



Impact of Fdi on Macroeconomic Parameters of Growth and Development : A Post Liberalisation Analysis

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ABSTRACT

FDI is now increasingly recognized as an important contributor to a country's economic performance and international competitiveness. It is not only considered as a stock of capital and foreign exchange but is also seen as a dynamic and efficient vehicle to secure the much needed industrial technology, managerial expertise, marketing know-how and network to improve on growth, employment, productivity and export performance. Keeping in view the pivotal role played by FDI inflows, Government of India has opened the Indian economy for foreign players in 1991. The last twenty years have seen a marked increase in foreign capital inflows towards India. The present paper is an endeavor to examine the impact of FDI inflows on macro-economic parameters of Indian economy. The study has been designed to carry out an elaborate analysis of the country's Post-liberalization period i.e. from 1992-93 to 2012-13 thereby analyzing the long standing relation of FDI with various macro-economic parameters like GDP, exports, imports and organised employment.

KEYWORDS

FDI, National Income, Organised Employment, Annual Imports and Exports

INTRODUCTION

It is a well known fact that capital is an engine of economic growth. Traditionally, countries depended either on the demand of their output (raw material) or on loans from foreign banks. However, now-a-days FDI as a source of funds has gained importance in recent years. FDI is generally defined as a form of long-term international capital movement made for the purpose of productive activity and accompanied by the intention of managerial control or participation in the management of a foreign firm. FDI not only provides the necessary capital for enhancing labour and land productivity, but also act as conduits of technology transfer (Thompson, 2002). According to endogenous growth theory, FDI is considered as a composite of capital, know-how and technology (Balasubramanyam, 1996).

In recognition of the important role of FDI in accelerating the economic growth of a country, Government of India has initiated a slew of economic and financial reforms in 1991. The new industrial policy of July 1991 provided, inter alia, automatic approval for projects with foreign equity participation up to 51 percent in 35 high priority industries (Govt. of India, 1991). Industrial licensing system was also abolished, except in 15 critical industries and the number of industries reserved for the public sector were drastically reduced from 17 to 6 (i.e. Defense, Atomic energy, Coal and lignite, Mining, Minerals and Railway transport).

At present, India is now ushering into next generation reforms and is looking for further liberalization of FDI norms. The Government has permitted access to the automatic route (i.e. foreign investors need only to inform RBI within 30 days of bringing in their investment) for FDI upto 100 per cent in more areas under automatic approval, except for a small negative list. FDI is the most popular instrument of globalization (Iqbal, 2007). According to him, there is a strong positive correlation between FDI and improvement in regulatory environment, whereas there is no correlation between FDI and change in risk. Ansari and Ranga (2010) mentioned FDI as an important driver of growth. Bhasin (2008), in her book discusses the FDI climate in India from 1947-48 to 2007-08. She states that FDI is a zero-sum game in which a country can attract FDI only at the expense of another country. According to Kolasa (2008), FDI inflows enhance the productivity of domestic firms through transfer of necessary capital, technical know-how and superior managerial skills.

From the above discussions it can be concluded that FDI is a thing of extremely great help in the economic development of developing countries. But, there are number of arguments that can be put forward against FDI. According to Srivastava (2002), India has been considered as an "underachiever" in securing FDI. Bhargava (2001) argued that FDI instead of helping in the process of more harmonious growth of economy as a whole creates further imbalances in the economy of developing countries like India. Li and Liu (2005) examine the endogeneity of FDI and conclude that foreign investors are likely to seek locations with higher economic growth as well as contribute to this growth. There were also few evidences to demonstrate that there is a long-run relationship between Gross Domestic Product, FDI and export in India (Sahoo and Mathiyazhagam, 2003). In fact, many countries like India have offered incentives to encourage FDI to their economies.

