MACRO- ECONOMIC DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN INDIA

Dr.J.Maheswari[1]

[1]*Assistant Professor, Department of Economics, Quaid-E-Millath Government College for women, Annasalai, Chennai-2, Tamilnadu, India.*

ABSTRACT

In the 1980s India's FDI policy began to liberalize. Anti-export bias, absence of domestic competition and restrictive FDI policy led to emergence of Indian-manufacturing as high cost, poor quality and low exported-oriented. As a part of this liberalisation measures government approach to FDI became more liberal. FDI in India increased from US $ 144 million in 1991-92 to $ 21.007 in 2010 an increase of about 685 times. In this background the present study has made an attempt to examine the macro economic factors that facilitated larger inflow of FDI in to the country.

KEYWORDS: Import, Substitution, Restrictions, Exports, Manufacturing Sector.

INTRODUCTION

In the 1980s India's FDI policy began to liberalize. The inward looking industrial and trade policies followed till 1970s with rigorous pursuance of import restrictions and indiscriminate import substitution, excessive planning, industrial licensing. Anti-export bias, absence of domestic competition and restrictive FDI policy led to emergence of Indian-manufacturing as high cost, poor quality and low exported-oriented. This status of manufacturing sector led government to implement partial measures of liberalisation, de-licensing and a host of incentives to break the stagnation in the industrial sector and to promote exports. As a part of this liberalisation measures government approach to FDI became more liberal.

Foreign countries were allowed to enter in to de-licensed 28 broad categories of industries and 82 bulk drugs and their formulations. The foreign companies with 100 percent export-orientation were exempted from the general ceiling of 40 percent under FERA and were exempt from licensing requirement for production in excess of licensed capacity and were provided duty-free access to imports of raw materials, intermediate goods and capital goods on Open General License (OGL).

With the initiation of new economic policy in 1991 and subsequent reforms process, India has witnessed a change in the flow and direction of FDI into the country. This is mainly due to the removal of restrictive and regulated

practices. FDI in India increased from US $ 144 million in 1991-92 to $ 21.007 in 2010 an increase of about 685 times. In this background the present study has made an attempt to examine the macro economic factors that facilitated larger inflow of FDI in to the country.

Potential Variables determining FDI Inflows in India:-

Based on the literature review, the present paper considers a set of potential determinant variables that influence the FDI inflows and classify the variables into eleven broad categories:

FDI= f (GDP, GFCF, ER, IMP, EXP, IIP, WPI, TROP, RDE, CRP, ENR)

Where, FDI = Foreign Direct Investment; GDP= Gross Domestic Product; GFCF= Gross Fixed Capital Formation; ER= Exchange Rate; IMP= Imports; EXP= Exports; IIP= Index of Industrial Production; WPI= Whole Sale Price Index; TROP= Trade Openness; RDE= Research & Development Expenditure; CRP= Bank's Credit to private as percentage of GDP; ENR= Enrolment Ratio in Higher Education.

Trend of FDI and Macro-Economic determinants of FDI:-

The Table 1 exhibits the general trend in the inflow of FDI during the study period of 1991-2010 in India and also the selected probable determinants of FDI.

