Trade Liberalisation and Inflow of Foreign Direct Investment (FDI) in India

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ABSTRACT

With the liberalization of trade regime since 1991 the inflow of FDI in India has substantially increased. The paper aims to examine the effect of trade liberalization on inflow of FDI in India from 1980 to 2015. Using Johansen method, it is found that there is long run cointegration relationship between inflow of FDI, trade liberalization index, gross domestic output, exports and inflation. The result of vector error correction model shows that these factors Granger cause inflow of FDI in the long run but not in the short run.

JEL Classification: F21.

Keywords: FDI inflows; trade liberalisation; GDP; export; inflation; Granger Causality.

1. INTRODUCTION

An important feature of globalization since the 1990s has been the inflow of foreign direct investment (FDI) in developing countries including India. India has been one of the most attractive destinations for the FDI in recent years. As the government is taking her steps back from economic activities, a big space is created for the private sector, both domestic and foreign. Government also finds FDI as important source of development financing. It may not only fill the space created by public sector, it accelerates the rate of economic growth by increasing volume of capital but also increase the efficiency of the productive factors by increasing competition, introducing better technology and management expertise. In developing countries, FDI is now viewed as an attractive alternative source of development financing as the government

finds it difficult to finance the increasing demand of socio-economic needs of the country. Besides, FDI also brings foreign exchange and ease balance of payment difficulties. Taking all these factors into account, the developing countries are making far reaching changes in their economic policies to attract FDI into the country.

FDI is attracted not only by the policy measures adopted by a country to attract investment, the it also depends upon the economic performance of the host country. Before 1991, India had been pursuing import substitution industrialization (ISI) policies. The economic environment for FDI was not encouraging. In 1956 Industrial Policy Resolution included some provisions for FDI. In 1972 the government allowed fully owned subsidiaries of foreign companies if they export 100 percent of their output. In 1977, 51 percent equity share was permitted to foreign firms. All these measures, however, could not attract significant amount of foreign investment in India. Since 1991 comprehensive efforts were made through economic reforms to integrate the Indian economy with the rest of the world. This has also resulted in improvement in macroeconomic fundamentals of the economy. Since then the FDI inflows have increased significantly. It has increased from meagre amount of $252 million in 1992 to $47000 million in 2008 and then down to 42000 million in 2015 (UNCTADSTAT).

2. OBJECTIVES OF THE STUDY

The study aims at analyzing the effect of trade liberalization on inflow of FDI in India.

The paper has been arranged in following way. Following section describes trends of FDI inflows in India. Brief review of literature has been given in section three. This is followed by brief description of methodology. In section 5, the empirical results have been analysed. Conclusion has been presented in final section.

3. TRENDS OF FDI IN INDIA

During the 1980s the inflow of FDI in India was around 105 million US dollars per annum. However, with liberalization of trade regime since 1991, the inflow has increased to 1857 million US dollars per annum from 1992 to 1999. Since then the inflow of FDI in India mounted to 5403 million US dollars per annum during 2000 to 2005, and continued to rise reaching maximum to 47102.4 million US dollars in 2008. The substantial increase in inflow reflected growing confidence of investors in Indian economy, liberal economic environment and sound economic conditions of the country. The global financial crisis slowed down the world-wide flow of FDI. The impact on India was however comparatively low. The FDI declined for next two years. However, the decline in FDI flow during this period was not as much as compared to the decline in global flow. The inflow of FDI continued to remain at 2006 and 2007 level though less than peak level of 2008. This reflected robust growth of equity flows due to solid resurgence in growth of domestic economy in advance of recovery at world level and stable return on investment showing good incentives for overseas companies in India. With economic recovery once again the inflow of FDI increased in subsequent years. The inflow kept fluctuating in subsequent years and remained around 33000 million dollars per year. In 2015 the figure once again reached to 44208 million US dollar (UNCTADSTAT).

In terms of percentage of Gross Capital Formation (GCF) this was 0.18 percent in 1980 which increased to 0.3 percent in 1989. Since liberalization this percentage has increased from 0.3 percent in 1992 to 4.5 percent in 2002 reaching maximum of 9.7 in 2008. Thereafter it remained around 4.2 percent.

FDI as percentage of GDP was 0.04 in 1980 which increased to 0.07 in 1990. The percentage was very low during the pre-reform era. The percentage has increased from 0.08 percent in 1992 to 0.78 percent in 2000 to 3.7 in 2008. Since then the percentage remained below 2 percent.

