

¹CHAPTER 4

INVESTMENTS, EXPORTS – KEY DETERMINANTS OF GROWTH: EVIDENCE FROM THE CONTEXT OF INDIAN ECONOMY

4.1. INTRODUCTION

Capital Formation or commonly referred to as investment is an important macro-economic variable in any economy. Savings and investments are said to play a vital role in the functioning of an economy as these impact the flow of income generated by any country or region thereby becoming important drivers for GDP growth.

Capital Formation or Investment is the creation of Capital or the net addition to the capital stock. Gross Fixed Capital Formation (GFCF) is the most comprehensive and consistent measure of current Investment in physical assets available. It is the gross value of goods which is added to the fixed domestic capital stock during a year.

The sources and sectors for GFCF comprises the following:

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SOURCES	ECONOMIC SECTORS
Households	Agriculture, Forestry, Fishing
Government	Mining and Quarrying
Corporations	Manufacturing Electricity, Gas and Water Supply Transport, Storage and Communications Financial Intermediation, Real estate, renting and business activities Construction Wholesale retail trade, repair of motor vehicles, motorcycles, etc., hotels and restaurants Public administration and defence, compulsory social security Education, health and social work, other community, social and personal services

(Source: UNSTAT, 2006)

The sources of investments may further include the following:

Households	Domestic Funds
Corporations	Domestic Funds Foreign Direct Investment (FDI) Foreign Debt
Government	Domestic Funds Foreign Debt Official Development Assistance (ODA)

Let us understand the sources of investments one by one:

Households

Households are individuals. They invest in housing, farms, vehicles and facilities for small businesses. Households are responsible for 15–35 per cent of total global investment, all of which is assumed to come from domestic sources.

Governments

Governments are the national, provincial, state and local governments of a country. They invest in long-lived assets that provide local public benefits, such as transportation infrastructure, water supply, schools and hospitals, coastal infrastructure, and natural ecosystems. They channel their investments into their most pressing development priorities. High social returns are sought, such as economic growth, jobs, improved national security, improved health of citizens and a cleaner environment. Governments often use a long time frame to evaluate the expected returns from their investments. They often try to reduce the risk of an investment not performing as expected by relying on proven technologies.

Governments are typically responsible for 10 – 15 per cent of total investment in physical assets in a country. Over 90 per cent of the funds that governments invest come from domestic sources such as the taxes and fees they collect. They may borrow funds from domestic or foreign sources. International borrowing by governments amounts to less than 10 per cent of their investment in new physical assets.

Corporations (Financial and Non-Financial Corporations)

Financial corporations are entities such as banks and insurance companies that provide financial services to non-financial corporations, households and governments. They also invest in physical facilities, such as buildings, using funds raised domestically or from foreign sources. They are responsible for 1–7 per cent of the investment in new physical assets.

Non-financial corporations produce goods, such as fossil fuels, and non-financial services, such as communications services. They need physical facilities such as commercial buildings, industrial plants, and telecommunication facilities to provide the goods and services they offer. Since investment in physical assets by financial corporations is small relative to the investment from other sources, it is combined with investment by non-financial corporations for the analysis. Together these sources are responsible for 50–75 per cent of the total investment in new physical assets.

Foreign Direct Investment

FDI tends to be made by multinational corporations seeking to establish or expand operations overseas. As it is an equity investment, lenders of FDI seek a higher return than most lenders, but also accept higher risks. FDI is the net inflows of investment to acquire a lasting management interest (10 per cent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, re-investment of earnings, other long-term capital and short-term capital (*World Bank, 2006*).

International Bank

International debt includes loans provided by commercial banks and the sales of bonds in the capital market. Commercial bank loans generally cover periods from a few days to a few years. Bonds generally have a longer maturity, ranging up to decades. Debt provides finance to borrowers that have a demonstrated capacity to repay the loan with interest.

International debt represents almost 20 per cent of total global investment and a reasonable share of the total investment made by governments and corporations. Assuming that international debt is used for operational purposes would simply increase the funds raised from domestic sources.