Table 1 Inflow of FDI and Macro-Economic Determinants of FDI in India

Year	Inflow Of FDI	Gross Domestic Product	Gross Fixed Capital Formation	Exchange Rate	Imports	Exports	Index of Industrial Production	Whole Sale price index	Trade Oppenes	R&d Expenditure	Credit To private Sector	Enrolment Ratio
1991	3,535	13478890	324345	17.5	4319.29	3255.76	43.410	207.8	0.000562	543.451	25.20	4924868
1992	6,912	13671700	346149	22.7	4785.08	4404.18	43.665	228.7	0.000672	558.580	24.10	5265886
1993	18,620	14405040	358383	25.9	6337.45	5368.83	44.691	247.8	0.000813	539.724	24.98	5534966
1994	31,122	15223430	399271	31.4	7310.1	6975.14	47.365	112.6	0.000938	538.679	24.11	5817249
1995	64,854	16196930	464611	31.4	8997.07	8267.41	51.676	121.6	0.001066	549.478	23.92	6113929
1996	87,522	17377400	474782	32.4	12267.81	10635.33	58.421	127.2	0.001318	607.302	22.77	6574005
1997	129,898	18763190	503309	35.4	13891.97	11881.71	61.970	132.8	0.001374	604.253	23.68	6842598
1998	132,692	19570320	540525	36.3	15417.63	13010.06	66.086	140.7	0.001453	626.344	23.84	7260418
1999	92,599	20878270	601121	41.3	17833.19	13975.31	68.794	155.7	0.001524	694.970	23.96	7705520
2000	104,411	22223150	601074	43.1	21523.65	15956.14	73.345	161.3	0.001687	775.076	25.89	8050607
2001	160,711	23190630	645365	44.9	23087.28	20357.1	76.945	166.8	0.001873	843.626	28.85	8399443
2002	161,344	24537870	689224	47.2	24519.97	20901.8	79.096	175.9	0.001851	937.510	29.08	8964680
2003	95,639	25479280	783053	48.6	29720.59	25513.73	83.667	187.3	0.002168	1019.628	32.81	9516773
2004	147,814	27649590	931028	46.6	35910.77	29336.68	89.509	247.8	0.00236	1037.209	32.06	10011645
2005	192,707	29714640	1081791	45.3	50106.45	37533.95	100.000	112.6	0.002949	1052.257	35.57	10542262
2006	503,573	32542160	1231250	44.1	66040.89	45641.79	108.617	121.6	0.003432	1119.8.3	39.41	11137627
2007	654,950	35660110	1430636	45.3	84050.63	57177.93	122.625	127.2	0.00396	1999.164	43.23	11887095
2008	1,397,255	38989580	1452474	41.3	101231.17	65586.35	141.667	132.8	0.004279	22963.910	44.82	12727082
2009	1,309,799	41625090	1559126	43.4	137443.56	84075.51	145.233	140.7	0.005322	24821.630	48.95	13641808
2010	960,149	44937430	2016186	48.40	136373.6	84553.4	152.900	140.08	0.004916	27213.00	46.77	17211216

Source: Annual Reports of Ministry of Commerce and Industry, Department of Industrial Policy and Promotion, Government of India, Hand Book of Statistics, Reserve Bank of India, Central Statistical Organization (CSO), Department of Science and Technology, Government of India, Ministry of Human Resource Development, Government of India, and World Bank 's Data set Indicators worldbank.org/indicator(1991-2010)

Dependent Variable- Foreign Direct Investment:-

Foreign Direct Investment (FDI) is the dependent variable of the study. FDI is the investment inflows that come to India via different routes (like RBI, FIPB and SIA) and through different forms like financial collaboration and technical collaboration. The data for inflow of FDI during the study period are collected and compiled from the statistics released by Secretariat for Industrial Assistance, Department of Industrial Policy &

Promotion, Ministry of Commerce & Industry, and Government of India. The data of FDI is expressed in terms of Rupee value in millions.

POTENTIAL DETERMINANTS OF FDI IN INDIA

1. Gross Domestic Product: (GDP):-

Market seeking FDI requires a large market for efficient utilization of resources. The large market reduces the cost of production because

of lower fixed costs and economies of scale (Lim 2001). As the market size of a country, measured in terms of GDP grows, it is expected that inflow of FDI will also increase as more goods and services can be produced. Investors are keen to invest in a growing economy where they can benefit from the economies of scale and efficient utilization of resources from the large market size. The present study converted GDP at factor cost from 1991-2010 using the constant prices of base year 2004-05, to provide uniformity of the GDP data and used as one of the explanatory variable of determinants of FDI inflows in to India.

