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Macroeconomic Variables, Firm Characteristics and Influence on Foreign Direct Investment (FDI) Evidence from India

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Abstract: *The paper investigates objective of this paper is to examine the role of macroeconomic factors and firm characteristics in explaining Foreign Direct Investment (FDI) inflows in India. In this study using cross section time series data for 15 macro economic factors and the period of study is from 2000 to 2014. Our empirical findings that the significance relationship between macroeconomic variables and FDI inflows. This paper finds that FDI flows into the different sectors of the economy (namely primary, manufacturing, and services) exert different effects on economic growth. FDI inflows into the primary sector tend to have a negative effect on growth, whereas FDI inflows in the manufacturing sector a positive one.*

Keywords: *FDI Inflows, macro economic variables, primary sector, manufacturing, service sector*
JEL Classification: *F21, E2*

I. Introduction

Foreign capital plays a constructive role in a country's economic development. Foreign direct investment (FDI) is regarded as a factor that drives economic growth (Wang, 2009). Many governments from developed and developing countries believe that FDI can help them get through stagnation and even circumvent the poverty trap (Brooks et al., 2010). India is the second fastest growing major economy in the world. Indian economy is diverse and encompasses agriculture, handicrafts, manufacturing, textile and a multitude of services (Wang *et al.*, 2010). India adopted a socialist inspired approach for most of its independent history with the strict government control over private sector participation, foreign trade and foreign direct investment. In 1991, Government of India initiated a no. of economic reforms. As a result of the various policy initiatives taken, India has rapidly changing from restrictive regime to a liberal one.

According to International Monetary Fund (IMF), FDI is defined as "an investment operating in an economy other than that of the investor." The investor's purpose is to have an effective voice in the management of the enterprise (IMF, 1977).

• FDI is the process by which the residents of one country (the source) acquire the ownership of assets for the purpose of controlling the production, distribution and other productive activities of a firm in another country (the host country)

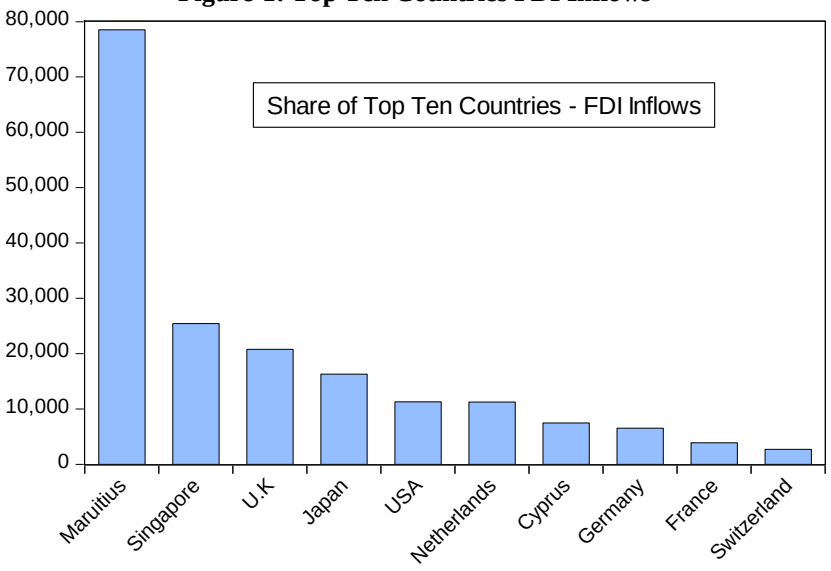
There are two types of FDI

Greenfield Investment: A form of FDI where a parent company starts a new venture in a foreign country by constructing new factories and/or stores.

Mergers and Acquisition: It occurs when a transfer of existing assets from local firms takes place.

According to the UNCTAD report of 2014, China has the highest FDI inflows among all the developing countries like Hong Kong, Russia, Singapore, Brazil and India; because China has introduced FDI over 20 years ago and has progressively pursued foreign investment while adjusting its FDI policies. Since 1993, China has attracted the largest amount of FDI of all developing countries while increasing its levels of both exports and technological advancement (Monhanty *et al*., 2007) The FDI has coming from various parts of world, in that the major ten countries sharing huge. The figure 1, shows that the major contribution has come from the Maruitius, Singapore and U.K has sharing second and third places respectively. There were 50-60 countries has been deposited their funds in the form of FDI in India every year.

