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Attracting Export-Oriented FDI: Can India Win the Race?

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Abstract

This paper examines the attractiveness of India as a host to export-oriented FDI (EFDI) in terms of a host of location-specific factors such as labour cost, skill, infrastructure, natural resources, openness and bilateral investment treaties (BITs). The study found that low level of general skills, infrastructure bottlenecks, and failures to use BITs as tools for attracting EFDI are main factors lowering the attractiveness of India as compared to others. The study with the purpose of better understanding the factors that are important at the firm level also have analyzed the role of various firm-specific factors that are important for export performance of foreign affiliates in Indian manufacturing.

Acknowledgements

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Jaya Prakash Pradhan[*]
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1.   Introduction

There is an intense competition among nations around the world to attract export-oriented FDI (EFDI). This is particularly true among developing countries that see EFDI as an instrumental tool to strengthening their export competitiveness particularly in the knowledge-based industries. There are many reasons for this competition. In general EFDI brings in a 'bundle of intangible assets' such as new technology, skill, marketing know-how and management which are relatively scarce in developing countries but are indispensable for export performance. This 'bundle of assets' also accompanies the local market oriented FDI (LMFDI), so what is important for the host developing countries is that EFDI generates relatively larger beneficial impact in the host economy. This is because the 'quality of FDI' is much larger in EFDI as compared to LMFDI.

One critical component of 'quality of FDI' lies in its extent and intensity of local linkage generation. EFDI can be expected to generate strong links with local economy compared to LMFDI in the host country specifically because it is motivated to exploit the locational advantages offered by the host county like low-cost labour, raw materials, components, parts, among others. In that case the scope for 'knowledge spillovers' from the entry of EFDI is much larger than LMFDI. The suppliers to EFDI may benefit when foreign firms help them with passing on new designs, drawings and specifications and other technical assistance to ensure quality and reliability in the supply of raw materials. The presence of EFDI may also induce purely domestic firms to diversify into export market when information on foreign markets brought in by foreign firms spill over to them. Another important aspect in which EFDI is relatively beneficial vis-à-vis LMFDI is the possibility 'crowding-out' effect. LMFDI being motivated to serve the domestic market can erode the market share of domestic firms because of their superior assets bundles.

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EFDI on the contrary can stimulate domestic investment by generating demands for intermediate goods. Besides, being primarily oriented to markets, which are external to the country of location, are less likely to adversely affect domestic firms.

Thus, it is not surprising to note that economies such as China, Costa Rica, Hungary, Ireland and Mexico who were able to attract EFDI have dramatically climbed up on the competitive scale of the global market (UNCTAD 2002). India, on the other hand, with its restrictive FDI policy over more than three decades since Independence has not been able to attract EFDI. Studies relating to that phase of restrictive policy regime could not find any difference in the export behaviour of foreign and domestic enterprises (e.g. Kumar 1990; Kumar and Siddharthan 1994). Starting in 1991 India has been pursuing an outward looking developmental strategy with liberal policy with respect to FDI. Recent studies relating to the 1990s period suggests that foreign firms have shown higher export performance as compared to domestic firms (Aggarwal 2002; Kumar and Pradhan 2003). Does this changing export orientation of foreign firms indicate that they have begun to use India as an export platform for global market albeit in modest way?

The present paper is intended to look into the attractiveness of India as a host country for EFDI. Understanding India's strengths as well as weaknesses as a host country to EFDI can help to develop an appropriate policy regime to better attract EFDI. The paper is structured as follows: Section 2 discusses different factors affecting India's role as a host to EFDI. Section 3 analyzes the export orientation of foreign firms in Indian manufacturing during 1990s. Section 4 provides the conclusions and policy implications.

2.   India as a Host to Export-oriented FDI

Traditionally India has not been a favourable destination for EFDI as compared to other countries such as China, Singapore or Malaysia. This fact is clearly visible in the marginal share of exports of foreign affiliates in total exports from India. For example, foreign affiliates contributed about 50 percent of exports in China but hardly 5 percent in India in 2001. Further, this export contribution of foreign firms in China is magnificent considering that they had contributed only 17 percent some few years back. In India their share was mere 3 percent in 1985 and 1991 then risen marginally to be persisting at 5 percent level for years since 1994.

Even countries such as Argentina, Brazil, Costa Rica, Mexico, Peru and Taiwan are found to have been able to attract EFDI considerably higher in significance as compared to India.

Table 1: Share of Foreign Affiliates in the Exports of Selected Host Developing Economies, Selected Years

Country	1985	1991	1994	1995	1997	1999	2000	2001
Argentina	..	..	..	14	..	..	29	..
Bolivia	..	..	..	11	..	9	..	..
Brazil	..	..	..	16	..	..	28	..
Chile	..	..	..	..	..	..	..	..
China	..	17	..	..	..	..	..	50
Colombia	..	..	..	6	..	..	14	..
Costa Rica	..	..	..	..	..	..	..	50
India	3	3	5	5	5	5	5	5
Malaysia	26	..	..	45	..	..	..	..
Mexico	..	..	..	15	..	..	31	..
Peru	..	..	..	25	..	..	24	..
Republic of Korea	..	..	..	..	..	15	..	..
Singapore	..	..	35	..	..	38	..	..
Taiwan	17	..	16	..	..	..	..	..

