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Impact of Foreign Direct Investment (FDI) inflow on Gross Domestic Product (GDP) of India—an Empirical study.

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ABSTRACT : *This paper investigated the relationship between Foreign Direct Investment (FDI) and Economic growth in India within the period from 1990 to 2012 .FDI has played a significant role in the growth and development of Indian economy. Our GDP has grown almost six-fold since the year 1990 till 2012. FDI plays multidimensional role in the overall development. It may generate benefits through bringing non-debt creating foreign capital resources, technology up-gradation, skill enhancement, new employment, spillovers and allocative efficiency effects. Thus, FDI acts as a catalyst for domestic industrial development and is considered to be an important vehicle for economic development. To that end, we used the graphical presentation and correlation test and regression analysis between foreign direct Investment Inflows to India and GDP (in whole and per capita) of India during that period. The study enables us to conclude that FDI causes growth of GDP of India in a greater extent. The study concludes and recommends improvement in the investment climate for foreign capital to enhance competitiveness and strengthens the bargaining position of the country in the emerging globalised economy.*

KEY WORDS: *Foreign Direct Investment, GDP, per capita GDP, correlation test, simple regression analysis.*

I. INTRODUCTION:

The most remarkable feature of the contemporary world has been the proliferation of private capital flow in the form of Foreign Direct Investment (FDI) in developing countries, especially since 1990s.Since 1980s, multinational corporations (MNCs) have emerged as major actor in the globalization context. Different countries governments around the world ---in both developed and developing countries have been attracting MNCs to come to the respective countries with their FDI. This phenomenon may be related to the broader context of liberalization in which most developing and transition countries have moved to market-oriented strategies. The word "Globalisation"is increasingly testing the ability of regional economies to adapt and maintain their competitive edge. Performance gaps are widening between regions, and rapid technological change, extended markets and a greater demand for knowledge are offering new opportunities for regional development. Yet this calls for further investment from enterprises, re-organization of labour and production, upgrading skills and improvement in the local environment. Some regions with poor links to the sources of prosperity, afflicted by environmental problems, migration, and lagging behind in infrastructure and private investment, are finding it difficult to keep up with the general trends. India is a country where regional development is of a foremost priority. The population is dispersed , although unevenly over a huge land mass with rural regions being in habituated by more than 1236686732 by the year ending 2012.Since the launch of the economic reforms in 1991, India's development policies have gradually shifted towards comparative advantage and open door policy.

Global foreign direct investment flows increased by only 4.5% in 2013 and remain 30% below pre-crisis levels (reached in 2007), while international mergers and acquisitions(M&A), an important component of FDI, were down sharply in the first quarter of 2014. The equity component of FDI outflows(for countries that reported this breakdown) declined by 40%, from $347billion in 2011 to $215billion in 2012 to $87billion in 2013.As reported in the February'2014 edition on FDI ,this sluggish performance would seem to owe to a number of sources of uncertainty that are discouraging multinational companies(MNCs) from investing, including persistent Eurozone sluggishness, slowing growth in China, and fears regarding the financial stability of emerging markets in general. Recently heightened geopolitical tensions in eastern Ukraine, the Korean Peninsula, and the Middle East are probably also moderating the international investment ambitions of MNCs. This would seem to be reflected in international merger and acquisition(M&A) activity, a strong leading indicator for FDI, which was down sharply(-26%) in the first quarter of this year.

India in Comparison with China:

China has consistently maintained its highest rank over the decade among the top 10FDI destinations in developing Asia, exhibiting increasing FDI inflows from around $14billion in 1991-93 to more than $41 billion in 1998-2000.But at the same time, it is also evident that while India did not figure out among the top 10FDI-destination in 1991-93, it has managed to acquire the eighth position in late 1990s with annual FDI inflows of $2.4 billion.FDI inflows to India have risen albeit marginally to $3.45 billion in 2002 from 3.40billion in 2001 and to $4.27 billion in 2003, though there was a sharp fall in the global FDI inflows during the same time. India’s share in the FDI inflows to the developing India’s share in the FDI inflows to the developing world has been steadily increasing from 0.92 percent in 2000 to 2.48 percent in 2003.