Figure-1: Top Ten Countries FDI Inflows



Cumulative FDI inflows received during April 2000 to August 2012 were 266, 361 US$ mn (Table 1). From the year 2000 up to 2002, investments into India grew 52% but declined during the subsequent two years from 2002 to 2004. India once again experienced a surge in investments, growing 40% in 2004-05 and 48% in 2005-06, respectively. The year 2006-07 was an exceptional year with a 146% growth in FDI. After the year 2005-06, the stepping down in the growth rate, the year 2009-10, 2010-11 and 2012-13 were shown the negative growth rate.

Table 1: Foreign Direct Investment Inflows (FDI)

S.No	Year (April – March)	FDI Inflows Total FDI Flows (in US $)	% Growth over Previous Year(US $ Terms)
1	2000-01	4,029	-
2	2001-02	6,130	(+) 52%
3	2002-03	5,035	(-) 18%
4	2003-04	4,322	(-) 14%
5	2004-05	6,051	(+) 40%
6	2005-06	8,961	(+) 48%
7	2006-07	22,826	(+) 146 %
8	2007-08	34,843	(+) 53%
9	2008-09	41,873	(+) 20%
10	2009-10 (P)+	37,745	(-) 10%
11	2010-11 (P)+	34,847	(-) 08%
12	2011-12 (P)	46,553	(+) 34%
13	2012-13(P)	34,298	(-) 26 %
14	2013-14 (P)	36,396	(+) 6%
Cumulative Total (from April,2000 to March,2014) - 149,663 P –Provisional , "+" – Reinvested and other capital			

Source: Department of Industrial Policy & Promotion, Govt. of India

Table: 2
Foreign Direct Investment Equity Inflows – Monthly Wise
(Amount in US $ Million)

	Year				
	2010	**2011**	**2012**	**2013**	**2014**
April	2339	2179	3121	1857	2322
May	2095	2213	4664	1327	1631
June	2582	1380	5656	1244	1444
July	3516	1785	1099	1475	1657
August	3268	1330	2830	2264	1408
September	1512	2118	1766	4679	4132
October	2232	1392	1161	1942	1227
November	1735	1628	2538	1058	1638
December	1542	2014	13353	1100	1107
January	2042	1042	2004	2157	2189
February	1717	1274	2211	1795	2017
March	1208	1074	8101	1525	3533
Total	25,788	19,429	36,504	22,423	24035

II. Literature Review

Various theories have been developed since the 1960s to explain FDI. These theories proclaim a number of determinants that could explain foreign direct investment flows, involving the micro (e.g., organisational aspects) and macro (e.g., resource allocation) dimensions (Dunning and Lundan, 2008). The micro dimension includes factors intrinsic to the company itself, such as ownership advantages, cost reduction and economies of scale, whereas the macro dimension concerns market specific factors such as barriers to entry, availability of resources, political stability, country risk and market size, among others (Faeth, 2009)

Balasubramanyam and Mahambare (2003) as well as Fischer (2002) argue that the reforms implemented so far have not eliminated the distinct anti-export bias of India's trade policy.

Janicki and Wunnava (2004), using the Institutional Investor country risk rating, provided evidence that higher risk reduces the FDI receipts. Kinoshita and Campos (2003) provided evidence that rule of law and quality of bureaucracy, are significant FDI drivers. On the other hand, the FDI restrictions were found to be efficient barrier to FDI inflows.

Arabi (2005) and Agarwal (2001), FDI in India has remained domestic market seeking. It is widely believed that the type of FDI and its structural composition matter at least as much for economic growth effects as does the overall volume of inward FDI.

Agrawal and Shahani (2005) reckon that it is the quality of FDI that matters for a country like India rather than its quantity. FDI is often supposed to be of higher quality if it is export oriented, transfers foreign technologies to the host country, and induces economic spillovers benefiting local enterprises and workers (Ender wick 2005).

Agrawal (2005) estimates a fixed effects model based on pooled data for five South Asian host countries, among which India figures prominently, and the period 1965-1996. The coefficient of the FDI-to-GDP ratio turns out to be negative, though not significant. However, this approach ignores that FDI is endogenous. Moreover, the inclusion of exports as a right hand side variable may bias the coefficient of the FDI variable downwards to the extent that the growth impact of FDI may run through export promotion.

Bitzenis (2006), reviewing the various definitions of FDI, concludes that key features of the foreign direct investments are "...investing / acquiring / obtaining a foreign firm or asset and influencing / controlling the management operations".