Note: Data for India since 1994 is obtained by dividing the total exports of foreign affiliates calculated based on C.M.I.E. Prowess database to total exports from India provided in Economic Survey 2001-2002; Data for Republic of of Korea and Singapore is the share in total manufacturing and for the rest it is the share in all industries; ..Denotes data is not available.

Source: UNCTAD, World Investment Report 2002, pp. 154.

Clearly India has performed poorly in attracting EFDI as compared to its peer groups such as China. The important question is why? The empirical literature on the location of EFDI indicate that countries with relatively low-cost (quality) labour, good infrastructure, availability of raw materials, size of the free trade zones and outward looking policy regime tend to attract more EFDI. The size of domestic market however is found to have a dampening effect on the export orientation of FDI (Woodward and Rolfe 1993; Kumar 1994 2002b). Let us now examine India's position vis-à-vis other countries on these factors to elicit answer to the poor performance of India in attracting EFDI.

As far as the labour cost is concerned, India appears to be not at a disadvantageous position vis-à-vis countries such as China, Brazil or Taiwan in attracting EFDI. Over 1980-88 the average wage rate in Indian manufacturing remains much below that in Chinese manufacturing (Table 2). Therefore, this finding tends to negate the often held belief that India's dismal performance in attracting FDI as compared to China is because of labour cost factor. Does the quality of labour hold key here? Employing mean years of schooling as an aspect of quality it has been found that China had marginal advantage of one and half years over India in 1980 which was further declined to only one year in 2000 (Table 3). Therefore, the difference between the attractiveness of India and China to EFDI cannot be explained in terms of cost as well as quality angle of labour factor. However, as India had the lowest schooling years after Brazil consistently over 1970-2000 among the selected developing countries it indicate that India's unattractiveness to EFDI vis-à-vis these countries may have a quality dimension to labour availability.

Table 2: The Average Wage Rate in Manufacturing
(In 000 US $) of Selected Countries

Country	1980		1985		1988		1990		1993	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank
Argentina	..	..	570	6	697	5	685	5	1292	3
Brazil	..	..	1681	1	..	..	3024	1	..	..
China	1451	1	1212	2	1242	2	..	..	..	..
Chile	140	7	69	10	76	10	154	8	236	7
Colombia	160	5	127	9	114	8	123	9	179	8
Costa Rica	34	8	24	12	26	11	39	11	54	9
India	780	2	821	5	894	4	1035	4	839	4
Korea	689	3	946	4	1096	3	2940	2	3777	1
Mexico	..	..	414	7	295	6	509	6	745	5
Peru	..	..	55	11	92	9	107	10	..	..
Singapore	143	6	193	8	182	7	399	7	586	6
Taiwan	601	4	1044	3	1266	1	2430	3	3010	2

Source: Estimated based on UNIDO, Industrial Statistics Database, Version 0.36.1

The attractiveness of a host location to EFDI, particularly those originate to serve home market, not only depends upon the availability of cheap labour but also raw materials. For instance, the Japanese corporations in the wake of rising wages and rapid appreciation of yen following the Plaza Accord of 1985 have relocated their production of intermediate goods closer to the sources of raw material

Table 3:   Mean Years of Schooling of Selected Developing Countries

(In No. of Years)

Country	1970		1980		1990		2000	
	Value	Rank	Value	Rank	Value	Rank	Value	Rank
Argentina	6.21	1	7.03	3	8.13	2	8.83	2
Brazil	3.31	10	3.11	13	4.02	13	4.88	13
China	..	..	4.76	10	5.85	9	6.35	9
Chile	5.65	2	6.42	4	6.96	4	7.55	5
Colombia	3.05	11	4.41	11	4.7	11	5.27	11
Costa Rica	3.94	7	5.19	7	5.55	10	6.05	10
India	2.27	12	3.27	12	4.1	12	5.06	12
Korea	4.91	5	7.91	1	9.94	1	10.84	1
Malaysia	3.9	8	5.09	8	6.03	7	6.8	8
Mexico	3.68	9	4.77	9	6.72	5	7.23	6
Peru	4.56	6	6.11	5	6.21	6	7.58	4
Singapore	5.05	4	5.5	6	5.96	8	7.05	7
Taiwan	5.31	3	7.61	2	7.98	3	8.76	3

Source: Barro-Lee Dataset (2001)

supply. The composite index of aluminum and other natural resource reserves in respect of bauxite, copper and iron ore as presented in Table 4 show that India is the third richest country after Brazil and China in these resources. Therefore, India does not seem to have any disadvantage as far as availability of natural resources is concerned and can be attractive to FDI motivated to produce intermediate goods and then export back to their home country.

Availability of quality infrastructure like high-quality transportation facilities, communication networks, information infrastructure, and energy is sine-qua-non for attracting EFDI especially for those motivated to use the host country as a platform for serving third country market. The attractiveness of a country as a host to EFDI thus, is higher, if, it is offering relatively better infrastructure. A composite index of six different aspects of infrastructure such as road length per square kilometer of area, commercial vehicles per 100 inhabitants, telephones per 100 inhabitants, televisions per 100 inhabitants, newspapers per 1000 inhabitants, and energy use per inhabitant has been presented in Table 5 (see Kumar 2002a for details). Among the 11 countries India is the location with lowest level of infrastructure facilities. This clearly indicates that the biggest hurdle in the way of India becoming a global export hub is its inability to provide quality infrastructure, which is available in other competing locations. This finding is also supported by the recently conducted FICCI's FDI Survey 2003, which found that about 73 percent and 71 percent of

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responded foreign investors rated respectively, power facilities and roads as 'bad' in India. The foreign investors also in significant proportion have expressed their dissatisfaction with regard to other infrastructure facilities such as water, transport, airports and ports.