Sector wise distribution of FDI reveals that it is the service sector, which includes Financial, Banking, Insurance, Non-Financial/Business, Outsourcing, R&D, Courier, Tech. Testing and Analysis, has attracted largest proportion of total FDI inflows in India. Of the total cumulative equity inflow of $258,020 million during 2000 to 2015, this sector attracted $43,350 million which constitutes about 17.32 percent of cumulative FDI equity inflows. This is followed by construction sector accounting about 9 percent of cumulative FDI equity inflows ($24098 million). This is followed by computer software and hardware (7%); telecommunications (7%); automobile industry ((5%); drugs and pharmaceuticals (5%); chemicals other than fertilizers (4%); power (4%); trading (4%) and metallurgical industries (3%) (Fact sheet on FDI, 2015).

Mauritious has been the most important source of FDI inflow for India. It contributes about 36 percent of the total inflow from 2000 to 2014. Singapore comes second contributing about 11.9 percent, followed by UK with 9.5 percent, Japan with a share of 7.6 percent and US with about 5.4 percent.

4. REVIEW OF LITERATURE

Dunning (1993) observed that large and growing market, gross domestic product, cost of production and stability of political system are important factors that affect the inflow of FDI of the destination countries. Lucas (1993) while examining determinants of FDI inflow in East and South Asian countries found that capital cost and export are more important factors than labour cost and domestic demand. Loree and Guisinger (1995) in their study about determinants of FDI from USA towards developed countries found that host countries' policy variables play significant role in attracting investment in developed countries from USA. However, the infrastructure has been found to be significant for all the regions. Custom duty and export related variables were found to be significant factors in the study of *Sing and Jun (*1995). Duran (1999) while applying time series technique on panel data have concluded that market size, economic growth, domestic savings, country's solvency, trade openness and macroeconomic stability variables are the catalysts of FDI. GDP, trade openness and return on investment in host countries were identified as significant determinants of inflow of FDI by Asiedu (2002) and political stability and infrastructure were found to be statistically insignificant factors. Quazi and Mahmud (2004) have found economic liberalisation, trade openness, prosperity, human capital, political stability and lagged FDI are significant factors affecting FDI inflow in South Asia. Size of investment, trade openness, inflation, indirect taxes and external debt were found to be significant factors affecting FDI inflow in the case of Pakistan (Naeem, Ijaz, and Azam, 2005). GDP and access to European market were found as important factors by to affect FDI inflow in a country (Jana, 2008). Using panel data analysis, Vijaykumar, N. et. al., (2010) have found that market size, infrastructure, gross investment, exchange rate are the potential determinants of foreign investment in BRICS countries, but inflation, and openness index were found to be insignificant factors influencing inflow of foreign investment for these countries. Studying 33 developing countries *Nonnenberg and Mendonca (2004)* observed that *the availability of skilled labour, the accessibility of foreign capital, the country's rating index and behaviour of stock market* are important determinants of inflow of foreign capital. Sahoo (2006) while studying FDI flow in South Asian countries also found that market size, infrastructure index, trade openness and labour force are important factors that attract the inflow of foreign capital.

5. DATA AND METHODOLOGY

The data on the variables used for the study has been taken from UNCTADSTAT. The data covers period from 1980 to 2015. All the variables are expressed in natural log form.

Since the study has used time series data, three steps procedure would be used to examine the determinants of FDI in India. In the first step order of integration of the variables would be examined to know whether the variables under study are non-stationary. For the purpose, the Augmented Dickey Fuller (ADF) tests and Phillips-Perron (PP) tests would be used. Next, Johansen cointegration test would be applied after having found that the variables under study are integrated of order one. This would be followed by application of vector error correction model (VECM) to examine that these variables have led to inflow of FDI in India during the period under study.

From the above review of literature, some of the macro variables have been chosen to form the model to examine the effect of these variables on inflow of FDI in India and try to find explanations for inflow of foreign capital. Based on the variables chosen the following model has been constructed.

$$lFDI = f(lrgdp, lrx, lcpi, lo)$$

where,

FDI is foreign direct investment inflow.

rgdp represents India's gross domestic product at constant prices. This variable is proxy to measure size of the market.

rx is real exports from India.

cpi is price index measuring economic stability of the economy.

o shows trade openness measured as trade GDP ratio. This is an indicator of degree of trade liberalization.

l denotes natural log.

Market Size: More FDI is attracted to large size of the market as it offers greater opportunity for demand of their product. Further the firm would have more chances to reap the benefits of economies of scale and lower the cost of production. We may expect a positive impact of GDP on FDI inflow.