OBJECTIVES OF THE STUDY

FDI is now considered as an important contributor to a developing country's economic performance and international competitiveness. Over the last two decades, FDI inflows in India have witnessed a considerable increase. The present paper has been focused on a detailed analysis of the growth and pattern of foreign direct investment in India and thereby determining the impact of various macro-economic parameters like GDP, Exports, Imports and Organised Employment towards the increase of FDI inflows in India.

ANALYSIS OF THE IMPACT OF FDI INFLOWS ON INDIAN ECONOMY

Foreign Direct investment is a crucial factor for the economic growth and has been instrumental in the development process of an economy. For analyzing the impact of FDI inflows since post-liberalization its inter-relationship with various economic variables like GDP, export, import and organised employment has been studied separately.

(1) FDI & Growth of Economy

FDI has been recognized as an important driver for the economic growth of a country. In India FDI inflows made its entry during the year 1991-92 with the aim to bring together the intended investment and the actual savings of the country. The table 1 about here exhibits a continuous growth of the economy since 1992-93. Both FDI and GDP have shown an increasing trend since liberalization. Looking at the Karl Pearson's co-efficient of co-relation between two variables which is +0.932, we can say that there is a very high degree of positive

co-relation between these variables.

A further analysis has been done by applying an empirical model to study the impact of FDI on GDP contribution with GDP at factor cost as endogenous variable and four exogenous variables with one period lag in endogenous variable, foreign direct investment (FDI), one period lag in FDI and time-

trend have also been estimated, whose model specification is given as follows:-

$$GDP_{(t)} = \beta_{01} + \beta_{11} GDP_{(t-1)} + \beta_{12} FDI_{(t)} + \beta_{13} FDI_{(t-1)} + \beta_{14} t + v_1$$

..... (Eqⁿ. 1.1)

Table 1: FDI & GDP at factor cost (at 2004-05 prices)

(in Rs. Crores)

Year	FDI	Increase/ Decrease	Annual Growth Rate (AGR) %	GDP	Increase/ Decrease	Annual Growth Rate (AGR) %
1992-93	1094	—	—	1440504	—	—
1993-94	2018	+ 924	84.46	1522344	+ 81840	5.68
1994-95	4312	+ 2294	113.68	1619694	+ 97350	6.39
1995-96	6916	+ 2604	60.39	1737741	+ 118047	7.29
1996-97	9654	+ 2738	36.70	1876319	+ 138578	7.97
1997-98	13548	+ 3894	40.34	1957032	+ 80713	4.30
1998-99	12343	- 1205	- 8.89	2087828	+ 130796	6.68
1999-00	10311	- 2032	- 16.46	2246276	+ 158448	7.59
2000-01	12645	+ 2334	22.64	2342774	+ 96498	4.29
2001-02	19361	+ 6716	53.11	2472052	+ 129278	5.52
2002-03	14932	- 4429	- 22.87	2570690	+ 98638	3.99
2003-04	12117	- 2815	- 18.85	2777813	+ 207123	8.05
2004-05	17138	+ 5021	41.44	2971464	+ 193651	6.97
2005-06	24613	+ 7475	43.62	3253073	+ 281609	9.48
2006-07	70630	+ 46017	186.96	3564364	+ 311291	9.57
2007-08	98664	+ 28034	39.69	3896636	+ 332272	9.32
2008-09	123025	+ 24361	24.69	4158676	+ 262040	6.72
2009-10	123378	+ 353	0.29	4516071	+ 357395	8.59
2010-11	97320	- 26058	- 21.12	4937006	+ 420935	9.32
2011-12	165146	+ 67826	69.69	5243582	+ 306576	6.21
2012-13	121907	- 43239	- 26.18	5491042	+ 247460	4.72
CAGR	25.16%			6.58%		

Source: RBI's monthly Bulletins & Economic surveys of India.

Karl-Pearson's correlation coefficient = + 0.686 (at 1% significance level).