2.Gross Fixed CapitalFormation (GFCF):-

Gross fixed capital formation is used as a proxy for gross investment in the economy. Higher Gross capital formation leads to greater economic growth which is result of improvements in the investment climate which further helps to attract higher FDI inflows. Libor Krkoska (2001) and Lipsey (2000) find little evidence of FDI having an impact on capital formation in developed countries and observe that the most important aspect of FDI in the selected sample of countries is related to ownership change. However, a positive or negative and significant relationship between FDI and Capital Formation is expected.

3. Competitiveness expressed in terms of Exchange Rate (ER):-

Lim (2001) argues that depreciation of the currency (increase in the exchange rate) imply that foreign firms would be able to purchase assets and technology in the host country cheaply thus increasing FDI. On the contrary a decrease in the exchange rate, meaning in appreciation would imply more foreign currency earnings for the foreign investors. Hence would increase FDI inflow. In this background, the study includes exchange rate as a determinant of FDI inflow.

4. Foreign Trade : Imports and Exports (IMP/EXP):-

The data pertaining to Imports and Exports are collected from Annual Reports of RBI. The trends in the values of imports of the country remain fluctuating during the study period, but without drastic changes. The trend was maximum

in the year in 2010 (100 per cent and comparatively lowest in the year 2005 (71per cent). As far as Exports are concerned, the trend shows minimum increase without any larger fluctuations. This implies the stability of the economy with regard to trade relation with other countries.

5.Index of IndustrialProduction (IIP):-

The Index of Industrial Production (IIP) conveys the status of production in the industrial sector of an economy in a given period of time, in comparison with a fixed reference point in the past. IIP refers to Index of Industrial Production, a measure of growth in various sectors in Indian economy like manufacturing, white goods etc. With strong growth prospects and trend, it becomes an attractive option of investment both for Indian & Foreign investors. The study collected this data from Hand Book of Statistics released by RBI for the period of 1991-2010. In India the trend in IIP continues to remain high in the study period.

6. Inflation expressed in terms of Whole Sale Price Index (WPI):-

The Wholesale Price Index (WPI) is "the price of a representative basket of wholesale goods". According to Onyeiwu and Shrestha (2004), high inflation could also increase the cost of capital which would in turn affect profitability of FDI. Inflation trends seem to indicate that moderate inflation increases could be positively related with FDI. The data related to WPI for the present study is collected from Hand Book of Statistics released by RBI and WPI is converted with the common base year of 2004-2005.

7.Trade Openness (TROP):-

The proportion of country's GDP involved in international (exports and imports) trade has been recognized in the literature as good indicator for levels of trade openness. As country becomes more open, in terms of international trade transaction and more integrated with regional countries and the rest of the world, more FDI would be expected to flow to the host country. Numerous empirical studies suggest that trade (imports and exports) complements rather than substitutes for FDI. Multinational enterprises (MNEs) tend to invest

in the trade partner markets with which they are familiar.Hence, in this study the degree of openness is defined as the ratio of total trade to real GDP of the economy. The degree of openness of the Indian Economy is estimated by dividing the total merchandise trade with GDP. It means Trade openness= Exports + Imports/GDP. The Value of Exports and Imports are collected from annual reports of Ministry of Foreign Trade and External affairs, Government of India.

8. Research & Development Expenditure (RDE):-

Another relevant variable for foreign direct investment is the Research and Development Expenditure (R&D) in the host country. Research and development effort captures the dynamism of a region by looking at the resources it allocates to innovation activities. R&D is widely considered as a way to foster economic growth. Hence to gauge the impact of expenditure in Research and Development in attracting FDI, the study includes R&D expenditure as one of the variable among the macro-economic determinants of FDI.

9. Domestic Credit to Private Sector as Ratio of GDP (CPS):-

Domestic credit to private sector refers to financial resources provided to the private sector, such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment.. In the light of available empirical studies, the present study employs Domestic credit to private sector as percentage of GDP among the variables influencing FDI. The data is collected from World Bank's Development Indicators data set and expressed in terms of Millions of Rupees.