FDI is expected to accelerate or contribute to the economic growth of all countries. The nexus between FDI and economic growth has been a subject of great discussion for several past years. Monhanty *et al* (2007) examined the interrelations among the variables FDI, GDP, exports, and imports of the four countries, china, India, Malaysia, and Singapore, using the technique of Panel Data Analysis. Their study confirmed that FDI promotes economic growth, provided an estimate that on dollar of FDI adds about 3.27 dollars to the GDP of each of the four countries.

Narayana *et al.* (2008), analysed theoretically India's economic growth and the role of FDI. They showed the comparative analysis of the Indian and Chinese economy.

Elboiashi *et al.* (2009), investigated the causal relationships between FDI, domestic investment (DI) and economic growth (GDP) in Egytian, Moroccan and Tunisian economies. They applied co-integration time series techniques, Vector Error Correction (VEC) model over the sample period of 1970-2006. They found a unidirectional causality between FDI and GDP in Egypt and Morocco, and bi-directional causality between FDI and GDP in Tunisia.

Wang *et al.* (2010), examined logistics FDI and GDP in two aspects of time series and growth rate of china. They found empirically that logistic FDI improved the quality of foreign investment and promoted the change of China's economic growth pattern to ensure the development of China's economy.

Agrawal *et al.* (2011), investigated the effect of FDI on economic growth of China and India. They studied possible reasons behind China's great showed of FDI and the lessons India should learn from China for better utilization of FDI.

Bose (2012) studied directed towards detecting the positive and negative sides for the foreign investors while they go for direct investment in India and China. A descriptive and explorative research study had been carried out for investigating the current proposition of the concerned case of FDI in those two countries.

Kadam (2012), analyzed the direction and impact of FDI on the Indian economy for the period of 2000-01 to 2010-11 and its reference period was 2010-11. Statistical methods like tabulations, percentage ratios, etc., were applied to evaluate the data and to turn up the noteworthy inferences.

Devajit (2012), tried to find out how FDI seen as an important economic catalyst of Indian economic growth by stimulating domestic investment, increasing human capital formation and by facilitating the technology transfers.

III. Objectives Of The Study And Contribution

* To examine the macro variables impact towards FDI inflows
* To examine the macro variables impact towards the inviting FDI inflows in Primary, Manufacturing and Service sector.

This research attempts will gives the result related with cause and effect of the economy condition. In other words, this will lead to understand the relationship between Macroeconomic indicators and the FDI inflows.

IV. Methodology

Data:

Data has been obtained from the Reserve Bank India (RBI) and Department of Industrial Policy and Promotion (DIPP), and World bank data official website. The secondary data alone used for this study. The Macro variables are considered for this study GDP per capita Growth, Inflation, Market Capitalization of Companies(US$), Export Volume index, Import volume index , Gross domestic savings, Gross Capital Formation , Labour Force , Real Interest rate, Research and Development Expenditure towards GDP,CPIA Business Environment rating, FDI in Primary Sector, FDI in Manufacturing Sector, and FDI in Service Sector.
The study period was from 2000 to 2014. The major objective of this paper is to analyze the impact of FDI inflows on the GDP growth.

The purpose of the empirical analysis is to determine whether FDI in the primary, manufacturing, and services sectors exerts different effects on a country's growth. Following Borensztein et al. (1998), Carkovic and Levine (2002), and Alfaro et al. (2003), we look at the direct effect of the different types of FDI on economic growth using cross-section regressions with 47 countries for the time period 1980-1999.
Initially, as a benchmark, we calculated the impact of overall FDI inflows on economic growth based on the following equation:

Data on FDI inflows, however, includes foreign investment in all sectors of the economy: primary, manufacturing, and services. We pursue this hypothesis and test the direct impact foreign investment in different sectors had on growth. Tables 4 to 7 present the results for the estimation that uses only FDI inflows in each sector, following:

$$Growth_i = \beta_0 + \beta_1 gdpgrowth + \beta_2 controls + \beta_3 FDI_i^{\,j} + \nu_i$$

where j corresponds to the primary, manufacturing, or services sectors, respectivelym

V. Results And Discussion:

FDI to have a positive effect after controlling for initial GDP, macroeconomic instability (proxied through inflation), Gross Domestic Savings and Gross Capital Formation and R&D Expenditure/GDP. All regressions reported in Table 4 find the coefficients on FDI to range from 0.0008 to 0.0024 according to the different sets of control variables. Our main finding – the positive significance of FDI inflows – seems to corroborate the notion that FDI plays a positive role for FDI in generating economic growth, but these effects seem to emerge from foreign investment in the manufacturing sector. The R-square value is FDI in growth sector the all together the macro variables contribute is 0.845. Gross Domestic Savings and market Capitalisation companies has the high impact towards FDI inflows.