Table 2 about here portrays the impact of FDI during the early-reform phase and lateral-phase by using time series data from 1992-2013. The estimated regression results of equations 1.1, 1.2 and 1.3 are not encouraging and show that FDI inflows do not exert any independent influence on the GDP growth of the economy. The table reveals Durbin-Watson statistic values from 1.5 to 2.9 and thereby indicates a higher positive autocorrelation for Eq. 1.3. Moreover, the AIC and Schwarz criterion estimates of Eq. 1.1 henceforth indicates higher fluctuation in FDI and GDP growth during the lateral-phase. Hence both GDP and FDI have shown an improved performance during the first-half of the liberalization period (1992-93 to 2002-03). Therefore, analysis reveals that net effect of foreign capital on GDP is limited and ambiguous.

Table 2: Estimating impact of FDI on GDP contribution (1992-93 to 2012-13): regression results

Equations	Eq.1.1	Eq.1.2	Eq.1.3
Constant	1460717.39 (359427.53)	2098984.85 (586043.39)	123255.33 (114066.99)

Equations	Eq.1.1	Eq.1.2	Eq.1.3
β_{11}	- 0.170 (0.309)	0.076 (0.292)	0.924* (0.100)
B_{12}	- 3.004 (2.579)	- 0.636 (0.730)	0.841 (0.760)
β_{13}	- 3.889 (3.051)	- 1.092 (0.924)	0.268 (0.915)
β_{14}	150405.7* (40268.97)	329461.82 (105310.34)	21335.91 (12440.14)
R ²	0.999	0.999	0.998
SER	16971.36	46192.84	58518.05
SSR	1.440E+9	8.535E+9	5.137E+10
F-Statistic	1018.06*	736.74*	2195.13*
Akaike information Criterion	1693.64	3069.54	15662.65
Schwarz Criterion	1695.16	3070.53	15667.63
D.W. Statistics	2.901	1.844	1.552
Log Likelihood	- 841.82	- 1529.77	- 7826.33

Note: (i) Eqs 1.1, 1.2 and 1.3 shows the impact of FDI inflows on GDP contribution during early reform phase, lateral-reform phase and the entire-reform phase.

(ii) Figures in parenthesis are standard errors.

(iii) * denotes statistically significant at 5% level of significance.

(2) FDI & Growth of Exports

Progressively liberal policies have lead to increasing inflows of foreign direct investment in the country. FDI not only provides financial capital to the host country but is also a tool for

bringing knowledge and integration into global production chains which are the foundation of a successful export strategy. The international firms first choose to use a country as a target for FDI and then for production destined for global markets i.e. exports. Thus the main avenue to enter an international network is through FDI.

Table 3: Growth of annual exports during early and lateral post-reform phase (in Rs. Crores)

Annual Exports during Early-Phase (1992-93 to 2002-03)				Annual Exports during Lateral-Phase (2003-04 to 2012-13)			
Year	Annual Exports	Increase/ Decrease	Annual Growth Rate (AGR) %	Year	Annual Exports	Increase/ Decrease	Annual Growth Rate (AGR) %
1992-93	53688	—	—	2003-04	293367	+ 38230	14.98
1993-94	69751	+ 16063	29.92	2004-05	375340	+ 81973	27.94
1994-95	82674	+ 12923	18.53	2005-06	456418	+ 81078	21.60
1995-96	106353	+ 23679	28.64	2006-07	571779	+ 115361	25.27
1996-97	118817	+ 12464	11.72	2007-08	665471	+ 93692	16.39
1997-98	130100	+ 11283	9.50	2008-09	840755	+ 175284	26.34
1998-99	139752	+ 9652	7.42	2009-10	845534	+ 4779	0.57
1999-00	159561	+ 19809	14.17	2010-11	1142922	+ 297388	35.17
2000-01	203571	+ 44010	27.58	2011-12	1465959	+ 323037	28.26
2001-02	209018	+ 5447	2.67	2012-13	1438692	- 27267	- 1.86
2002-03	255137	+ 46119	22.06				
CAGR	15.22%			CAGR	17.23%		

Source: Director General of Commercial Intelligence and Statistics (DGCI&S), Kolkata.