India and FDI – *an overview:*The economic policymakers in most countries go out of their way to attract Foreign Direct Investment (FDI).There is clearly an intense global competition for FDI. India, for its part, has set up the “India Brand Equity foundation” to try and attract that elusive FDI dollar. India has adopted a path of liberalization since 1997 (more than ten years after China’s open door policy), by gradually shedding its FDI restrictions and allowing FDI through automatic route barring a few strategic industries of security concern. FDI in India is freely allowed in all sectors, including the services sector, save where the notified sectoral policy does not permit FDI beyond a ceiling.FDI for virtually all items/activities could be brought in through the automatic route under the power vested with the RBI and for the remaining items/activities, through Government approvals.

Until 1991, India relied more on bilateral and multilateral loan agreements with long maturities, and relatively lesser on FDI. FDI inflows was allowed only in designed industries with varying conditionalities imposed upon them regarding the scope and extent of domestic participation in the joint venture agreements such as local content requirements, export obligations, local R&D promotion, etc. India’s market –oriented economic reforms undertaken in 1991 were directed towards increased liberalization, privatization and deregulation of the industrial sector, and to re-orient the economy towards global competition by reducing trade barriers, and gradually opening up its capital account.

The concept of FDI
What is FDI?

FDI is an important constituent of the globalization efforts of the world economy.FDI flows constitute capital provided by foreign investors, directly or indirectly to enterprises in another economy with an expectation of obtaining profits derived from the capital participation in the management of the enterprise in which they invest. The foreign investors acquire ownership of assets in the host country firms in proportion to their equity holdings. FDI by definition supposed to reflect a long-term commitment as it involves normally a stake of 10% or more in a host country enterprise, together with managerial control. This is the empirical definition of FDI adopted by many countries to distinguish it from portfolio flows.

IMF Definition of FDI: According to the International Monetary Fund (IMF),Balance of Payment Manual(BPM)5, paragraph359, FDI is the category of international investment that reflects the objective of a resident entity in one economy (“direct investor” or parent enterprise) obtaining a ‘lasting interest’ in an enterprise resident in the notion of “lasting interest” are:

- The existence of a long-term relationship between the direct investor and the enterprise and
- The significant degree of influence that gives the direct investor an effective voice in the management of the enterprise.

The concept of lasting interest is not defined by IMF in terms of a specific time frame, and the more pertinent criterion adopted is that of the degree of ownership in an enterprise. A direct investment relationship is established when the direct investor has acquired 10 percent or more of the ordinary shares or voting power of an enterprise abroad. Thus, the IMF threshold is 10% ownership of the ordinary shares or voting power or the equivalent for unincorporated enterprises. Direct investment comprises not only the initial transaction establishing the FDI relationship between the direct investor and the direct investment enterprise but all subsequent capital transactions between them and among affiliated enterprises resident in different economies. According to IMF, there are a number of popular misconceptions about what FDI are (IMF, 2003):-

- FDI does not necessarily imply control of the enterprise, as only a 10 percent ownership is required to establish a direct investment relationship.
- FDI does not comprise a “10 percent ownership” (or more) by a group of “unrelated” investors domiciled in the same foreign country—FDI involves only one investor or a “related group” of investors.

LITERATURE REVIEW: The relationship between foreign direct investment (FDI) and economic growth has motivated voluminous literature focusing on both industrial and developing economies. Hansen and Rand (2006) found that there is strong causal link between FDI and GDP for a group of 31 developing countries during 1970-2000.De Mello (1997) point out that FDI had significantly positive effect on economic growth for the countries with high income. In a study investigating 140 countries , Ghatak and Halicioglu found that FDI has a positive impact on real per-capita GDP(Ghatak and Halicioglu,2006).Furthermore Roy and Berg also found evidence of positive and significant impact of the share of FDI in GDP on economic growth for the US by using SEM(Roy & Berg,2006).According to Chaturvedi(2011) there is high degree of correlation between FDI and economic development. In the mid-2000s, Kawasakii, Siemens and other European and Japanese companies began producing high –speed trains in China. They now have competition from domestic companies, such as China South Locomotive & Rolling Stock Corp, that manufacture trains with speeds of up to 236 miles per hour. By admission of foreign companies, the domestic firms learned from the technology and techniques of their foreign counterparts. This kind of technology transfer is the reason many developing counties are encouraged to attract foreign direct investment (FDI) as a means of advancing their own domestic industries.