Table 4: Index of Natural Resources of Selected Countries

Country	1994	
	Value	**Rank**
Argentina	-0.271	9.5
Brazil	1.443	1
Chile	-0.271	9.5
China	0.937	2
Colombia	-0.271	9.5
Costa Rica	-0.271	9.5
India	0.652	3
Malaysia	-0.271	9.5
Mexico	0.038	5
Peru	0.193	4
Republic of of Korea	-0.271	9.5
Singapore	-0.271	9.5
Taiwan	-0.271	9.5

Note: The index is the first principal component obtained in a cross country analysis.

Source: Abstracted from Kumar (2002b)

A liberal FDI regime may be an important factor to attract EFDI. For a long time, India had pursued a selective approach to foreign investment and hence was less open to FDI. However, since 1991 with the implementation of economic reforms in the form of dismantling industrial approval system, dis-investment of public sector companies, opening new industries and services to private players, a more liberal and transparent FDI policy has been put into place. The FDI policy has undergone significant transformation with the establishment of automatic approval system, withdrawing FERA restrictions on foreign firms, opening up of new sectors such as mining, banking, insurance, telecommunications, construction and management of ports, harbours, roads and highways, airlines, defence equipment, incentives for investment in export processing zones (EPZs) and 100 percent export oriented units etc. As a part of the reform, the trade policy of India also underwent significant changes as reflected in the reduction of peak tariff rates from 365% to 30% and average rates from 87% in 1990-91 to 20% by 1998-99. All the quantitative restrictions on imports have been phased out by April 2001.

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Table 5: Infrastructure Index for Selected Countries, 1982, 1989, 1994

Country	1982		1989		1994	
	Value	Rank	Value	Rank	Value	Rank
Argentina	-0.42579	2	-0.33159	3	-0.27991	3
Brazil	-0.93333	9	-0.80075	9	-0.83293	9
Chile	-0.70549	6	-0.53031	5	-0.4446	4
Colombia	-0.91575	8	-0.77561	8	-0.75404	8
Costa Rica	-0.72101	7	-0.53999	6	-0.50549	6
India	-1.13305	11	-1.06385	11	-1.05419	11
Malaysia	-0.67238	4	-0.56997	7	-0.51738	7
Mexico	-0.68061	5	-0.51994	4	-0.46811	5
Peru	-0.95868	10	-0.90552	10	-0.90627	10
Republic of Korea	-0.46743	3	0.05472	2	0.45245	2
Singapore	0.78281	1	1.16123	1	1.34743	1

Note: The index is the first principal component obtained in a cross-country analysis.

Source: Abstracted from Kumar (2002a)

The implementation of these policy measures might have improved the openness of Indian economy so as to enhance the attractiveness of India as a host to EFDI. Table 6 presents the figure of openness i.e. the trade intensity adjusted for country area size, population, per capita income, transportation cost, and special resource endowments for a selected number of developing countries. It can be seen that India is ranked fifth in terms of openness during 1982-1994. Singapore, Malaysia, China consistently remain as more open economies than India. This would indicate that a lot more is still needed on the policy front. FICCI's Survey on FDI indicate that although majority of foreign investors were satisfied at the handling of approvals and applications at central level, about 42 percent of them rated 'ground level hassles' as high and another 49 percent as 'medium'. About 40 percent of investors expressed handling of approvals and applications at the state level as 'bad'.

Although the existing literature on EFDI has not yet paid attention to the role of bilateral investment treaties (BITs) in the locational decision of EFDI, one would expect that these treaties can be important factor in the attractiveness of a country as a host to EFDI. BITs by providing higher standard of international protection and guarantees for foreign investment can act as incentives for attracting FDI. Therefore, it is not surprising to observe that the largest FDI receiving countries such as China, Malaysia, Republic of Korea, Argentina and

Chile were countries with largest number of BITs. China as compared to India is intensely pursuing BIT as a strategy for attracting EFDI since 1982 and has to its credit a whopping 107 BITs by the end of 2002 (Table 7). India has entered lately into BITs in 1994 with U.K. and Russian Federation and could conclude only 46 BITs until 2002. As BIT is a double edged sword intended to protect both foreign investment into India and Indian investment into that country, the rising wave of outward FDI from India present another necessity that India should pursue rigorously the path of BITs.

