A STUDY ON THE IMPACT OF FDI INFLOWS ON EXPORTS AND GROWTH OF AN ECONOMY: EVIDENCE FROM THE CONTEXT OF INDIAN ECONOMY

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ABSTRACT

It needs little emphasis that a nation's international competitiveness today crucially depends upon the growth and technological dynamism that it adopts. Economic policymakers, therefore, go out their way to attract Foreign Direct Investments (FDI), as a high level of FDI is viewed as a catalyst of economic growth for the host country. This paper thus examines the two most important benefits associated with the inflow of FDI for the host country in the form of: Export Promotion and GDP Growth.

To study the dynamics of co-integration between FDI, GDP and Exports, evidence is taken from country-specific level like Indian Economy where the period of study is from 2000-2012. As FDI inflow can have a two-way impact on the host country, hence, the paper firstly examines the current economic scenario of India in terms of its FDI inflows, GDP growth rate and its export performance so far. Secondly, the paper shows a positive correlation between FDI, GDP and Exports by framing Simple Regression and Multiple Regression Models built on the hypotheses formulated and validating the results of the models based on ANOVA and Durbin-Watson test.

Keywords: FDI, Exports, GDP, correlation.

INTRODUCTION:

The International financial scenario has been exhibiting a phase of transition since the last two decades, where capital flows in the form of foreign aid have dried up, and financial institutions like World Bank and IMF alone have not been able to meet up the needs of the developing countries. Hence, economic policymakers of developing economies go a long way in attracting capital flows in the form of Foreign Direct Investment (FDI) as a high level of FDI is viewed as an affirmation of the future economic health of that country. Generally speaking, FDI refers to the capital inflows from foreign country that invests in the productive capacity of the host country. FDI has therefore become a vital component of the developmental strategies adopted by almost all nations across the globe. In fact, FDI provides a win-win situation to both the 'investing country' as well as to the 'host country'. The investing country can take advantage of the free market accessibility that it gets in the host country. The host country on the other hand can increase its financial resources for development, boost export competitiveness, and increase its labour productivity by strengthening its skill base and enhancing technological capabilities.

The role of FDI in the growth process of the host country has long been a topic of discussion. Several of the discussions and studies reveal that there is a strong and positive correlation between FDI and growth. Apart from acting as an engine for technology transfer (or diffusion), FDI also stimulates domestic investment, international trade, expand domestic savings, increase its foreign exchange reserves thereby correcting its Balance of Payments position. All these factors together contribute towards the growth of a nation.

Exports, on the other hand, is also considered as an instrument of economic growth and facilitates efficient production of goods and services by gaining comparative advantage over other countries. The success stories of East and South-East Asian countries suggest that FDI is seen as a powerful tool of export promotion for the domestic country. Several studies have also confirmed that FDI through multi-national corporations (MNCs) have greater advantages over domestic firms in respect of export performance. Foreign firms bring with them many intangible assets in the form of technology, skills, brand names, advertising strategies, globally established marketing channels and experience of operating in international markets. Therefore, foreign countries can be instrumental in promoting exports from the host countries. As more and more exports help lead a country to increase its foreign exchange reserves and build a strong financial position, therefore, it can be rightly said that FDI can not only increase the export base of the domestic country but also contributes to the overall growth of the host country.

Thus, the paper tries to show an inter-relationship between FDI, exports and growth, and the sample evidence is derived from the relevant data of Indian Economy. Hence, the first section of the paper deals with the data used and the methodology adopted for the study. The second section of the paper emphasizes on analyzing the current economic scenario of Indian Economy in terms of its total FDI inflows, its GDP growth rate over the years and growth of exports from a period of 2000-2012. The final phase of the paper deals with the formulation of hypotheses and studies the correlation between the three variables by adopting simple and multiple regression methods. The results are further validated through the use of ANOVA and Durbin-Watson test.