The theory is that the technology, knowledge and techniques brought in by experienced foreign investors and managers will spill over to locally-owned firms. FDI and other forms of international investment were thought to play a role, for example in the rapid economic growth of the Asian Tigers (Singapore, South Korea, Hong Kong, and Taiwan) from the 1960s to the 1990s.In the 1990s, FDI was the biggest source of external financing in developing economies. However questions remain about the conventional wisdom regarding FDI , some research suggests that it may provide little net economic benefit and could actually harm domestically – owned plants.While Aitken and Harrison’s study provides a compelling argument against the commonly held wisdom that foreign direct investment is good for developing countires because of technology spillovers, the degree to which the findings can be generalized to all economies is limited.The study improved on previous research by factoring in foreing investor’s tenency. “ to locate in more productive sectors and to invest in more productive plants” It is possible, however, that unique aspects of Venezuela or the 1976-89 timeframe present results atypical from what is truly the norm. More than a decade after Aitken and Harrison’s work, there is still disagreement about the impact of FDI on developing economies.

The objective of the research: The focus of this article is impact of FDI inflow on the growth of GDP of the country and per capita GDP as well.Keeping these backdrops and issues in view, this paper has set the following objectives:To determine the correlation of FDI on GDP of the country and
To determine the impact of FDI on the increase of per capita GDP of India.
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Hypothesis of the study:
Hypothesis-1
Null Hypothesis-H_0: There is no correlation between FDI inflow and growth of GDP of India.
Alternate Hypothesis:H_1: There is strong and positive correlation between FDI inflow and growth of GDP of India.
Hyothesis-2
Null H_0: there is no relationship between FDI inflow and per capita GDP of India.
Alter H_2: There is positive and strong corerelation between FDI inflow and per capita GDP of India.

Research methodology: The aim of this research is to examine the impact of FDI inflow on GDP in India. For this study, the raw data used from secondary source which were published by RBI and world Development indicators in the annual reports and web sites .The data relating to FDI inflows and GDP of India and per capita GDP have been taken for the study during the period from 1990 to 2012.For the study and data analysis, 23years raw data used for correlation test, line chart, simple regression analysis. In this model, GDP is dependent variable whereas FDI inflows are independent variable. For calculation of the statistical tools SPSS and spreadsheet has been used.

Data analysis:

Table-1
FDI Inflow (million dollars) and GDP, current prices, billion $US

Year	FDI Inflow(Million Dollars)	GDP, current prices, billion $US
1990	236.7	326.6
1991	75.0	274.8
1992	252.0	293.3
1993	532.0	284.2
1994	974.0	333.0
1995	2 151.0	366.6
1996	2 525.0	399.8
1997	3 619.0	423.2
1998	2 633.0	428.8
1999	2 168.0	466.8
2000	3 588.0	476.6
2001	5 477.6	493.9
2002	5 629.7	523.8
2003	4 321.1	618.4
2004	5 777.8	721.6
2005	7 621.8	834.2
2006	20 327.8	949.1
2007	25 349.9	1 238.5
2008	47 138.7	1 223.2
2009	35 657.3	1 365.3
2010	21 125.4	1 708.5
2011	36 190.4	1 880.1
2012	25 542.8	1 858.7

Source: IMF,World Economic Outlook (April,2014) and UNCTAD,FDI/TNC database(www.unctad.org/fdistatistics).

In Table-1 , the data relating to FDI inflow(in million dollars) and GDP in current prices(in Billion dollars) have been depicted from 1990 to 2012 for the study. We have calculated the correlation test between these two variables and got, r= 0.859** which is significant (where p< 0.01 level of significance).It shows there is perfectly high degree of positive relationship between FDI inflow to India and growth of GDP during the period from 1990 to 2012.