Trade Openness: Trade openness is another determinant that may influence the inflow of FDI. However, the exact impact of openness is not unambiguous. When a country follow restricted trade policy, more of horizontal FDIs comes to the host countries to produce and sell in that market. If trade is liberalized, FDI comes with the intention to reap the comparative advantages of the host countries. It is observed that the country with restricted trade regime also accompanied by restricted scope for FDI. It allows the FDI only in selected sector with certain conditions. This limits the scope for large inflow of FDI. When country liberalise trade regime, it also opens more sectors and makes the economic policy more conducive for foreign investors. This may attarct more foreign investment in the host countries. Thus, trade openness is expected to have positive impact on FDI.

Economic Stability: The economic stability of a country instill confidence among investors by reducing uncertainty risk. Thus, lower the inflation rate would attract more FDI and vice versa.

Exports: As far as relationship between trade and FDI inflow is concerned, we may expect a positive relationship between trade and FDI inflows. Trade liberalization lowers trading costs which may lead to greater chance of international vertical integration of an industry. Now the foreign firms can import cheaper intermediate products and export the final product to their home country or some other countries. This will attract efficiency seeking and cost reducing FDI.

6. EMPIRICAL RESULTS

Table 1(a) and 1(b) shows the results of ADF and PP tests about the presence of unit roots in the variables under study. The results reveal that all the variables are non-stationary at level as the absolute values of calculated test statistics are smaller than that of the critical values. When the test statistics of first difference of the variables are calculated, the estimated values are more than the critical values. Thus, we may infer that all the variables selected for the study have unit roots at level but not so at first difference. Thus, we may conclude that all these variables are integrated of first order I(1).

Table 1
(a) Unit Root Test Result (ADF test)

Variables		Level			First Difference	
		C	*C&T*	*None*	*C*	*C&T*
FDI		−0.802183	−3.385524	1.086578	−6.246703	−4.424349
GDP		2.079798	−1.050191	18.66489	−4.735165	−5.348734
Export		−0.365924	−2.266332	0.932083	−4.506104	−4.324941
Price Index		−0.609717	−2.683434	2.835999	−3.985452	−3.948700
Openness		−0.615167	−2.448102	1.279825	−5.253612	−5.070920
Critical Values	1%	−3.626784	−4.284580	−2.630762		
	5%	−2.945842	−3.562882	−1.950394		
	10%	−2.611531	−3.215267	−1.611202		

Table 1
(b) Unit Root Test Result (PP test)

Variables		Level			First Difference	
		C	*C&T*	*None*	*C*	*C&T*
FDI		−0.424462	−3.461740	2.076468	−7.364433	−7.159465
GDP		3.397332	−0.879832	18.83861	−4.727316	−6.157357
Export		−0.593461	−2.348138	0.769577	−4.564778	−4.399682
Price Index		−1.129882	−1.991022	7.818120	−3.962100	−3.932983
Openness		−0.659995	−2.490250	1.212219	−5.270809	−5.090620
Critical Values	1%	−3.626784	−4.234972	−2.630762		
	5%	−2.945842	−3.540328	−1.950394		
	10%	−2.611531	−3.202445	−1.611202		

Inferring that all the variables are of same order i.e. integrated of first order, Johansen test of cointegration has been applied to estimate long run relationship between FDI and its determining variables. As lag length affects the result of the VAR model significantly, selection of suitable lag becomes necessary to get a better result. Table 2 provides the results of different estimates used to select a suitable lag length

for the model. On the basis of majority of the criterion including Schwarz information criterion (SC), one lag period has been selected to estimate the long run cointegration relationship between the variables. The results of cointegration has been presented in Table 3(a) and 3(b). Taking null hypothesis that there is no cointegration relation between the variables, the calculated trace value is more than the critical value at 5 percent level of significance. Thus, we may reject the null hypothesis that there is no cointegration relation and accept the alternative hypothesis that there is at least one cointegration relationship between the variables. Examining the null hypothesis of at most one cointegration relationship we find that the calculated trace statistics is less than the critical value. This validates our null hypothesis that there is one cointegration relationship between these variables. Same inference can be drawn based on max-eigen value test shown in Table 3(b). Hence, it may be inferred on the basis of both the test statistics that there is one cointegration relationship between the variables.