LITERATURE REVIEW:

A number of econometric studies have been done in the recent past to prove the validity of the relationship between FDI infusion in an economy and economic growth. A panel data analysis was done to examine the relationship between Foreign Direct Investment (FDI), financial development and economic growth using Generalized Method of Moments in a group of 70 developed and developing countries from 1988 to 2002 **(*Choong and Lam, 2011)***. It was found that FDI has a negative and significant impact on economic growth in developing countries. The interpretation for the negative sign of FDI is that the weak regulations and the low degree of the financial sector development in developing countries lead to misallocation of this private capital flow, which reduces and even reverses its impact on economic performance. The finding supports the notion that a certain level of financial sector development is a significant and prerequisite for FDI to have a positive effect on economic growth. The major findings of the study are that FDI generally has a positive impact on the economic growth rate of countries. To host country, FDI offers much more than necessary investment as it raises the factor productivity as well as enhances the ability to better integrate the domestic industries with global markets. A time-series analysis was also employed to prove the causal relationship between FDI and economic growth of Bangladesh using annual data from 1975 to 2005 **(*Md. Gazi Salah Uddin and Md. Wahidul Habib, 2008)***. The Granger Causality test and Error Correction Models were employed taking care of stochastic properties of the variables. Time-series analysis indicates the causal nexus between export, FDI and

growth. The results indicated that FDI and exports are co-integrated and suggest a one-way causation from FDI to export growth. This implies FDI causes export growth in the long-run but does not influence in the short-run.
In the last three decades, FDI flows have grown rapidly all over the world. This is because many developing countries see FDI as an important element in their strategy for economic development. The FDI has both benefits and costs and its impact is determined by the country's specific condition in general and the policy environment in particular. The relationship between FDI and economic growth is very controversial as it varies from country to country. The basic objective of this paper was therefore to investigate the causality between economic growth and FDI in India and China. ***Ganesh Kumar (2011)*** examines the direction of causality between FDI and GDP for India and China using the Granger Causality test. In addition to the studies made which dealt with assessing the overall impact of FDI on growth, a study made by ***Singh (2011)*** focused on the impact of foreign investment on host country industrial structure with special reference to India's manufacturing sector during post reform period. Moreover, the core variable of the study namely foreign presence indicated positive and significant association with industrial market concentrations.
Roy and Mandal (2009), examined the dynamics between economic growth and FDI for a selected group of Asian economies namely India, China, Hong Kong, Malaysia and Philippines. This paper examined the issue of crowding-in or out effect between foreign and domestic Investment in the long-run. Although it may be seen natural to argue that FDI can convey great advantages to host countries**. *Laura (2003)*** showed that the benefits of FDI vary greatly across sectors by examining the effect of FDI on growth in the primary, manufacturing and services sector. An empirical analysis using cross-country data suggested that total FDI exerts an ambiguous effect on growth. Another paper ***(Ilan, 2007)*** investigates the impact of foreign direct investment (FDI) on economic growth using detailed sectoral data for FDI inflows to Indonesia over the period 1997-2006. In the aggregate level, FDI is observed to have a positive effect on economic growth. However, when accounting for the different average growth performance across sectors, the beneficial impact of FDI is no longer apparent. When examining different impacts across sectors, estimation results show that the composition of FDI matters, for its effect on economic growth with very few sectors showing positive impact of FDI and one sector even is showing a robust negative impact of FDI inflows.
A study made by ***Balamurali (2004)*** examines the relationship between foreign direct investment and economic growth of Sri Lanka for the period 1977-2003 using Johansen's full information maximum likelihood method by considering relationship between real gross domestic product, foreign direct investment, domestic investment and openness of the trade policy regime. The results indicate that foreign direct investments exert an independent influence on economic growth and there is bidirectional causality between foreign direct investment and economic growth.

OBJECTIVES OF THE STUDY:

- To study the impact of FDI on the growth of an economy.
- To substantiate the need of FDI for promotion of exports and analyze the relationship between exports and FDI.
- To study the correlation between FDI, GDP and Exports.
- To study the dependency of GDP growth on exports and FDI.

DATA AND METHODOLOGY:

Since the sample evidence has been taken from the context of Indian Economy, therefore, this study uses secondary data to prove the validity of the topic. The data under study has been mostly collected from RBI Statistics Database on Indian Economy from the period of 2000-2012.
The first section of the paper deals with the study of the current economic scenario of India in terms of total FDI inflows, FDI inflows on a sectoral basis, growth of GDP and its export performance over the years.
In order to fulfill the objectives of the study, few hypotheses have been formulated based on the variables in question, which have been further validated through the use of statistical tools like Simple Regression and Multiple Regression Models and Correlation analysis. The statistical significance of the variables is explained through the use of ANOVA and Durbin-Watson test.