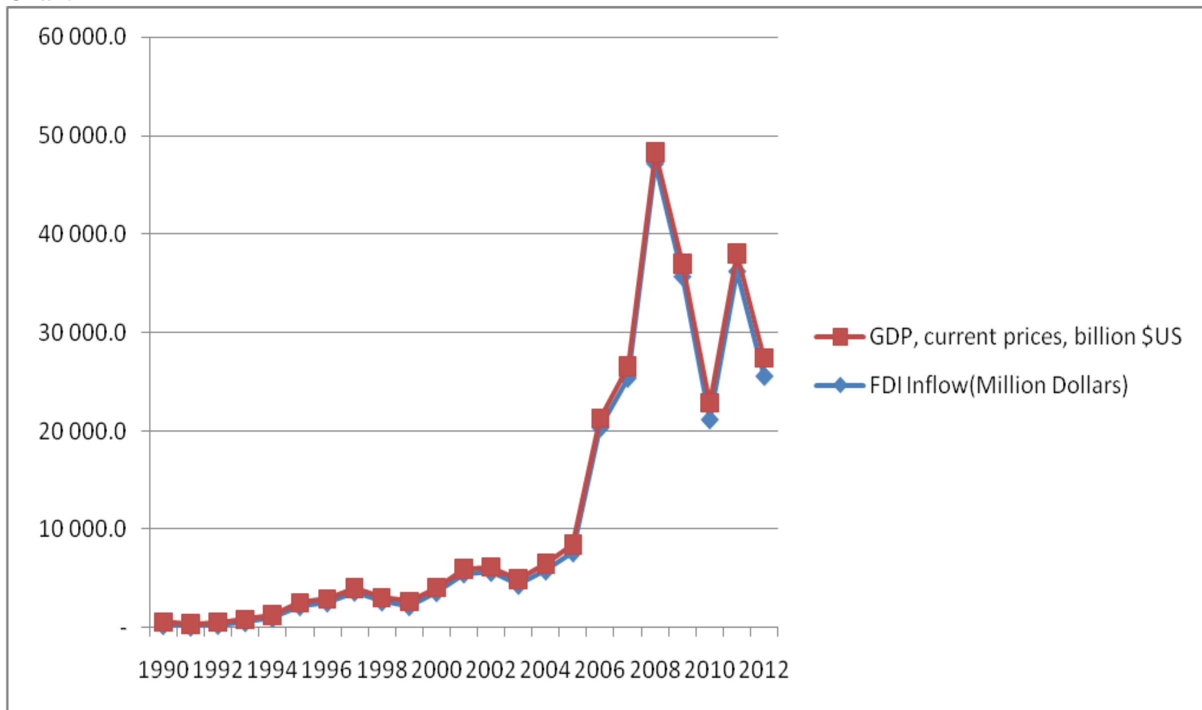
Table-2

Correlations

		FDI Inflow(Million Dollars)	GDP, current prices, billion $US
FDI Inflow(Million Dollars)	Pearson Correlation	1	.859**
	Sig. (2-tailed)		.000
	N	23	23
GDP, current prices, billion $US	Pearson Correlation	.859**	1
	Sig. (2-tailed)	.000	
	N	23	23

**. Correlation is significant at the 0.01 level (2-tailed).

Chart-1



From the chart-1 , we can observe that the movement of line graphs of FDI inflow and growth of GDP in the same direction and changes happened in the similar direction as well. It indicates that there is positive and strong relationship between FDI inflow and GDP of India during the period from 1990 to 2012.Hence, the hypothesis-1 is tested and verified. It is inferred that, null hypothesis is rejected and alternate hypothesis is accepted. From the regression analysis it is noticed that, the high multiple R-value (0.859) indicating a very strong relationship between the independent variable (FDI inflow) and the dependent variable(GDP). The R-square value of 0.739 indicates that 73.9% of the variance in GDP is accounted for by FDI and its square. The F and associated p-value (Significance F, Signif T) reflect the strength of the overall relationship between both independent(FDI Inflow) variables and GDP(F, and signif F) and between each individual independent variable andGDP (t and signif t).