Table 5, the coefficient flows, manufacturing sector majority shows the positive relationship. The FDI primary sector is has the negative relationship in most cases. Market capitalization and Capital formation has the high impact contributed towards FDI inflows in primary sector.

Table-6, the column (5) and column (6) has shows the high positive relationship. The column (7) the impact factors of macro variable value is 0.833, the column (2) and column (6) shows the high R-squared value.
Table-7, column (2) and column (6) show the high squared value. The coefficient value is range from 0.002 to 0.018. The FDI in service sector shows the negative relationship.

VI. Conclusion

This paper finds that FDI flows into the different sectors of the economy (namely primary, manufacturing, and services) exert different effects on economic growth. FDI inflows into the primary sector tend to have a negative effect on growth, whereas FDI inflows in the manufacturing sector a positive one. One can conjecture that these investments, given their nature — agriculture and mining — have little potential for the host economy. FDI flows to manufacturing seem to have a positive effect on growth. Indeed, most of the theoretical work on the benefits associated with FDI tends to be related to the manufacturing-industry sector.

Foreign investment in the service sector has an ambiguous effect. The macroeconomic literature had focused on total FDI inflows or stocks, in part due to data limitations. This work suggests that not all forms of foreign investment seem to be beneficial to Indian economy

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Table -3
Descriptive Statistics

Variables	Mean	Std.Dev	Skewness	Kurtosis	Jarqu-Berra	Prob.
GDP Per Capita Growth	0.007367	0.003748	0.668029	2.14565	1.467063	0.48021
Inflation	11.95718	0.226468	0.072696	1.536452	1.467063	0.532109
Market Capitalisation/GDP	6.908633	3.061345	0.35613	1.58773	1.459395	0.482055
Export Volume Index	0.202497	0.083669	0.621647	2.984243	0.901851	0.637038
Import volume Index	211.5598	78.21091	-0.03034	1.578513	1.180846	0.554093
Gross Domestic Savings	307.0477	173.7164	0.072089	1.428356	1.452996	0.4836
Gross Capital Formation	3.14E+11	1.77E+11	0.159784	1.423003	1.510276	0.469946
Labour Force/GDP	32.20616	5.002788	-0.57652	1.691846	1.773768	0.411937
Real interest rate	5.748653	0.176956	-0.19728	1.513551	1.379704	0.50165
R&D Expenditure/GDP	0.07367	2.529703	-0.555	2.796308	0.742939	0.68972
CPIA Business Environment Rating	3	0.049676	-0.02207	1.501004	1.311881	0.518954
Obs.	14	14	14	14	14	14

Table -4
Foreign Direct Investment (FDI) and Growth

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
GDP Per Capita Growth	0.0024 (1.247)	1.83E-05 (0.2214)	0.0018* (2.11)	0.0033* (2.069)	0.0033* (2.06)	-0.0009* (-2.020)	0.0034* (2.16)	0.0008 (5.08)**	-0.0026* (-2.455)		-0.0018 (-0.067)	-0002 (-1.66)
Inflation	0.006* (2.09)										0.0011 (0.91)	-00012 (2.07)
Market Capitalisation/GDP		0.035* (1.98)									0.0230 (0.69)	0.020 (1.36)
Export Volume Index			2.4E-05* (1.98)								3.63E-05 (0.26)	4.8E-05 (0.86)
Import volume Index				1.0E-05 (1.93)							7.60E-06 (0.06)	-
Gross Domestic Savings					1.0E-1* (1.99)						-4.30E-14 (-0.89)	-3.7E-4 (1.53)
Gross Capital Formation						0.005* (3.43)					6.27E-05 (0.10)	2.6-E-5 (0.08)
Labour Force/GDP							-0.005 (1.78)				-0.0015 (-0.02)	-
Real interest rate								-0.0006 (-1.61)			-9.43E-05 (-0.09)	-
R&D Expenditure/GDP									0.056** (3.04)		0.0365 (0.69)	0.034 (1.14)
CPIA Business Environment Rating										0.0041 (1.60)	-0.0009 (-0.13)	-
R^2	**0.294**	**0.619**	**0.273**	**0.264**	**0.775**	**0.514**	**0.236**	**0.208**	**0.455**	**0.206**	**0.845**	**0.826**

*significant at 5% level

Notes: All regressions include a constant term and are estimated by OLS with White's correction of heteroskedasticity. t-values are in parentheses. The Initial GDP variable is the log of the real GDP per capita at the beginning of the period. Inflation is the log of (1+ average inflation of the period). Gross Capital Formation (Gross Capital Formation/GDP).Labour force (Labour force/GDP) Real interest rate (1+log average interest rate). CPIA measured by the average score in the CPIA Environmental Quality Indicators. FDI is log (1+Total FDI inflows/GDP).