Table 6: Degree of Openness of Selected Countries

Country	1982		1989		1994	
	Value	Rank	Value	Rank	Value	Rank
Argentina	-0.047	8	-0.080	11	-0.137	11
Brazil	0.140	4	0.135	6	0.162	5.5
Chile	-0.145	12	0.165	4	0.085	7
China	0.265	3	0.385	3	0.415	3
Colombia	-0.077	9	-0.044	9	-0.036	8
Costa Rica	-0.097	10	-0.082	12	-0.118	10
India	0.125	5	0.141	5	0.162	5.5
Malaysia	0.394	2	0.773	2	1.017	2
Mexico	-0.136	11	-0.030	8	-0.065	9
Peru	0.086	6	0.072	7	0.194	4
Republic of Korea	-0.040	7	-0.048	10	-0.202	12
Singapore	1.743	1	1.855	1	1.583	1

Source: Abstracted from Kumar (2002b)

Table 7: Number of Bilateral Investment Treaties of Selected Countries

Country	1994		1998		2002	
	No.	Rank	No.	Rank	No.	Rank
Argentina	34	4	50	4	54	4
Brazil	4	8.5	13	9	14	10.5
Chile	18	5.5	43	5	47	5
China	66	1	92	1	107	1
Colombia	3	10	4	12	5	12
Costa Rica	4	8.5	9	10	14	10.5
India	2	11	27	6	46	6
Malaysia	36	2	61	2	67	2
Mexico	0	12	8	11	15	9
Peru	18	5.5	25	7	27	7
Republic of Korea	35	3	57	3	62	3
Singapore	12	7	20	8	24	8

Source: UNCTAD on-line FDI statistics

Another factor that could explain the success of China in attracting EFDI is its experiment with special economic zones (SEZs). SEZs situated in the Chinese coastal provinces with the advantages of comprehensive liberalization, well developed infrastructure, abundant supply of low-cost disciplined labour and flexible labour market parameters were able to attract FDI than other competing locations like India with rigid labour market conditions. The success of Chinese SEZs has inspired India to make efforts to emulate the same. In 2000 India initiated a scheme to set up SEZs at Nanguneri (Tamil Nadu), Positra (Gujarat), Kulpi (West Bengal), Paradeep (Orissa), Bhadohi and Kanpur (Uttar Pradesh), Kakinada (Andhra Pradesh), Dronagiri (Maharashtra) and Indore (Madhya Pradesh). The EPZs at Kandla (Gujarat), Santa Cruz (Mumbai), Kochi (Kerala) and Surat (Gujarat) have been converted into SEZs. Although the investing units into SEZs are deemed as outside the country's custom territory and have been given full flexibilities of operations, unless India address the inadequacies in infrastructure and the problem of labour indiscipline and militant trade unionism repeating Chinese success may be difficult.

In short, in many respects India is well placed to be able to attract EFDI but inadequate infrastructure, low level of skills, inflexible labour market inhibits its way to become a global export hub. Policies to address these issues are thus needed to boost India's attractiveness to EFDI. Pursuing the strategy of BITs may also be useful in this case. The fact that large size of domestic market tends to change the focus of foreign firms from exporting to serving local market (Kumar 2002b) may not be a restrictive factor for India to attract EFDI as China had already successfully demonstrated.

In recent years the outlook of India as an investment destination has been growing. This is indicated by the surveys of different consultancy groups on the outlook of different countries as a host to FDI, which are consistently upgrading the rank of India. In Japan Bank for International Cooperation (JBIC) surveys on investment climates India has moved up with its rank increasing from 7th in 1996 to 5th in 2001. India is ahead of countries like Vietnam, Taiwan, Republic of Korea, Malaysia and Singapore as promising destinations for FDI over the medium term but lagging behind countries such as China, US, Thailand, and Indonesia. In terms of Kearney's FDI confidence index India is moving in the narrow range of 5th-7th position between 1998 and 2003 except for September

2002 when India had an all-time low rank of 15[1].

The positive outlook of India as projected in these surveys is being matched by reports from several foreign firms openly expressing their desires to use India as a manufacturing hub for global operations[2]. In 2001 Faber Heatcraft Industries Ltd., had decided to increase the production capacity of its manufacturing facility in Pune by 4-5 times at a cost of Rs. 5 crore so that it could use India as the manufacturing hub for the SAARC and other Asian markets near India[3]. In the year 2003, two foreign firms had already expressed their intention of using India as a manufacturing facility for exporting. Philips plans to use India as a manufacturing base to source a range of products for international markets with an intended investment of $150 million within the next 5 years[4]. The company also decided to double its employees to 2000 in next three years in its Bangalore software development center[5]. Same Deutz-Fahr, the third largest tractor firm in the world also expressed its intention of using India as an export hub for international markets including North America[6]. The company has already exported its tractors in small numbers to Israel, Colombia, Zambia, Sri Lanka and Chile leveraging its manufacturing facility located in Ranipet, Near Chennai with a plant capacity to manufacture 7000 tractors and 10000 engines. Hyundai, the carmakers which is already using India as a export hub is planning an additional investment of about $200 million to increase the production capacity to four lakh units annually[7]. The company had exported a total of 9000 units in 2002-03 and has set an export target of 30000 vehicles for 2003-04. This is contrary to the situation in 1998 when Hyundai Motors build a $614 million auto assembly plant

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[1]   Business Line (18.9.2003) 'India moves up in Kearney's FDI Confidence Index'

[2]   Economic Times (8.9.2003) 'India, global export hub: We Can Beat Global Giants Anywhere'; Indian Express (4.10.2003) 'India to become export launching pad'

[3]   Economic Times (29.11.2001) 'India to be Faber's production hub for Saarc'

[4]   Times of India (4.9.2003) 'Philips to make India export hub'

[5]   Economic Times (4.9.2003) 'Philips to hire 1,000 for B'lore operations'

[6]   Business Line (17.9.2003) 'Same Deutz-Fahr tractors to make India an export hub'

[7]   Business Line (18.9.2003) 'Hyundai's exports eat into domestic sales: Three-week backlog in local market'

in Chennai in the face of deep skepticism expressed by many industry analysts about India's potential as an export platform. Many other foreign companies such as Ford Motors, Suzuki, Bosch, Timken, MICO, SKF Bearings, Daimler-Chrysler and FAG Bearings have already started using India as an export platform.