CURRENT ECONOMIC SCENARIO OF INDIAN ECONOMY:

a) **Magnitude of FDI Inflows in India from the period 2000-2012:** The historical background of FDI in India dates back from the time when East India Company was established in India with the objective of setting up units in India. This is how railways came into being in India. If we examine the current state of FDI inflows in India, it can be seen that there has been an exponential increase in the flow of FDI in India with more liberalized reforms coming into being. But on the other side of it, it is also seen that with years to come, there has been some volatility in its flow. But if we see, FDI again picked up pace because of automatic approval route via RBI.

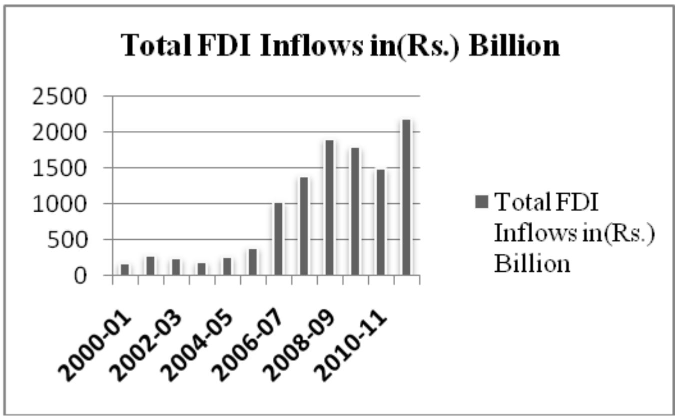

Figure 1: Total FDI Inflows (Rs. Billion) in India from the period 2000-01 – 2011-12 (Source: RBI)

b) **FDI Inflows by Sector in India:** According to UNCTAD (2007) Investment Report, India has emerged as the second most attractive destination for FDI after China. Indian policymakers continue to make concerted efforts to make India an attractive destination for FDI and reap the benefits out of it. While it is clear that FDI inflows into India have been on the rise, let's now analyze the sources as to where the flow of FDI is most. It is clear from the figure below that India has attracted significant overseas Investment in service sector over the years. The other sectors mentioned below too have been able to bring considerable investment over the years.

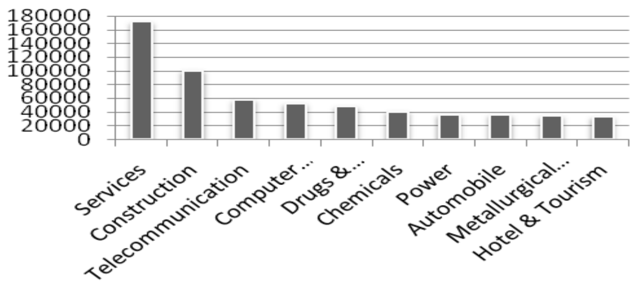

Figure 2: Cumulative FDI Inflows (in Rs. Billion) on a sectoral basis from the period 2000-12 (Source: Department of Industrial Policy and Promotion (DIPP), Govt. of India)

c)**GDP growth rate of India from 2000-2012:** Figure below gives a clear picture that the GDP of India has been constantly on a rise. India has witnessed a robust growth rate since 2000 with services sector to be one of the major contributors of GDP. It can thus be summed up that FDI has played a major role in the increase in growth rate of the various sectors of India.

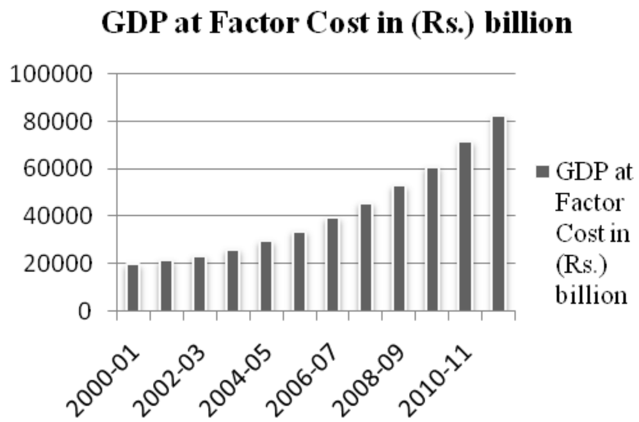

Figure 3: GDP at Factor Cost (Rs. Billion) of India from the period 2000-01 – 2011-12 (Source: RBI)

d) Growth of exports in India from 2000-2012: Exports in India too have seen a steady increase with increase in GDP. One of the reasons for this sharp increase in exports is because India has been able to diversify its exports base from agricultural based products to manufacturing products.