Karl-Pearson's correlation coefficient (FDI and Exports) = + 0.941 (at 1% significance level).

Table 3 about here exhibits the trend and growth in annual exports during the post-reform period. The greatest increase in India's annual exports has been in 2002-03 (Rs. 46,119 crores) with a CAGR of 15.22%, whereas during the lateral-reform phase the maximum increase has been during 2011-12 (Rs. 3,23,037 crores) with a CAGR of 17.23%. This indicates higher annual exports resulted during the lateral-phase of post-liberalisation. The Karl Pearson's coefficient of correlation between FDI inflows and exports has been 0.941, which thereby depicts that both variables are significantly related to each other and have shown an identical growth trend since post-liberalisation.

Table 4: Estimating impact of FDI on annual exports (1992-93 to 2012-13): regression results

Equations	Eq.2.1	Eq.2.2	Eq.2.3
Constant	9355.36 (11760.22)	- 87617.97 (78833.99)	- 26471.10 (47905.89)
β_{11}	0.915 (0.516)	0.159 (0.294)	0.910* (0.170)
B_{12}	- 3.904 (1.870)	- 0.420 (1.209)	2.016* (0.873)
β_{13}	- 0.707 (1.828)	- 3.633 (1.393)	- 1.178 (1.113)
β_{14}	10696.59 (9029.45)	195329.59* (60145.78)	7416.42 (6765.96)
R ²	0.980	0.982	0.978
SER	11176.08	76004.63	74760.60
SSR	6.245E+8	2.311E+10	8.384E+10
F-Statistic	62.369*	55.301*	167.16*
Akaike information Criterion	3464.26	8169.41	33640.49

Equations	Eq.2.1	Eq.2.2	Eq.2.3
Schwarz Criterion	3465.78	8170.39	33645.47
D.W. Statistics	2.681	2.177	2.244
Log Likelihood	- 1727.13	- 4079.71	- 16815.25

Note: (i) Eqs 2.1, 2.2 and 2.3 shows the impact of FDI inflows on annual exports during the early-reform phase, lateral-reform phase and the entire-reform phase.

(ii) Figures in parenthesis are standard errors.

(iii) * denotes statistically significant at 5% level of significance.

Table 4 about here portrays the impact of FDI during the early and lateral-phase by using time series data from 1992-2013. The estimated regression results are not encouraging and depicts that FDI inflows do not exert any independent influence on exports growth of the economy. Facts reveal that only in case of Eq. 2.3, the coefficient of FDI is found to be significant at 5% level of significance, which henceforth indicates the limited and ambiguous impact of FDI inflows on annual exports.

(3) FDI & Growth of Imports

Foreign Direct Investments in India have considerable impact on annual imports. After the adoption of liberalization policy efforts have been continuously made to liberalize imports as well. Higher import tariffs act as a disincentive to the flow of international direct investment. Thus to increase FDI inflows in the Indian economy, import tariffs and duties have to be reduced to match the world standards. Table 5 about here depicts the maximum increase in annual imports during 2002-03 (Rs.52,006 crores) with a CAGR of 15.08%, whereas the maximum increase has been during 2011-12 (Rs.6,61,996 crores) with a CAGR of 22.21% and hence depicts higher annual imports resulting during the lateral-phase of post-liberalisation period.