3.   An Analysis of Export Orientation of Foreign Affiliates in Indian Manufacturing during 1990s

As discussed previously, the 1990s is a significant period in the developmental history of India which saw remarkable changes in the trade, industrial and foreign investment policy pursued by the country. An export promotion strategy (EP) replaced previous strategy of import substitution (IS). Has this change in policy altered the export orientation of foreign capital in the country? Table 8 presents export intensity of foreign affiliates by seven different categories of ownership participation over 1989-90 to 2000-01. Apparently, the export intensity of foreign firms varies widely over different ownership categories. The foreign firms having 65-75 and 40-55 percent of ownership tend to export more as a percentage of sales than any other group. However, the rising and fluctuating standard deviation in the case of foreign firms with ownership of 65-75 percent indicates that their export intensity performance is not stable over the years.

Dividing the whole period into two sub-periods of 1989-90 to 1994-95 and 1995-96 to 2000-01 it was obtained that the export intensity of foreign affiliates barring the 85-100 percent category have shown higher export intensity (Figure-1). The highest export intensity improvement is reported for foreign firms with minority equity participation with 10-25 percent from an intensity of 6 percent in the first sub-period to 11 percent in the second sub-period. The second highest Improvement is reported in the case of foreign firms with an equity participation range of 25-40. Its export intensity has increased from 5 percent in the first sub-period to 7 percent in the second sub-period. A marginal one percentage point increase in the export intensity between these two sub-periods is observed for foreign affiliates with 40-55 and 65-75 percent equity groups. For analytical reason one can treat the second sub-period as the impact period of economic reforms implemented since 1991 because the effect of reform at macro-level involves lags in boiling down to the firm-level decision making process. Therefore, in this sense, the substantial improvement in export orientation of foreign affiliates in Indian manufacturing in the impact period of reform is observed for firms with lower participation of foreign equity. This would suggest that foreign firms with larger equity participation in Indian manufacturing are relatively local market oriented FDI (LMFDI) whereas lower equity participation are relatively export market oriented FDI (EFDI).

Table 8: Export Intensity of Foreign Affiliates in Indian Manufacturing, 1989-90 to 2000-01

Year	FDI participation (%)						
	10-25	25-40	40-55	55-65	65-75	75-85	85-100
1989-90	4.2 (5.9) 84	3.92 (7.90) 50	8.1 (8.1) 72	4.2 (8.8) 13	10.3 (12.8) 17	6.1 (10.9) 9	5.9 (6.9) 13
1990-91	4.0 (6.3) 102	5.57 (8.92) 57	8.4 (8.0) 84	4.3 (9.2) 14	11.2 (12.8) 19	4.3 (9.6) 12	6.2 (6.4) 14
1991-92	5.3 (9.9) 108	5.63 (9.44) 57	9.7 (8.2) 86	6.7 (10.4) 14	13.0 (14.8) 19	5.3 (9.3) 12	6.5 (7.7) 15
1992-93	6.9 (12.3) 148	5.28 (8.96) 62	10.3 (9.5) 93	3.7 (4.8) 15	16.2 (15.7) 21	4.6 (7.8) 16	7.4 (8.6) 15
1993-94	7.5 (14.0) 196	4.97 (9.65) 63	11.8 (9.5) 94	5.7 (7.9) 13	14.2 (14.0) 22	2.6 (5.7) 20	10.3 (10.8) 15
1994-95	8.8 (15.1) 248	4.72 (8.49) 71	12.0 (8.4) 97	5.5 (9.3) 15	12.8 (16.0) 24	4.4 (11.4) 21	7.3 (9.5) 15
1995-96	9.9 (17.4) 268	5.55 (10.92) 76	10.2 (8.2) 100	3.6 (6.0) 15	11.9 (12.9) 25	4.0 (12.3) 19	7.1 (8.9) 14
1996-97	9.7 (16.9) 271	7.35 (11.99) 72	10.4 (9.0) 101	4.4 (9.2) 17	11.9 (14.6) 25	7.9 (15.3) 21	6.6 (9.3) 16
1997-98	10.7 (17.2) 265	7.55 (11.68) 74	12.1 (10.0) 102	5.4 (10.9) 17	13.4 (15.8) 26	6.0 (13.5) 22	8.7 (12.0) 18
1998-99	10.9 (17.0) 249	6.57 (11.09) 75	10.3 (8.9) 100	4.4 (9.2) 16	13.3 (17.8) 26	6.3 (12.9) 21	7.5 (10.1) 19
199-00	10.5 (14.3) 236	6.53 (11.57) 74	11.5 (9.2) 100	6.7 (13.0) 17	16.9 (20.5) 26	3.4 (3.5) 20	5.5 (6.3) 20
2000-01	13.7 (13.5) 193	8.23 (12.31) 75	10.9 (9.6) 98	6.9 (12.2) 18	20.4 (26.7) 22	4.7 (4.5) 17	7.2 (7.1) 18