10.Gross Enrollment Ratio in Higher Education (ENR):-

Foreign direct investors are also concerned with the quality of the labour force in addition to its cost. In fact the cost advantages accrued by lower wages in developing nations can well be mitigated by low skilled workers. A more educated labour force can learn and adopt new technology faster and is generally more productive. There are several ways of measuring skill content of the work force. One measure that has turned important in analyzing skill bias has been percentage of workers who have completed high school education. In the absence of direct information on skill formation in India, Maiti and Mitra (2010) have considered education, specifically, enrolment ratio in engineering and management studies, as a proxy for available skill formation. They argue that with higher levels of education the quality of labour, and thereby their employability in the formal sector of the economy, would be enhanced. The present study measures the labour quality, using the Gross Enrollment Ratio (GER) in higher education.

CORRELATION MATRIX OF FDI AND DETERMINANT VARIABLES

In order to study the predictors associated with FDI, the selected list of predictor variables and the response variable FDI are used to estimate pair-wise correlation among them. The results obtained from correlation between predictor variables and response variable FDI is presented in the Correlation Matrix Table 2

Table 2 Pair-Wise Karl-Pearson Correlation Matrix between FDI and Predictor Variables

	FDI	GDP	GFCF	EXR	IMP	EXP	IIP	WPI	TROP	RDE	CPS	ENR
FDI	1	.881**	.866**	.413	.936**	.925**	.906**	-.341	.912**	.909**	.901**	.830**
GDP	.881**	1	.986**	.730**	.966**	.983**	.998**	-.334	.989**	.788**	.964**	.987**
GFCF	.866**	.986**	1	.660**	.971**	.983**	.982**	-.340	.978**	.796**.	.962**	.986**
EXR	.413	.730**	.660**	1	.554**	.612**	.704**	-.297	.668**	.304	.585**	.746**
IMP	.936**	.966**	.971**	.554**	1	.996**	.970**	-.330	.983**	.884**	.967**	.949**
EXP	.925**	.983**	.983**	.612**	.996**	1	.985**	-.334	.993**	.854**	.978**	.966**
IIP	.906**	.998**	.982**	.704**	.970**	.985**	1	-.351	.991**	.806**	.965**	.979**
WPI	-.341	-.334	-.340	-.297	-.330	-.334	-.351	1	-.371	-.219	-.265	-.311
TROP	.912**	.989**	.978**	.668**	.983**	.993**	.991**	-.371	1	.805**	.975**	.964**
RDE	.909**	.788**	.796**.	.304	.884**	.854**	.806**	-.219	.805**	1	.786**	.788**
CPS	.901**	.964**	.962**	.585**	.967**	.978**	.965**	-.265	.975**	.786**	1	.933**
ENR	.830**	.987**	.986**	.746**	.949**	.966**	.979**	-.311	.964**	.788**	.933**	1

Source: Computed using Table 1

*Denotes significance at 5% level

** Denotes significance atb1% level

RESULTS OF THE STUDY

From the Table 2 it is understood that FDI is significantly associated (P value less than 0.01) with Gross Domestic Product; Gross Fixed Capital Formation; Imports; Exports; Index of Industrial Production; Trade Openness; Research and Development Expenditure; Bank's Credit to Private as percentage of GDP and Enrolment ratio in higher education. The following inferences are drawn from the Table 2

❖ There is a positive (+) 0.881 coefficient of correlation (r) between GDP and FDI inflow in India. This implies that the two variables move in the same direction, so that with an increase in the values of GDP, the values of FDI inflow increases in India and vice versa. As the calculated coefficient of correlation (r) is close to +1 it shows a high degree of positive correlation between the two variables.

❖ There is a positive (+) 0.866 coefficient of correlation (r) between GFCF and FDI inflow in India. This implies that the two variables move in the same direction, so that with an increase in the values of GFCF, the values of FDI inflow increases in India and vice versa. As the calculated coefficient of

correlation (r) is close to +1 it shows a high degree of positive correlation between the two variables.