Table 2
Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	35.89023	NA	1.06e-07	−1.872135	−1.645392	−1.795843
1	233.3944	323.1887*	3.11e-12	−12.32693	−10.96647*	−11.86918*
2	260.6572	36.35039	3.03e-12	−12.46407	−9.969895	−11.62486
3	292.7822	33.09843	2.69e-12*	−12.89589*	−9.267992	−11.67521

[*]Indicates lag order selected by the criterion
LR is sequential modified LR statistics
FPE denotes Final prediction error
AIC refers to Akaike Information criterion
SC is Schwarz information criterion
HQ denotes Hannan-Quinn information criterion

Table 3
(a) Result of Johansen's Cointegration Test
Lags interval (in first differences): 1 to 2
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen Value	Trace Statistics	0.05 Critical Value	Prob.[**]
None[*]	0.686566	74.06938	69.81889	0.0220
At most 1	0.472646	34.62375	47.85613	0.4680
At most 2	0.215205	12.86771	29.79707	0.8975
At most 3	0.127091	4.628408	15.49471	0.8469
At most 4	0.000206	0.006988	3.841466	0.9328

Trace test indicates 1 co-integrating eqn(s) at the 0.05 level
[*]Denotes rejection of the hypothesis at 0.05 the level
[**]MacKinnon-Haug-Michelis(1999) *p*-values

From this we may infer that in the long run trade liberalisation has attracted FDI in India. Further, the foreign firms also find potential of large and growing market size of Indian economy and increase their investment. High growth rate of Indian economy since economic reform has been able to attract large inflow of FDI in India. Inflation has been found to be retarding factor for inflow of foreign investment in India.

Table 3
(b) Unrestricted Cointegration Rank Test (Maximum Eigen value)

Hypothesized No. of CE(s)	Eigen Value	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.686566	39.44563	33.87687	0.0098
At most 1	0.472646	21.75604	27.58434	0.2331
At most 2	0.215205	8.239302	21.13162	0.8885
At most 3	0.127091	4.621420	14.26460	0.7886
At most 4	0.000206	0.006988	3.841466	0.9328

Max-eigen test indicates 1 co-integrating eqn(s) at the 0.05 level
*Denotes rejection of the hypothesis at 0.05 the level
**MacKinnon-Haug-Michelis(1999) *p*-values

The result of VECM is given in Table 4. The result shows that when we take FDI inflow as dependent variable, the coefficient of lagged error correction term is negative and significant. This suggests that trade liberalization, inflation and GDP growth and exports Granger cause inflow of FDI in India in the long run. However, the short run variables are not significant as is revealed from the result of VEC Granger causality/block exogeneity Wald test shown in Table 5, implying that these factors individually do not affect FDI inflow in the short run.

Table4
Result of Error Correction Model

Variables	Coefficients	Standard Error	t-values
ECT(–1)	–0.317314	0.09718	–3.26521
D(LFDIF(–1))	0.012416	0.18003	0.06897
D(LCPI(–1))	11.30083	7.19288	1.57111
D(LGDPK(–1))	11.81955	7.05154	1.67617
D(LREXP(–1))	–0.521297	2.41168	–0.21616
D(LO(–1))	3.736077	2.59887	1.43758
C	–1.526294	0.64038	–2.38341

AR-square = 0.259905   Hetroskedasticity = (0.3885)
LM(1) = (0.1996), LM(2) = (0.7026), LM(3) = (0.9961)   JB test = (0.1603)

*Indicates significant at 5 percent.
Figure in bracket shows significance level.

Table 5
VEC Granger Causality/Block Exogeneity Wald Test
Dependent Variable (ΔLFDI)

Excluded	Chi-sq	Df	Prob.
D(LCPI)	2.468398	1	0.1162
D(LGDPK)	2.809530	1	0.0937
D(LREXP)	0.046723	1	0.8289
D(LO)	2.066635	1	0.1506
All	9.562356	4	0.0485

7. CONCLUSION

Inflow of large amount of FDI in India since the liberalization of Indian economy in 1991 and more rapidly since the onset of 21st century has been an important feature of Indian economy. This is also required to fill the gaps created by retreating public investment in economic activities and hence will help in achieving higher rate of economic growth. During the 1980s the inflow of FDI in India was around 105 million US dollars per annum. Comprehensive efforts through economic reforms to attract FDI bore results in terms of increase in FDI from meagre amount of $252 million in 1992 to $47000 million in 2008 and then down to $42000 million in 2015.Empirical results show that there is long run cointegrating relationship between FDI, trade liberalization, GDP, export and domestic inflation. Further the result also reveals that growing domestic market and trade liberalization has positively affected the growth of FDI inflow while domestic inflation has retarded the inflow of FDI in India.

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