Source: Authors estimation based on C.M.I.E. Prowess Database (2003)

Figure 1: Period-wise Export Intensity of Foreign Affiliates
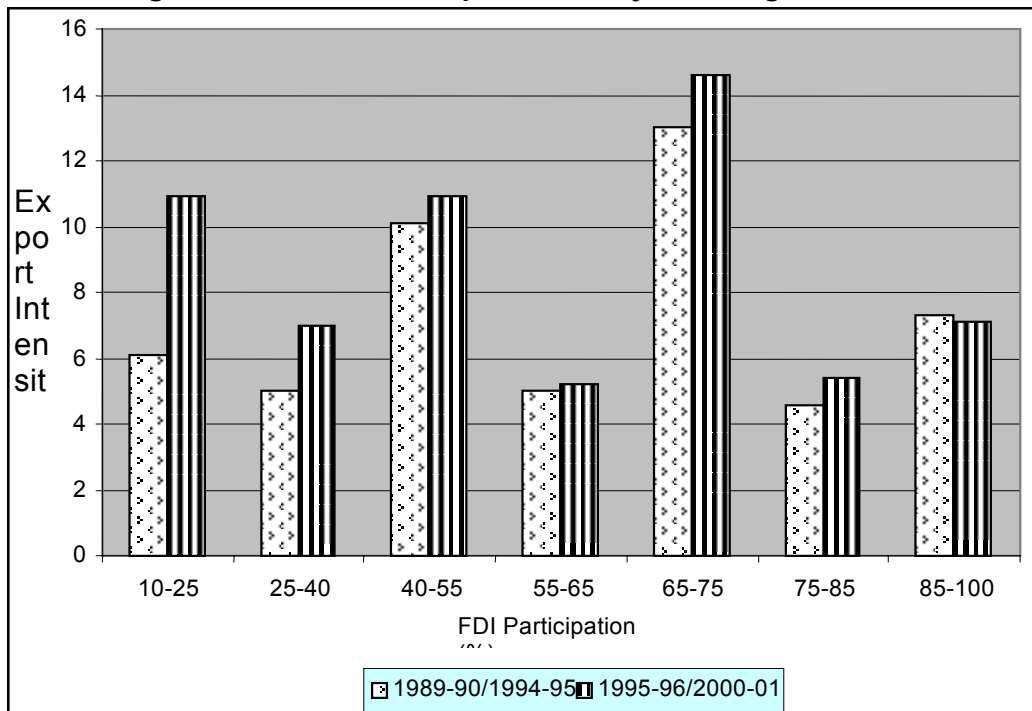
3.1   An Econometric Analysis

To further unearth the dynamics of export performance over different equity participation the study has formulated a simple Tobit model for enterprise-level export behavior. Tobit specification of export behavior is essential as the sample is truncated in nature and not all firms are exporting. Drawing from the theoretical and empirical literature for India and other countries, export intensity of foreign firms are postulated to be a function of a host of firm-specific factors such as age, size, R&D intensity (%), foreign technology import intensity (%), selling cost intensity (%), productivity (%) and raw materials import intensity (%)[8]. Two policy

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[8] The justification for including these firm-specific factors is amply available in the earlier works on firm-level determinants of export performance. To keep the paper as simple as possible we skipped the review of previous findings on each variable to formulate hypothesis on them or their expected relationships as done conventionally in the literature. However, readers are suggested to look into the relevant literature on the topic. Some of earlier studies on India include Kumar (1990), Kumar and Siddharthan (1994), Aggarwal (2002), Kumar and Pradhan (2003), among others. For a brief survey of literature related to other countries see Kuamr and Pradhan (2003).

related factors are also included such as a dummy variable for controlling the shift of policy regime and fiscal benefit received by firms for their export performance as a measure of policy inducement to exporting. A set of sector-specific dummies are included to account the fact that export behaviour of foreign firms are likely to vary over industries.

The estimated Tobit model takes the following form:

$EXPOINT_{it}$=F (AGE_{it}, $SIZE_{it}$, $RDINT_{it}$, $TECHIM_{it}$, $SELLING_{it}$, $IMRINT_{it}$,
$\quad\quad$ $LPROD_{it}$, $LIBDUM$, $FISCALINT_{it}$, $\Sigma_j SECDUM_j$) $\quad\quad$ if R.H.S.>0
$\quad\quad$ =0 $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ if R.H.S≤.0 $\quad\quad$ (A)