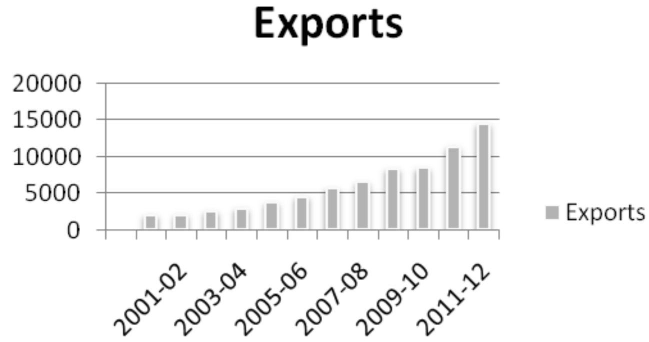

Figure 4: Total Exports (Rs. Billion) in India from the period 2000-01 – 2011-12 (Source: RBI)

FORMULATION OF HYPOTHESES:

To meet the objectives of the study, following hypotheses have been formulated:

1. Null Hypothesis (H_o): There is no significant relationship between FDI and Exports.

Alternative Hypothesis (H_1): There is significant relationship between FDI and Exports.

2. Null Hypothesis (H_o): There is no significant relationship between FDI, GDP and exports.

Alternative Hypothesis (H_1): There is significant relationship between FDI, GDP and exports.

TESTING OF HYPOTHESES AND DATA ANALYSIS:

To examine the significance of FDI on exports and growth, firstly Pearson's correlation coefficient is computed between FDI & exports, FDI & GDP, GDP & Exports. The results are analyzed by considering the values of FDI inflows, GDP and exports of India from the period 2000-2012.

Table 1 (Source Author)

Correlations			
		FDI	**Exports**
FDI	Pearson Correlation	1	.916**
	Sig. (2-tailed)		.000
Exports	Pearson Correlation	.916**	1
	Sig. (2-tailed)	.000	
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 2 (Source Author)

Correlations			
		FDI	**GDP**
FDI	Pearson Correlation	1	.926**
	Sig. (2-tailed)		.000
GDP	Pearson Correlation	.926**	1
	Sig. (2-tailed)	.000	
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 3 (Source Author)

Correlations			
		GDP	**Exports**
GDP	Pearson Correlation	1	.99**
	Sig. (2-tailed)		.000
Exports	Pearson Correlation	.99**	1
	Sig. (2-tailed)	.000	
**. Correlation is significant at the 0.01 level (2-tailed).			

Since the correlation coefficients between the three variables are fairly high, therefore, the null hypothesis in both cases is rejected in at confidence interval of 0.01and alternative hypotheses are accepted. The results clearly indicate that there is significant relationship between FDI, growth and exports.
To further understand the dependency of these three variables, following models have been built based on Simple Regression and Multiple-Regression Analysis.
MODEL 1: The first model is based on Simple Regression analysis to explain the dependency of Exports on FDI.

$$EXP_t = \alpha + \beta\, FDI_t + e \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (1)$$

Where, EXP_t = Exports
FDI_t = Foreign Direct Investment
e = Error or Disturbance term

Table 4 (Source Author)

Coefficients				
Model 1		**Coefficients**		**t**
		β	**Std. Error**	
	(Constant)	1588.548	791.184	2.008
	FDI	4.729	.656	7.207
Dependent Variable: Exports				

Table 5 (Source Author)

ANOVA (Model Summary)						
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**F-test****	**Durbin-Watson**
1	.916[a]	.839	.822	1680.60626	51.947	.891
a. Predictors: (Constant), FDI						
b. Dependent Variable: Exports (** Significant at 0.01 level)						

From Model 1, it is found that all the variables are statistically significant. The regression result confirms that FDI is an important factor for increase in exports in the country. It is observed from the results that elasticity coefficient between FDI and export is 4.72 which imply that 1% increase in FDI may cause 4.7% increase in exports. Hence, FDI positively influences exports. The coefficient of determination i.e., R^2 shows that the model has a good fit as 82% of exports is being explained by FDI. F-test also confirms that the variables are statistically significant. The D-W statistic shows that there is no autocorrelation problem in the analysis.