❖ There is a positive (+) 0.936 coefficient of correlation (r) between IMP and FDI inflow in India. This implies that the two variables move in the same direction, so that with an increase in the values of IMP, the values of FDI inflow increases in India and vice versa. As the calculated coefficient of correlation (r) is close to +1 it shows a high degree of positive correlation between the two variables.

❖ There is a positive (+) 0.925 coefficient of correlation (r) between EXP and FDI inflow in India. This implies that the two variables move in the same direction, so that with an increase in the values of EXP, the values of FDI inflow increases in India and vice versa. As the calculated coefficient of correlation (r) is close to +1 it shows a high degree of positive correlation between the two variables.

❖ There is a positive (+) 0.906 coefficient of correlation (r) between IIP and FDI inflow in India. This implies that the two variables move in the same direction, so that with

an increase in the values of IIP, the values of FDI inflow increases in India and vice versa. As the calculated coefficient of correlation (r) is close to +1 it shows a high degree of positive correlation between the two variables.

◈ There is a positive (+) 0.912 coefficient of correlation (r) between TROP and FDI inflow in India. This implies that the two variables move in the same direction, so that with an increase in the values of TROP, the values of FDI inflow increases in India and vice versa. As the calculated coefficient of correlation (r) is close to +1 it shows a high degree of positive correlation between the two variables.

◈ There is a positive (+) 0.909 coefficient of correlation (r) between RDE and FDI inflow in India. This implies that the two variables move in the same direction, so that with an increase in the values of RDE, the values of FDI inflow increases in India and vice versa. As the calculated coefficient of correlation (r) is close to +1 it shows a high degree of positive correlation between the two variables.

◈ There is a positive (+) 0.901 coefficient of correlation (r) between CPS and FDI inflow in India. This implies that the two variables move in the same direction, so that with an increase in the values of CPS, the values of FDI inflow increases in India and vice versa. As the calculated coefficient of correlation (r) is close to +1 it shows a high degree of positive correlation between the two variables.

◈ There is a positive (+) 0.830 coefficient of correlation (r) between ENR and FDI inflow in India. This implies that the two variables move in the same direction, so that with an increase in the values of GFCF, the values of FDI inflow increases in India and vice versa. As the calculated coefficient of correlation (r) is close to +1 it shows a high degree of positive correlation between the two variables

◈ The Table 2 shows a negative (-) .341 coefficient of correlation (r) between Whole sale Price Index (WPI) and FDI inflow in India. This implies that the two variables move in the opposite direction, so that with an increase in the values of WPI in India, the values of FDI inflow decreases and vice versa. As the calculated coefficient of correlation (r) is close to 0 it shows a relatively lesser degree of negative correlation between the two variables in Indian scenario.

◈ The Table 2 shows a .413 coefficient of correlation (r) between Exchange Rate (EXR) and FDI inflow in India. This implies that the two variables are not significantly correlated.

The two variables that are not significantly associated with the FDI is Whole Sale Price Index (WPI) and Exchange Rate and that narrowly misses the significant test. The purpose of the Whole Sale Price Index (WPI) is to monitor price movements that reflect supply and demand in industry, manufacturing and construction. This helps in analysing both macroeconomic and microeconomic conditions. It implies that the higher price level of the Indian Economy has been able to attract more foreign firms in her land. This is because a higher price in most cases brings higher profit to investors. However, there may be the apprehension that the increase in WPI may be the result of cost-push Inflation (Branson 1994). In this case, when the increase in WPI is due to cost driven, profits will come down. In such a situation, increase in price level may not attract more foreign firms.

Rapid fluctuations in exchange rates between home and host countries create confusion among foreign investors regarding expected value of future repatriations as well as the value of assets created in foreign locations. Empirical studies indicate that exchange rate volatility discourages FDI flows (Urata and Kawai, 1999). Thus in India Large variations in exchange rates, reflecting higher Volatility in domestic currency, appear to discourage inward FDI.