Regression

Table-3

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	FDI Inflow(Million Dollars)[b]	.	Enter

a. Dependent Variable: GDP, current prices, billion $US
b. All requested variables entered.

Table-4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.859[a]	.739	.726	275.1730

a. Predictors: (Constant), FDI Inflow(Million Dollars)

Table-5

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4494280.202	1	4494280.202	59.354	.000[b]
	Residual	1590123.237	21	75720.154		
	Total	6084403.438	22			

a. Dependent Variable: GDP, current prices, billion $US
b. Predictors: (Constant), FDI Inflow(Million Dollars)

Table-6

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	394.965	74.445		5.305	.000
	FDI Inflow(Million Dollars)	.032	.004	.859	7.704	.000

a. Dependent Variable: GDP, current prices, billion $US

FDI Inflow in Million dollars & GDP per capita current $US.

Table-7

Year	FDI Inflow (Million Dollars)	GDP per capita, current $US
1990	236.7	385.4
1991	75.0	318
1992	252.0	332.5
1993	532.0	315.4
1994	974.0	362.4
1995	2 151.0	391.2
1996	2 525.0	418.6
1997	3 619.0	434.7
1998	2 633.0	432.2
1999	2 168.0	462.1
2000	3 588.0	463.1
2001	5 477.6	471.3
2002	5 629.7	492.2
2003	4 321.1	572.3
2004	5 777.8	657.5
2005	7 621.8	748.9
2006	20 327.8	839.9
2007	25 349.9	1080.7
2008	47 138.7	1052.7
2009	35 657.3	1158.9
2010	21 125.4	1430.2
2011	36 190.4	1552.5
2012	25 542.8	1514.6

Source: IMF,World Economic Outlook (April,2014) and UNCTAD,FDI/TNC database(www.unctad.org/fdistatistics).

Table-7 shows the trend in the inflow of FDI and the growth of per capita GDP over the period from 1990 to 2012.From this data, a line graph has been drawn and shown in the chart-2 which depicts there is positive and strong relationship between independent variable (FDI Inflow to India) and growth of per capita GDP during the said period. From the table-8, we can observe that, the correlation between independent variable (FDI inflow) and dependent variable (per capita GDP) is 0.862 which is significant (where $p< 0.01$ level of significance).It shows there is perfectly high degree of positive and strong relationship between FDI inflow to India and growth of GDP during the period from 1990 to 2012.Hence, the hypothesis-2 is tested and verified. It is inferred that, null hypothesis is rejected and alternate hypothesis is accepted.