Where:
$\quad\quad$ $EXPOINT_{it}$: Exports of ith firm as a percentage of sales in the year t.
$\quad\quad$ AGE_{it}: The age of ith firm in number of years.
$\quad\quad$ $SIZE_{it}$: Total sales of ith firm in tth year.
$\quad\quad$ $RDINT_{it}$: Total R&D expenditure as a percentage of total sales of ith firm in tth year.
$\quad\quad$ $TECHIM_{it}$: Royalties, technical and other professional fees remitted abroad by ith firm as a percentage of sales in the year t.
$\quad\quad$ $SELLING_{it}$: Advertising and sales promotion expenses incurred by ith firm as a percentage of sales in tth year.
$\quad\quad$ $IMRINT_{it}$:: Raw material imports by the ith firm as a percentage of sales in tth year
$\quad\quad$ $LPROD_{it}$: is the labor productivity defined as net value-added generated per unit of wage cost (%).
$\quad\quad$ $LIBDUM$: Liberalization dummy taking 1 for impact period 19995-96 to 2000-01 and 0 for the implementation of reform period1989-90 to 1994-95.
$\quad\quad$ $FISCALINT_{it}$: The fiscal benefits received by ith firm as a percentage of sales on account of various government schemes targeted at certain industries and/or to promote specific objectives like export promotion.
$\quad\quad$ $\Sigma_j SECDUM_j$ is the set of sector-specific dummies.

Model A has been estimated by the pooled Tobit regression for a sample of foreign affiliates operating in Indian manufacturing. The number of foreign affiliates varies over years as well as across different ranges of equity participation as provided in Table 8. The dataset has been obtained from the PROWESS database of the Center for Monitoring Indian Economy (C.M.I.E.). The estimates obtained from maximum likelihood (ML) estimation with robust standard errors have been presented in Table 9. These standard errors are in Huber-White estimates corrected for the problem of non-normality and heteroscedasticity in the residual variance.

The variable 'firm age' has played an interesting role in the export performance of foreign firms. The estimated relationship between firm age and export behaviour over the whole range of equity participation resembles an inverted S-shape. As age increases, it tends to induce foreign affiliates to export more over the equity range 10-25 percent then reduce their export intensity over equity range 55-75 percent and again turn to increase it over the equity range 85-100 percent. This would indicate that foreign affiliates when they grow older they tend to have significant higher export performance only when they have minority foreign equity participation (10-25 percent) or largely majority owned (85-100percent).

The effect of SIZE is found to be not different from zero in the case of majority of equity ranges and only in the case of equity range 25-40 percent that it could achieve statistical significance with a negative sign. This suggests that firm size which was found to be an important determinant of firm-level export activity in previous literature (Kumar and Siddharthan 1994; Aggarwal 2002; Kumar and Pradhan 2003) is not so important in the case of foreign affiliates.

RDINT comes up with a positively significant coefficient in the case of equity ranges, 10-25, 40-55 and 55-65 percent. For the equity ranges, 65-75 and 75-85 percent it has a significantly negative sign. For the rest categories of equity participation its effect is observed to be not different from zero. Thus, the innovative activity plays a positive role in the export performance of foreign affiliates roughly up to a level of equal equity participation between local and foreign parties. Once equity participation turns heavily towards foreign parties the impact of innovative activities is more towards serving the local markets. This may also indicate that the R&D activity of majority owned foreign affiliates are basically in the nature of adaptation of production process to meet the local market condition rather than basic research or applied research which they usually conduct at home countries.

TECHIM turns out to be significant in the case of four categories of equity participation. Of which, the three ranges of equity participation up to 55 percent has a negative sign and the category of 75-85 percent has a positive sign. This supports Kumar and Pradhan (2003) argument that firms importing foreign technology get excluded from exporting market because of several export restrictions accompanied by technology contracts. Various R.B.I. surveys on foreign collaboration in Indian manufacturing also indicate a large-scale

Table 9: Pooled Tobit Estimation of Export Intensity of Foreign Affiliates in Indian Manufacturing

Independent Variable	Dependent Variable: Export Intensity (%)						
	Ownership Participation (%)						
	10-25	25-40	40-55	55-65	65-75	75-85	85-100
AGE	0.30895138*** (8.56)	-0.03477445 (0.93)	0.00160863 (0.08)	-0.08906364** (2.36)	-0.16514315*** (3.14)	0.05488931 (0.39)	0.08688448* (1.86)
SIZE	-0.00012231 (0.45)	-0.00512767*** (2.94)	-0.00005922 (0.27)	-0.00304328 (0.42)	0.00961288 (1.37)	-0.00228226 (0.23)	0.00210218 (1.51)
RDINT	0.82487894*** (2.72)	1.61841808 (0.75)	0.95720757* (1.88)	5.64422847*** (3.27)	-2.66655738** (2.37)	-3.00137353** (2.13)	0.10147774 (0.46)
TECHIM	-0.91992403* (1.90)	-2.77095451*** (3.65)	-0.78327704*** (2.65)	-0.27263290 (0.80)	0.08843836 (0.27)	2.89218106** (2.17)	0.30276431 (0.46)
SELLING	0.24667634** (2.19)	0.24567028 (1.15)	0.11166406* (1.70)	-0.23206539 (1.16)	1.12171128*** (4.99)	-0.27203050 (0.76)	0.40392013** (2.57)
IMRINT	17.09159323*** (3.68)	17.68978886 (1.54)	16.99066906*** (2.73)	5.82078777 (0.45)	10.15307837 (0.82)	17.85703521 (1.17)	22.82065470*** (2.96)
LPROD	0.01157243*** (7.61)	0.00662796** (1.97)	0.01067858*** (3.96)	0.00782669 (0.94)	0.02660849*** (3.58)	-0.01470495* (1.80)	-0.00294014 (1.22)
LIBDUM	3.53318310** (2.50)	5.23053145*** (3.76)	3.87513392*** (4.00)	2.30395234* (1.71)	2.49204525 (1.11)	1.35976829 (0.69)	-0.47180907 (0.36)
FISCALINT	**2.27131587*** (5.21)**	**4.54175260*** (8.22)**	**1.21163754*** (3.58)**	**8.33340592*** (3.79)**	**6.52973999*** (4.51)**	**2.11071223*** (4.85)**	**-0.00441949 (0.01)**
Constant	-14.37396578*** (4.18)	0.12528853 (0.07)	1.59000078 (0.98)	3.25886149 (0.86)	0.03016037 (0.01)	4.84183760 (0.94)	-2.67565735 (1.19)
Log Likelihood	-7298.3688	-2918.248	-4185.2127	-567.59868	-1021.4926	-669.54315	-566.68686
Wald Chi2	1750.08	124.25	67.64	35.33	95.12	65.76	28.48
Prob > chi2	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0008
Observations	2219	786	1105	173	**264**	**201**	**191**
Obs with exporting	1407	651	985	149	235	162	157
Obs. with non-exporting	**812**	**135**	**120**	**24**	**29**	**39**	**34**