CONCLUSION

The result from the Pair-Wise Karl-Pearson Correlation Matrix between FDI and Predictor Variables reveals that FDI and all its potential determinants have a long-run equilibrium relationship. The most significant and influential factors are Gross Domestic Product; Gross Fixed Capital Formation; Imports; Exports; Index of Industrial Production; Trade Openness; Research and Development Expenditure; Bank's Credit to Private as percentage of GDP and Enrolment ratio in higher education. However the major determinants of FDI in India are market size, labor force growth, and trade openness Overall, India has to maintain growth momentum to improve market size, frame policies to make better use of their abundant labor forces, improve infrastructure facilities and follow more open trade policies for attracting more FDI in future.

REFERENCE

1.   *Annual Report of Ministry of Human Resource Development (2010), Government of India*

2.   *Annual Report, Ministry of Commerce & Industry Government of India.*

3.   *Annual Reports, Secretariat for Industrial Assistance, Department of Industrial Policy and Promotion, Ministry of Commerce & Industry, Government of India.*

4.   *Annual Survey of Industries, Ministry of Statistics and Programme Implementation, Government of India.*

5.   *Asiedu, E. (2002), "On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Different?", World Development, Vol. 30 No. 1, pp. 107–119*

6.   *Central Statistical Organization, Government of India*

7.   *Consolidated FDI Policy, Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India.*

8.   *Department of Revenue, Ministry of Finance, Government of India.*

9.   *Division of International Trade and Finance of the Department of Economic and Policy Research, Reserve Bank of India*

10. *Handbook of Statistics, RBI*

11. *Holland, D and N Pain, (1998), "The Diffusion of Innovations in Central and Eastern Europe: A Study of the Determinants and Impact of Foreign Direct Investment", NIESR Discussion Paper No. 137.*

12. *Hossein Nezakati et al (2011), "Do Local Banks Credits to Private Sector and Domestic Direct Investments Affect FDI Inflow? (Malaysia Evidence)", World Applied Sciences Journal 15 (11): 1576-1583, 2011.*

13. *Lankes and Venables (1996), "Foreign direct investment in economic transition: The changing Pattern of investments", Economics of Transition vol.4, 331-347.*

14. *Libor Krkoska (2001)*

15. *Libor, Krkoska. (2001), "Foreign direct investment financing of capital formation in Central and Eastern Europe", European Bank for Reconstruction and Development Working paper No. 67.*

16. *Lim, Ewe-Ghee (2001), "Determinants of, and the Relation Between, Foreign Direct Investment and Growth: A Summary of the Recent Literature", IMF Working Paper WP/01/175*

17. *Lipsey, Robert E. (2000), "Inward FDI and economic growth in developing countries", Transnational Corporations, Vol 9 (1), April 2000.*

18. *Noorbakhshi Farhad, Paloni Alberto and Youseff Ali (2001), "Human Capital and FDI Inflows to Developing Countries: New Empirical Evidence", World Development, 29(9), 2001, pp 1593-1610.*

19. *Nunes, C.L, Oscategui, J. and Peschiera, J. (2006), "Determinants of FDI in Latin America", Documento De Trabajo 252 of U.S. firms, Journal of International Economics No 33, pp 57-76*

20. *Onyeiwu, S. and Shrestha, H. (2004), "Determinants of Foreign Direct Investment in Africa", Journal of Developing Societies, 20 (1-2), 89-106.*

21. *Root, F. and Ahmed, A (1979), "Empirical Determinants of Manufacturing Direct Foreign Investment in Developing Countries", Economic Development and Cultural Change 27: pp 751-767.*

22. *Sahoo, P. (2006), "Foreign Direct Investment in South Asia: Policy, Trends, Impact and Determinants", Asian Development Bank Institute Discussion paper No. 56.*

23. *Schneider, F. and Frey, B (1985), "Economic and Political Determinants of Foreign Direct Investment", World Development 13, pp161-175.*

24. *World Investment Report (1993), "Transnational corporations and integrated international production", UNCTAD*