Chart-2

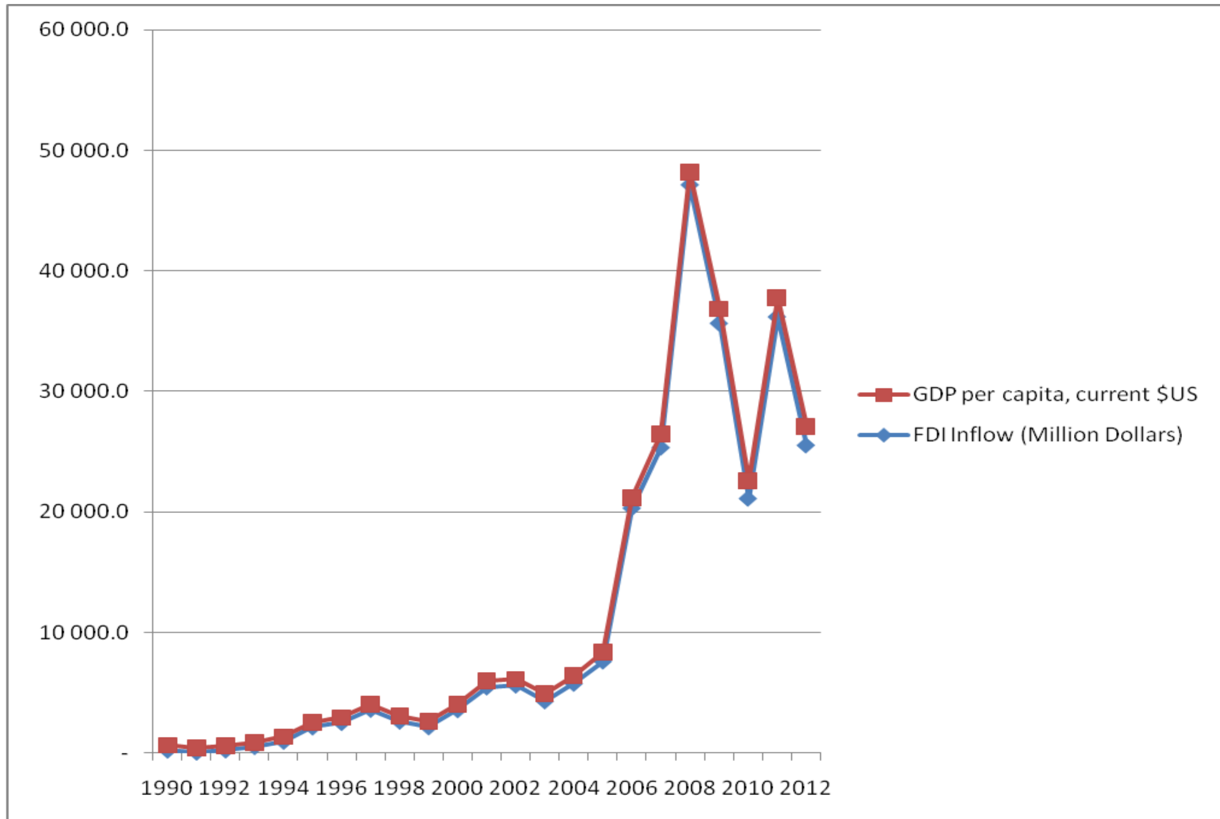


Table-8

Correlations

		FDI Inflow (Million Dollars)	GDP per capita, current $US
FDI Inflow (Million Dollars)	Pearson Correlation	1	.862**
	Sig. (2-tailed)		.000
	N	23	23
GDP per capita, current $US	Pearson Correlation	.862**	1
	Sig. (2-tailed)	.000	
	N	23	23

**. Correlation is significant at the 0.01 level (2-tailed).

Regression

From the regression analysis it is noticed that, the high multiple R-value (0.862) indicating a very strong relationship between the independent variable (FDI inflow) and the dependent variable (per capita GDP). The R-square value of 0.744 indicates that 74.4% of the variance in per capita GDP is accounted for by FDI and its square. The F and associated p-value (Significance F, Signif T) reflect the strength of the overall relationship between both independent(FDI Inflow) variables and GDP(F, and signif F) and between each individual independent variable and GDP (t and signif t).

Table-9

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	FDI Inflow (Million Dollars)[b]	.	Enter

a. Dependent Variable: GDP per capita, current $US
b. All requested variables entered.

Table-10

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.862[a]	.744	.732	209.8493

a. Predictors: (Constant), FDI Inflow (Million Dollars)

Table-11

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2683470.293	1	2683470.293	60.937	.000[b]
	Residual	924771.104	21	44036.719		
	Total	3608241.397	22			

a. Dependent Variable: GDP per capita, current $US
b. Predictors: (Constant), FDI Inflow (Million Dollars)

Table-12

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	408.383	56.772		7.193	.000
	FDI Inflow (Million Dollars)	.025	.003	.862	7.806	.000

a. Dependent Variable: GDP per capita, current $US

II. DISCUSSION AND CONCLUSION:

This study concludes that there is an existence of positive and strong correlation between FDI inflow and growth of GDP in India and per capita GDP as well. The authorities must consider all the other primary and secondary forces for materializing the foreign direct investments (FDI) inflow and their polices for the GDP progress as a whole. Since the FDI is mostly in the form of physical investment, investors would prefer the markets with better infrastructure. The attractiveness of the host country's policy and market also affects the FDI positively and significantly. In order to take a quantum momentum in progress of the economy of India, and place it with high growth phases of the Chinese and East Asian economies, FDI will play a major role. Thus, this paper emphasizes an enlightened FDI policy which is to be framed as a part of the general policy for enhancing investment in this economy under conditions of sustained production efficiency consistently. Further research is encouraged in future to examine on this issue in the years ahead. However, other factors affecting to the host countries negatively due to inflow of foreign direct investment (FDI) cannot be undermined, but these issues should be sorted out positively in the interest of the developing economies.