Official Development Assistance

ODA is bilateral or multilateral assistance provided on concessional terms. Bilateral assistance is provided by the government of another country, as a grant that does not need to be repaid, or as a loan with concessional terms.

Domestic Funds

Most of the funds invested in new physical assets are raised domestically; 50 – 90 per cent in most regions. All investment by households is assumed to originate domestically from savings or as debt from friends or financial institutions. Over 90 per cent of the funds invested by governments are raised domestically. These funds may come from tax or other revenue, be borrowed from domestic financial institutions or come from the sale of bonds in the domestic market. Corporations also raise funds domestically from the local markets (*UNFCC, 2010*).

4.2. TRENDS IN THE RATE OF CAPITAL FORMATION (DOMESTIC INVESTMENT) IN INDIA IN RELATION TO GDP

Although there was a global economic financial crisis in 2008-09, the Indian economy responded strongly to fiscal and monetary stimulus and achieved a massive growth rate of 8.6 per cent and 9.3 per cent respectively in 2009-10 and 2010-11 respectively. Since India was also witnessing inflationary pressures, the Reserve Bank of India (RBI) had started raising the policy rates in 2010 that included all the measures under the monetary policy used by RBI like increase in repo rate, reverse repo rate, cash reserve ratio and statutory liquidity ratio which adversely impacted investments resulting in growth rate slowing down to 6.2 per cent and 5 per cent in 2011-12 and 2012-13 respectively. The moderation in growth rate was the result of slow and sluggish growth of industries (comprising mining and quarrying, manufacturing, electricity, gas and water supply and construction sector). The growth rate of the economy since 2003-04 has been strongly correlated with investment rate. The real growth rate in the economy averaged 9.5 per cent during 2005-07 to 2007-08, which were also the years when growth rate of Investment in real terms averaged around 16 per cent (*Economic Survey, 2012-13*). The rate of growth of GDP was lower in the years when growth rate of Investment was low, as in the case of 2008-09 and 2011-12. The private sector is the major source of Investment in the country.

As per the First Revised Estimates released by the CSO in January 2013, gross domestic capital formation as a ratio of GDP at current market prices (investment rate) is estimated to be 35.0 per cent in 2011-12 as against 36.8 per cent in 2010-11. Both public and private investment declined as a share of GDP. Within private investment, investment by the private corporate sector registered a sharper decline. The reduction in private investment could be attributed to a number of factors. First is the increase in policy rates (to combat inflation and inflationary expectations). Between March 2010 and October 2011, the RBI raised the repo rate by 375 basis points (bps), thus raising the cost of borrowings in a bid to reduce demand. Another reason for lower private investment could be lower demand for Indian exports (*Economic Survey, 2012-13*). A third possible reason for lower corporate investment is policy bottlenecks which led to a number of large projects becoming stalled, which may in turn have discouraged new investment.

Economic Indicators	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Growth in GDP (per cent)	9.3	9.3	9.8	3.9	8.5	10.5	6.3	3.3
GFCF (per cent)	16.2	13.8	16.2	3.5	7.7	14.0	4.4	2.5

Table 4.1: Growth in GDP and GFCF at Constant Market Prices. **Source:** Central Statistical Organization

From the table above i.e. table 4.1, it is clearly visible that low growth rate is marked by low levels of investment, indicating that Gross Fixed Capital Investment is an important determinant of growth for any country.

4.2.1. Correlation between GDP and GFCF: Formulation and Testing of Hypothesis

To further strongly prove the correlation between GDP and GFCF and that GDP growth is dependent on GFCF for any country, the following hypothesis has been formulated:

Null Hypothesis (H_0): There is no significant relationship between GDP and GFCF.

Alternative Hypothesis (H₁): There is significant relationship between GDP and GFCF.

To examine the significance of GFCF on growth, firstly Karl Pearson's correlation coefficient is computed considering the two variables. The results are analysed considering the growth rate and GFCF rate at constant market prices from a period of 2005-06 to 2012-13.

