers.
- Levy Yeyati, E., Stein, E. and Daude, C. (2003). Regional Integration and the Location of FDI. Inter-American Development Bank, Working Paper492, 1-33.
- Liu, X.M., Wang, C.G., Wei, Y.Q. (2001). Causal links between foreign direct investment and trade in China. *China Econ. Rev.* 12, 190–202.
- Lizondo, J.S., 1990. Foreign Direct Investment. IMF Working Paper, WP/90/63, 1-28.
- Loree, D., and Guisinger, S. E. (1995, February), "Policy and Non-policy Determinants of U.S. Equity Foreign Investment," *Journal of International Business*, 32: 281-299.
- Meyer, K.E. and Estrin, S. (1999). Entry Mode Choice in Emerging Markets: Greenfield, Acquisition, and Brownfield. CEES Working Papers, 18, 1-29.
- Meyer, K. (1998). Determinants of Direct Investment: A Review of the Literature. *Direct Investment in Economies in Transition*, Cheltenham: Elgar, 59-79.
- Mina, W. (2007). The location determinants of FDI in the GCC countries. *J. Multinat. Financ. Manag.* 17, 336–348.
- Moosa, I.A. (2002). *Foreign Direct Investment: Theory, Evidence and Practice*. Palgrave: New York, 23-39.
- Nayak, S., Aggarwal, V. and Mann, P. India's Manufacturing Exports Dynamics: An Analysis of Technology Intensity Transition, 20-26.
- Nunnenkamp, P. (2002). Determinants of FDI in Developing Countries: Has Globalization Changed the Rules of the Game? Kiel Working Paper No. 1122, available at <http://www.kms1.isn.ethz.ch/serviceengine/Files/ISN/103170/.../en/kap1122.pdf>, accessed on line 25/10/2010.
- Phillips, P. C., & Perron, P. (1988). Testing for a unit root in time series regression. *Biometrika*, 75(2), 335-346.
- Resmini, L. (2001). The determinants of foreign direct investment into the CEECs: new evidence from sectoral patterns. *Economics of Transition*, 8, 665–689.
- Shamsuddin, A. F. M. (1994). Economic Determinants of Foreign Direct Investment in Less Developed Countries, *The Pakistan Development Review*, 33(1), 41 – 51.
- Sharma, K. (2003). "Factors determining India's export performance". *Journal of Asian Economics* 14 (2003) 435–446
- Soumaré, I., & Tchana Tchana, F. (2011). Causality between FDI and financial market development: Evidence from emerging markets. *The World Bank Economic Review*, 29(suppl\_1), S205-S216.
- Srinivasan, T. N. (1998). India's export performance: A comparative analysis. In I. J. Ahluwalia & I.M.D. Little (Eds.), *India's economic reforms and development essay for Manmohan Singh*. Delhi: Oxford University Press.
- Tolentino, P.E. (2010). Home country macroeconomic factors and outward FDI of China and India. *J. Int. Manag.* 16, 102–120.
- Tsai, P. L. (1994). Determinants of foreign direct investment and its impact on economic growth. *Journal of economic development*, vol 19, number 1.
- Vernon, R., (1966). International Investment and International Trade in the Product Cycle. *The Quarterly Journal of Economics*, 80 (2), 190-207.
- Vernon, R. (1966). International investment and international trade in the product Cycle. *Q. J. Econ.* 80, 190–207.
- Vijayakumar, N., Sridharan, P., & Rao, K. C., (2010). "Determinants of FDI in BRICS Countries: A panel analysis". *Int. Journal of Business Science and Applied Management*, 5(3), pp.1-13
- Wheeler, D., Mody, A. (1992). International investment location decisions: the case of US firms. *J. Int. Econ.* 33, 57–76.
- Yang, J.Y.Y., Groenewold, N., Tcha, M. (2000). The determinants of foreign direct investments in Australia. *Econ. Rec.* 76, 45–54.
- Zhao, H. (2003). Country factor differentials as determinants of FDI flow to China, *Thunderbird International Business Review*, 45(2), 149 – 169.