REFERENCE:

[1] Data from WDI(World Data Indicator), last updated on 05-06-2014.

[2] At the time of writing, 28 countries had reported data on the equity component of their FDI outflows. These countries accounted for 70% of global FDI flows in 2013.

[3] At the time of writing, a number of large deals with the potential to significantly boost International M&A had been announced but not completed, including bids by G.E. and Siemens for the energy business of the French Alstom group and Pfizer's proposed $99billion bid for the UK pharmaceuticals company Astra Zeneca.

[4] UNCTAD,FDI database, available: http://r0.unctad.org/en/subsites/dite/fdistats_files/fdistats.htm.

[5] Following independence, India pursued a development policy based on centralized planning, regulation and control of private enterprise, state ownership, trade protection and limits on the penetration of foreign capital and technology. This regime determined India's economic development until the mid-1980s when there began some movement towards economic liberalization and market orientation. India

experienced a crisis in its blance of payment in early 1991, which threatened to destabilize the economy.

[6] In response to this crisis, the Government implemented a program of structural reforms, aimed at stabilizing the economy and promoting reliance on market mechanisms, broadly referred to as 'liberalization'. The main components of the structural reforms program were exchange and trade liberalization; financial sector reforms and control of the budget deficit; inflation and money supply. A geat deal of significance was placed on promotion of foreign technology transfers and foreign investment in key areas, as well as, the further development of the private sector.

[7] 6.Portfolio investment includes equity securities, debt securities in the form of bonds and notes, money market instruments, and financial derivatives that include a variety of new financial instruments. However, it shild be clear that if any of those instruments complies with the criteria of FDI capital transactions they are considered part of FDI.All other financial transactions not covered in direct investment and portfolio investment are classified in the balance of payments as reserve assets or other investment.

[8] Budget 2003-04,Government of India.http://indiabudget.nic.in/es2003-04/chapt2004/chap610.pdf

[9] THE OECD Benchmark Definition of Foreign Direct Investment provides operational guidelines on how FDI activity should be measured according to internationally agreed standards.The initial version of the Benchmark Definition (in 1983) and its subsequent revisions were prepared under the supervision of the Investment Committee (formerly the Committee on International Investment and Multinational Enterprises).The Council recommendation of July 1995, which endorsed the third edition, also included a recommendation that Member countries continue to take steps to bring their statistical methodology into line with the Benchmark Definition.

[10] Chaturvedi,Ila(2011),"Role of FDI in Economic Development of India:Sectoral Analysis", International Conference on Technology and Business Manageemnt, Jaipuria Institute of Management, Ghaziabad(28-30th March).

[11] Norihiko Shirouzu"Train Makers Rail Against China's High Speed Designs," wall Street Journal, November 17,2010.

[12] According to the World Bank, foreign direct investment (sometimes written as direct foreign investment or DFI) refers to , " net inflows of investment to acquire a lasting management interest… in an enterprise operating in an economy other than that of the investor".

[13] The "Asian Tigers" was a name given to four Asian countries that experienced economic development between the 1960s and 1990s .They were often touted as a model for developing countries as policy makers and economists attempted to indentify the secrets to their success.

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[15] Holger Gorg and David Greenaway(2004) "Much Ado about Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment?" The World Bank Research Observer, 19(2):171-197,Gordon H,Hanson(2001) Sould Countries Promote Foreign Direct Investment?,G-24 Discussion Paper Series, United Nations.

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[17] For a recent review of the literature see: M.Abdur Rahman Malik, Chaudhry Abdul Rehman, Muhammad Ashraf, Rana Zamin Abbas(2012) "Exporting the Link between Foreign Direct Investment, Multinational Enterprieses and Spillover Effects in Developing Economies", Internation Journal of Business management,7(1):230-240.

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