MODEL 2: Model 2 is based on Multiple Regression Analysis to prove the dependency of GDP on Exports and FDI.

$$GDP_t = \alpha + \beta_1 FDI_t + \beta_2 EXP_t + e \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (2)$$

Where, GDP_t = Gross Domestic Product
EXP_t = Exports
FDI_t = Foreign Direct Investment
e = Error or Disturbance term

Table 6 (Source Author)

Coefficients				
Model 2		**Coefficients**		**t**
		β	**Std. Error**	
	(Constant)	11278.818	1384.214	8.148
	FDI	2.752	2.412	1.141
	Exports	4.667	.467	9.992
a. Dependent Variable: GDP				

Table 7 (Source Author)

ANOVA (Model Summary)						
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**F-Test****	**Durbin-Watson**
2	0.994	.988	.986	2482.233	377.918	2.112
a. Predictors: (Constant), Exports, FDI						
b. Dependent Variable: GDP (** Significant at 0.01 level)						

In the growth model (Model 2), estimated coefficients on FDI & exports have a positive relationship with GDP. Therefore, it is statistically revealed that FDI and Exports are instrumental in influencing the level of economic growth in India. The coefficient of determination i.e., R^2 explains that 98% level of economic growth is being influenced by FDI and exports in India. The F-test also confirms the significant relationship between FDI, growth and exports. The D-W statistic is 2.11 which confirm that there is no autocorrelation problem in the analysis.

FINDINGS OF THE STUDY:

Following are the findings of the study:

CURRENT SCENARIO OF INDIAN ECONOMY:

- India's share in global FDI has increased considerably over the years, but the pace of FDI inflows has been slower than that of China.
- Due to the initiative taken in respect of continued Liberalization since 1991, India has been witnessing a 7 plus percent of economic growth. In fact, India's economic growth even touched 9 percent since 2006. India has been considered to be one of the fastest growing economies of Asia.
- It is also seen that cumulative inflows of FDI has been on a constant rise with sectors like services, construction proving to be the most attractive destinations for FDI. Services Sector have alone received Rs. 171,345 crores of FDI from 2000-12.
- It is also observed that major FDI inflows in India are concluded through the automatic route via RBI.
- It is also worth mentioning that exports have been consistently increasing in the last 12 years along with increase in GDP. If we compare exports as a percentage of GDP, the results seem to be quite favorable for India as a large chunk of GDP is contributed by export sector in India.

IMPACT OF FDI ON EXPORTS AND GROWTH:

- The results of the export model (model 1) shows that both the variable included under study are statistically significant. The elasticity of coefficient between exports and FDI is positive which indicates that 1% increase in FDI can increase 4.7% of exports.
- In the GDP model (model 2), the variables under study proved to be statistically significant indicating that FDI and exports play a vital role in accelerating the GDP of Indian Economy.
- The study also shows that FDI & exports, FDI & GDP, GDP & Exports are all positively and highly correlated with each other which pave the way for rejecting the null hypotheses and accepting the alternative hypotheses under consideration.

CONCLUSION & POLICY RECOMMENDATIONS:

The study clearly reveals that FDI not only acts as a vehicle for accelerating the pace exports but it is also an important variable that alters the level of GDP of the host country. FDI can complement local developmental efforts by boosting export competitiveness, generating employment and strengthening the skill base, enhancing technological capabilities (transfer, diffusion and generation of technology), and increasing financial resources for development. It can also help plug a country in the international trading system, as well as promote a more competitive business environment. In view of this, India should continue to take steps to ensure an enabling business environment to improve India's attractiveness as an investment destination.

But there have been a few elements of concern for India. According to the latest reports published by Economist Intelligence Unit (EIU, 2007-11), FDI inflows in India are set to increase substantially but would remain well below potential. The report says that 'India's potential to attract increased FDI inflows is vast, although poor infrastructure, excessive bureaucracy, labour market inefficiencies, and interdepartmental wrangling will slow the pace of opening in many sectors'. Therefore, it is highly recommended to the policy makers of India that drastic steps must be taken to improve infrastructural facilities and increase labour efficiencies which can be seen as a restructuring tool to increase FDI inflows in India. It is also recommended that focus should not be on the absolute amount of gross FDI inflows, but also the on the type of FDI inflow as it is seen that FDI inflow in India is mostly concentrated through M&A. There is hardly any Greenfield Investments being taken place so far. Finally, India should consciously work towards attracting greater FDI into R&D as a means of strengthening the country's technological capacities.

Although policy makers are looking at FDI as the primary source of funds, but it must be taken into consideration that FDI is not the only solution of rapid growth and development. India needs to put in place a comprehensive developmental strategy which includes being open to trade and FDI.

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