To further understand the dependency of the two variables, following model has been built based on Simple Regression Analysis.

Model: The model is based on Simple regression Analysis to explain dependency of GDP on GFCF.

$$GDP_t = \alpha + \beta GFCF_t + e \dots\dots\dots (1)$$

Where, GDP_t = Gross Domestic Product

GFCF_t = Gross Fixed Capital Formation

e = Error or Disturbance Term

Model Summary (Growth of GDP (%) at MP)

R	R Square	Adjusted R Square	Std. Error of the Estimate
.91	.83	.80	1.24

ANOVA (Growth of GDP (%) at MP)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	44.48	1	44.48	28.91	.00
Residual	9.23	6	1.54		
Total	53.71	7			

Coefficients (Growth of GDP (%) at MP)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3.42	.90	.00	3.82	.01	1.23	5.61
GFCF (%)	.43	.08	.91	5.38	.00	.23	.62

Figure 4.1: Results of the Analysis. **Source:** Author

4.2.2. Data Analysis

Since the coefficient of correlation between the two variables is 0.91, it indicates a high correlation between the two variables. Moreover, since Coefficient of Determination/Variation (R^2) is 0.83, it indicates that 83 per cent of variation in GDP is explained by variation in GFCF. F-test/ANOVA at $df = 7$ and t-test also confirms that the two variables are statistically significant at 95 per cent confidence interval.

Hence the null hypothesis is rejected and alternative hypothesis is accepted proving that there exists a strong relationship between GDP and GFCF and that investments are an important driver for the growth of any economy.

4.3. FOREIGN DIRECT INVESTMENT AND EXPORTS: IT'S INTER-LINKAGE WITH GDP

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 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 study tries to show an inter-relationship between FDI, exports and growth, and that FDI and Exports are important determinants of growth. The sample evidence is derived from the relevant data of Indian Economy.

4.3.1. Current Economic Scenario of Indian Economy in Terms of Exports and FDI

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.

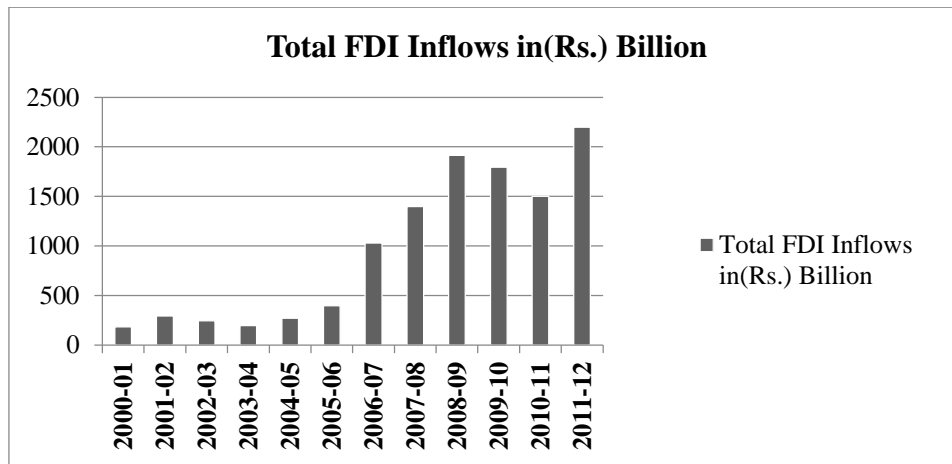


Figure 4.2: Total FDI Inflows (Rs. Billion) in India from the period 2000-01 – 2011-12 **Source:** RBI

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 4.3 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.