Table -5
FDI Inflows in Primary Sector

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
GDP Per Capita Growth	0.0016 (1.40)	0.0003 (0.47)	0.002 (1.35)	0.002 (1.46)	-0.001 (-0.551)	-0.0008 (-0.79)	-0.04 (-1.03)	0.078* (1.98)	-0.008 (-1.88)
Inflation	0.0002 (0.530)						0.001 (1.97)		0.002* (2.02)
Market Capitalisation/GDP		0.01* (2.65)					0.017 (0.99)	0.055 (1.87)	
Export Volume Index			-7.73 (-0.27)				8.9e5 (0.89)		0.0022* (3.01)
Gross Domestic Savings				8.9E16 (0.093)			-5.09e14 (1.39)	0.0017* (1.96)	
Gross Capital Formation					0.0005 (1.85)		0.014 (0.355)		
R&D Expenditure/GDP						0.04* (3.06)	0.003 (1.18)		0.022* (1.98)
FDI in Manufacturing Sector	0.0007 (1.21)	0.0001 (.0465)	0.0012 (.0465)	-0.0009 (-1.273)	3.0e05 (0.05)	-0.007* (2.53)	0.0007 (0.51)	0.0033* (1.98)	-0.017* (-3.11)
R^2	**0.378**	**0.626**	**0.367**	**0.0364**	**0.514**	**0.652**	**0.833**	**0.713**	**0.762**

Table -6
FDI Inflows in Manufacturing Sector

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
GDP Per Capita Growth	0.016 (1.40)	0.003 (0.479)	0.0019 (1.355)	0.020 (1.460)	0.0010 (1.461)	-0.001 (-0.55)	-0.004 (-1.03)	-0.015* (-1.99)	-0.007* (-1.97)
Inflation	0.0002 (0.530)						0.001* (1.97)		0.001 (2.03)
Market Capitalisation/GDP		0.0031* (2.78)					0.017 (0.999)	0.022* (1.96)	
Export Volume Index			-7.7E06 (-0.274)				8.9 E5 (0.89)		0.0014 (1.98)
Gross Domestic Savings				8.9E16 (0.093)			-5.0E14* (3.55)	0.0014* (1.98)	
Gross Capital Formation					-0005 (1.85)		0.033 (1.18)		
R&D Expenditure/GDP						0.043* (3.06)	0.007 (0.51)		0.062 (2.64)
FDI Primary Sector	-0.000 (-1.47)	-0.001 (-0.465)	-0012 (1.273)	-0.0009 (-1.232)	3.8E5 (0.05)	-0.007* (-2.53)	0.0008 (0.91)	0.022 (1.66)	0.0013 (2.03)
R^2	**0.378**	**0.626**	**0.367**	**0.363**	**0.514**	**0.656**	**0.831**	**0.712**	**0.806**

*significant at 5% level

Table-7
FDI Inflows in Service Sector

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
GDP Per Capita Growth	0.0012 (1.20)	0.0003 (0.67)	0.002 (1.35)	0.004 (1.16)	-0.002 (-0.551)	-0.003 (1.18)	0.04 (-1.04)	0.018* (1.97)	-0.008 (-1.88)
Inflation	0.0042 (0.730)						0.001 (1.91)		0.002* (2.02)
Market Capitalisation/GDP		0.055* (2.88)					0.017 (0.56)	0.051 (1.88)	
Export Volume Index			-7.73 (-0.27)				8.9e17 (0.18)		0.0022* (3.01)
Gross Domestic Savings				8.9E05 (0.096)			-2.03e5 (1.45)	0.0011* (2.01)	
Gross Capital Formation					0.0002 (1.85)		0.012 (0.35)		
R&D Expenditure/GDP						0.04* (2.06)	0.004 (1.11)		0.022* (1.98)
FDI in Service Sector	-0.0087 (-1.91)	-0.0002 (-.0654)	-0.0012 (-.0465)	-0.0008 (-1.22)	0.014 (0.355)	-0.007 (1.53)	0.0007 (0.511)	0.0055* (1.97)	-0.017* (-3.11)
R^2	**0.356**	**0.565**	**0.306**	**0.041**	**0.475**	**0.612**	**0.814**	**0.702**	**0.734**

*significant at 5% level