Table 5: Growth of annual imports during early and lateral post-reform phase (in Rs. Crores)

Annual Imports during Early-Phase (1992-93 to 2002-03)				Annual Imports during Lateral-Phase (2003-04 to 2012-13)			
Year	Annual Imports	Increase/ Decrease	Annual Growth Rate (AGR) %	Year	Annual Imports	Increase/ Decrease	Annual Growth Rate (AGR) %
1992-93	63375	—	—	2003-04	359108	+ 61902	20.83
1993-94	73101	+ 9726	15.35	2004-05	501065	+ 141957	39.53
1994-95	89971	+ 16870	23.08	2005-06	660409	+ 159344	31.80
1995-96	122678	+ 32707	36.35	2006-07	840506	+ 180097	27.27
1996-97	138920	+ 16242	13.24	2007-08	1012312	+ 171806	20.44
1997-98	154176	+ 15256	10.98	2008-09	1374436	+ 362124	35.77
1998-99	178332	+ 24156	15.67	2009-10	1363736	– 10700	– 0.78
1999-00	215236	+ 36904	20.69	2010-11	1683467	+ 319731	23.44
2000-01	230873	+ 15637	7.26	2011-12	2345463	+ 661996	39.32
2001-02	245200	+ 14327	6.21	2012-13	2669162	+ 323699	13.80
2002-03	297206	+ 52006	21.20				
CAGR	15.08%			CAGR	22.21%		

Source: Director General of Commercial Intelligence and Statistics (DGCI&S), Kolkata.

Karl-Pearson's correlation coefficient (FDI and Imports) = + 0.930 (at 1% significance level).

Table 6: Estimating impact of FDI on annual imports (1992-93 to 2012-13): regression results

Equations	Eq.3.1	Eq.3.2	Eq.3.3
Constant	25841.16 (6777.97)	– 172348.28 (161295.45)	–25288.29 (61767.56)
β_{11}	– 0.093 (0.460)	0.834 (0.388)	1.286* (0.145)
B_{12}	– 2.835* (0.992)	0.446 (2.460)	2.814* (1.104)
β_{13}	0.795 (1.439)	– 5.500 (2.723)	– 4.142* (1.644)
β_{14}	28551.38 (11863.91)	170349.07 (116434.19)	2022.13 (8346.38)
R ²	0.995	0.980	0.988
SER	6885.40	147286.7	95781.12
SSR	2.370E+8	8.677E+10	1.376E+11
F-Statistic	245.01*	49.74*	310.03*
Akaike information Criterion	5584.51	28651.62	66856.51
Schwarz Criterion	5586.02	28652.61	66861.48
D.W. Statistics	1.544	2.546	2.844
Log Likelihood	– 2787.26	– 14320.81	–33423.25

Note: (i) Eqs 3.1, 3.2 and 3.3 shows the impact of FDI inflows on annual imports during the early-reform phase, lateral-reform phase and the entire-reform phase.

(ii) Figures in parenthesis are standard errors.

(iii) * denotes statistically significant at 5% level of significance.

Table 6 about here portrays the impact of FDI during the early and lateral-phase by using time series data from 1992-2013. The estimated regression results of equations 3.1, 3.2 and

3.3 are not encouraging and show that FDI inflows do not exert any independent influence on country's annual imports. The table reveals Durbin-Watson statistic values of regression models from 1.5 to 2.8, which henceforth indicates a higher negative autocorrelation for Eq.3.3. Thus, net effect of FDI on annual imports is limited and ambiguous.

(4) FDI & Organised Employment

It is often believed that foreign investment is expected to have significant impact on home labor market in terms of employment generation and wages given to the workers. Thus FDI benefits home workers because there will be expansion in the firm. But there are others who believe that FDI hurts workers in the home country because jobs are moved abroad. Table 7 about here depicts that maximum increase in employment during the early-phase has been in 1995-96 (4.16 lakh persons) with a CAGR of (–)0.06%, whereas the maximum increase during the lateral-phase has been during 2008-09 (6.23 lakh persons) with a CAGR of 1.22% and hence depicts employment resulting during the lateral-phase of post-liberalisation period.