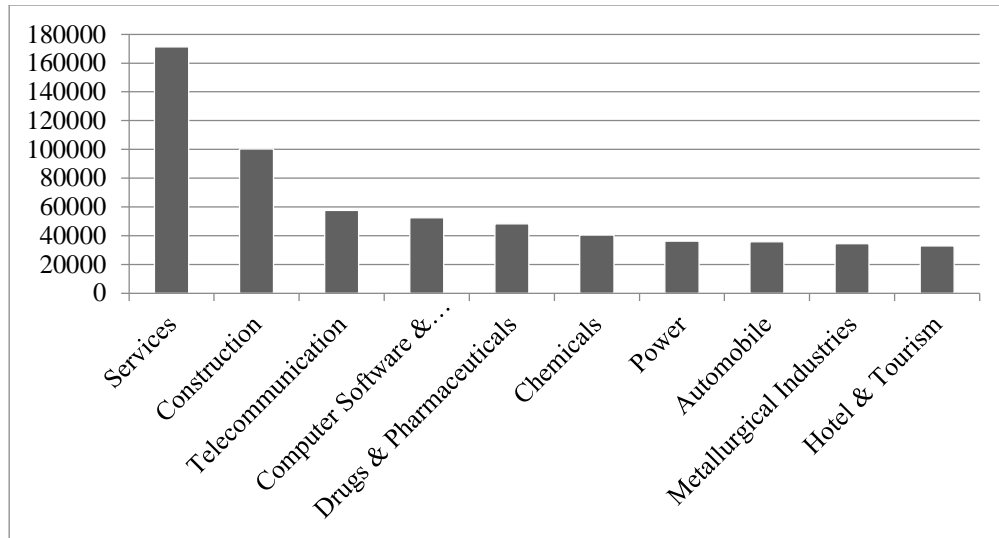


Figure 4.3: Cumulative FDI Inflows (in Rs. Billion) on a sectoral basis from the period 2000-12

Source: Department of Industrial Policy and Promotion (DIPP), Govt. of India

- c) **GDP growth rate of India from 2000-2012:** Figure 4.4 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.

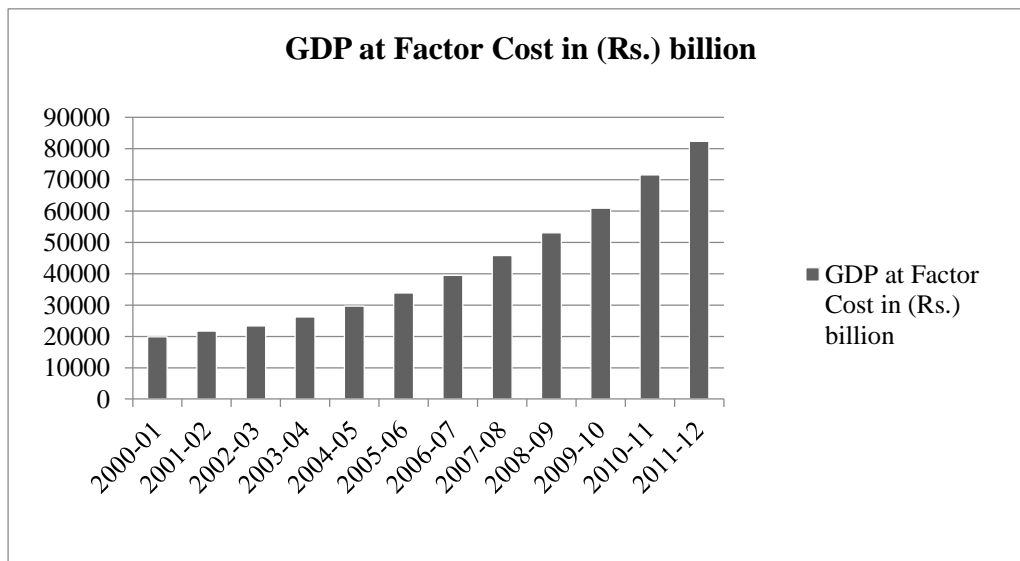


Figure 4.4: GDP at Factor Cost (Rs. Billion) of India from the period 2000-01 – 2011-12 **Source:**

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.