Table 7: Growth in organised employment during early and lateral reform phase (in lakh persons)

Organised Employment during Early-Phase (1992-93 to 2002-03)				Organised Employment during Lateral-Phase (2003-04 to 2012-13)			
Year	Annual Employ- ment	In- crease/ De- crease	Annual Growth Rate (AGR) %	Year	Annual Employ- ment	In- crease/ De- crease	Annual Growth Rate (AGR) %
1992-93	271.77	—	—	2003-04	264.43	– 5.57	– 2.06
1993-94	273.75	+ 1.98	0.73	2004-05	264.58	+ 0.15	0.06
1994-95	275.25	+ 1.50	0.55	2005-06	269.92	+ 5.34	2.02
1995-96	279.41	+ 4.16	1.51	2006-07	272.84	+ 2.92	1.08
1996-97	282.45	+ 3.04	1.09	2007-08	275.49	+ 2.65	0.97

1997-98	281.66	- 0.79	- 0.28	2008-09	281.72	+ 6.23	2.26
1998-99	281.13	- 0.53	- 0.19	2009-10	287.08	+ 5.36	1.90
1999-00	279.60	- 1.53	- 0.54	2010-11	289.99	+ 2.91	1.01
2000-01	277.89	- 1.71	- 0.61	2011-12	295.79	+ 5.80	2.01
2001-02	272.06	- 5.83	- 2.10	2012-13	298.62	+ 2.83	0.96
2002-03	270.0	- 2.06	- 0.76				
CAGR	- 0.06%			CAGR	1.22%		

Source: Director General of Employment and Training (DGE&T), Ministry of Labour and Employment.

Karl-Pearson's correlation coefficient (FDI and Employment) = 0.686 (at 1% significance level).

Table 8: Estimating impact of FDI on organised employment (1992-93 to 2012-13): regression results

Equations	Eq.4.1	Eq.4.2	Eq.4.3
Constant	- 3.331 (55.283)	279.19* (98.150)	67.418* (30.542)
β_{11}	1.033* (0.201)	- 0.094 (0.387)	0.767* (0.109)
B_{12}	- 2.675E-4 (3.323E-4)	- 6.225E-6 (2.502E-6)	8.275E-5* (2.845E-5)
β_{13}	2.421E-4 (3.245E-4)	- 1.590E-5 (2.411E-5)	4.129E-5 (3.426E-5)
β_{14}	- 0.819 (0.796)	5.099* (1.986)	- 0.621* (0.234)
R ²	0.882	0.994	0.941
SER	1.9927	1.3084	2.5152
SSR	19.855	6.847	94.894
F-Statistic	9.317*	164.22*	59.767*
Akaike information Criterion	48.233	33.388	141.652
Schwarz Criterion	49.746	34.374	146.63
D.W. Statistics	1.620	2.045	1.523
Log Likelihood	- 19.117	- 11.694	- 65.826

Note: (i) Eqs 4.1, 4.2 and 4.3 shows the impact of FDI inflows on organised employment during the early-reform phase, lateral-reform phase and the e-ntire-reform phase.

(ii) Figures in parenthesis are standard errors.

(iii) * denotes statistically significant at 5% level of significance.

Table 8 about here portrays the estimated regression results of equations 4.1, 4.2 and 4.3 which thereby depicts the impact of FDI inflows on country's organised employment. The estimated results revealed a significant impact of FDI inflows in equation 4.3 which shows an overall improvement in employment since post-liberalisation. The table reveals Durbin-Watson values of regression models from 1.5 to 2.0, which henceforth indicates a higher positive autocorrelation for Eq.4.3. Thus, we can say that in developing countries like India, FDI brings in new technology which is unsuitable in labor surplus countries like India as such technologies are all labor displacing ones. Thus first a proper analysis should be done and then only that technology which suits the requirements of India should be transferred into India.

CONCLUSION

Foreign Direct Investment is generally considered as a driving force in the integration of developing economies into globalisation process. The findings of the present study concludes that FDI inflows have had a significant impact on India's GDP contribution, annual exports and imports which henceforth depicts that FDI can play a significant role in the development of Indian economy. FDI can stimulate local entrepreneurship by providing increased competition and lowers the fixed cost of developing new products by bringing in new technology and managerial expertise thereby contributing significantly towards a higher growth rate.

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