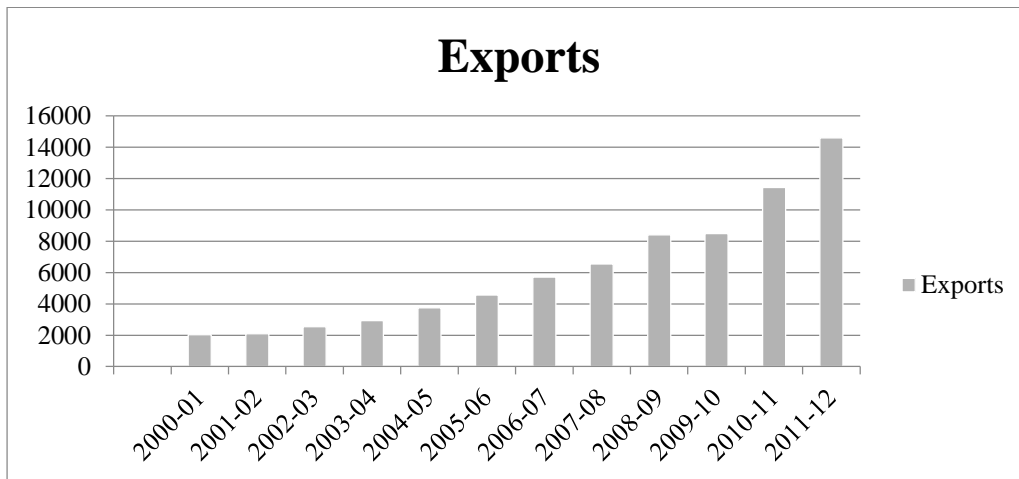


Figure 4.5: Total Exports (Rs. Billion) in India from the period 2000-01 – 2011-12. **Source:** RBI

4.3.2. Formulation of Hypotheses

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

1. Null Hypothesis (H_0): 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_0): There is no significant relationship between FDI, GDP and exports.
Alternative Hypothesis (H_1): There is significant relationship between FDI, GDP and exports.

4.3.3. 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 and exports, FDI and GDP, GDP and Exports. The

results are analysed by considering the values of FDI inflows, GDP and exports of India from the period 2000-2012.

Table 4.2 (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 4.3 (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 4.4 (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 99 per cent and 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.

$$EXP_t = \alpha + \beta FDI_t + e \dots\dots\dots (1)$$

Where, EXP_t = Exports

FDI_t = Foreign Direct Investment

e = Error or Disturbance term

<i>Table 4.5 (Source Author)</i>				
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 4.6 (Source Author)

ANOVA (Model Summary)						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F-test**	Durbin-Watson
					1	

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 per cent increase in FDI may cause 4.7 per cent increase in exports. Hence, FDI positively influences exports. The coefficient of determination i.e., R² shows that the model has a good fit as 82 per cent 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.

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

Where, GDP_t = Gross Domestic Product

EXP_t = Exports

FDI_t = Foreign Direct Investment

e = Error or Disturbance term

Table 4.7(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 4.8 (Source Author)

ANOVA (Model Summary)						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F-Test**	Durbin-Watson
					2	
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 per cent 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.

4.4. FINDINGS OF THE STUDY

Following are the findings of the study:

Trends in the Rate of Capital Formation (Domestic Investments) in India in Relation to GDP

- The rate of growth of GDP was lower in India in the years when growth rate of Investment was low, in 2008-09 and 2011-12.
- The private sector is the major source of Investment in the country.
- Low growth rate is marked by low levels of investment indicating that Gross Fixed Capital Formation is an important determinant of growth for any country.

Correlation between GDP AND GFCF

- There exists a strong relationship between GDP and GFCF of India and that investments are an important driver for the growth of any economy.

Current Scenario of Indian Economy in terms of FDI and Exports

- 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 to 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 have 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 come 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 per cent increase in FDI can increase 4.7 per cent 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.

4.5. CONCLUSION & POLICY RECOMMENDATIONS

The study clearly reveals that domestic investments have a direct bearing on the GDP growth of a country. FDI, too, not only acts as a vehicle for accelerating the pace of exports but 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 pug 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 mentioned above which also includes being open to trade and FDI.