Note: Robust z-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%; The sectoral dummies for 24 industries such as sugar, beer & liquors, cement, chemicals, edible oils, electrical machinery, electronics, fertilizers, food products, footwear, gems & jewellery, glass, iron & steel, leather products, metal products, misc. manufacturing, non-electrical machinery, non-ferrous metals, non-metallic mineral products, paints & varnishes, paper & products, personal care, pharmaceuticals, plastic & products, rubber & products, tea & coffee, textiles, tobacco products, transport equipments, tyres, wearing apparel, and wood products, have been included only in the case of affiliates with 10-25 percent but could not be included for other groups because of very few number of observations available. The estimated coefficients for sectoral dummies have not been reported for want of space. These results for foreign affiliates with 10-25 percent can be obtained from the authors upon request.

incidence of direct or indirect export prohibition clauses in the technology collaborations limiting the sale of the product to the domestic market. Importantly, this finding also suggests that if a firm is having majority foreign equity participation then foreign technology imports can be instrumental in breaking barriers to global markets.

SELLING exerts a significant impact on export behaviour of foreign affiliates in the case of four ranges of ownership participation such as 10-25, 40-55, 65-75 and 85-100 percent and invariably all the impacts are positive. It would appear that selling and brand building activities lends a critical edge to foreign affiliates in export activity irrespective of their equity participation.

IMRINT comes out with a positive sign for all the categories of ownership participation and could achieve statistical significance in the case of three ranges namely 10-25, 25-40 and 85-100 percent. Thus, the import of raw materials is crucial for the export performance of foreign affiliates.

LPROD is statistically significant in five ranges of equity participation and for four ranges it is positive. Therefore, foreign affiliates when utilize their resources relatively efficiently have comparative advantages in exporting. It may be possible that parent firms may be choosing and assigning export mandate to those subsidiaries that are able to improve their productivity through mechanization of production process as well as increasing skill intensity. For a longer stretch of equity participation from 10-75 percent, variation in the equity range seems to have little effect on the positive impact of this variable.

LIBDUM comes out with a very strong positive impact in the case of equity range, 10-25, 25-40, 40-55 and 55-65. It would appear that the export intensity of foreign affiliates in these categories is significantly higher in the impact period 1995-96 to 2000-01 as compared to the base period 1989-90 to 1994-95. Therefore, following the implementation of economic reforms since 1991 the foreign affiliates have significantly improved their export performance only in the case of firms with modest levels of equity participation. Foreign affiliates with higher levels of equity participation of more than 65 percent have shown no changes in their export behaviour.

FISCALINT which captures the government policy of export promotion comes up with a positive sign and is statistically significant for six categories of ownership

participation. This shows that different export promotion schemes which provide fiscal benefits such as duty-drawbacks, Cash Compensatory Support (CCS) and International Price Reimbursement Scheme (IPRS) etc., tend to induce foreign affiliates to export more across ownership participations. Many of these incentives are being withdrawn in the wake of reforms but new scheme such as replenishment of import licence, tax exemption of export income, subsidised export credit, export credit insurance etc., are being added to the list.

4.   Conclusions and Implications

Attracting EFDI has already become a developmental goal among nations specifically because they are highly development oriented to the host country as compared to FDI motivated to serve the local market in the host locations. India is also in the race since the implementation of economic reforms in 1991. In fact, the FDI policy regime in India has changed beyond recognition as compared to the past in this effort. However, as compared to countries such as China, Malaysia, Argentina, or Costa Rica, India was traditionally less attractive to EFDI as signified by a marginal share of foreign firms in the total exports from the economy.

An analysis of various location-specific factors shows that India is well placed to attract EFDI vis-à-vis other competing locations in many respect but low level of general skills, infrastructure bottlenecks, and failures to use BITs as a tool for attracting EFDI are lowering the attractiveness of India as compared to others. Policy reforms are still required at the state level to make FDI policy more efficient and at central level to lessen ground level hassles faced by foreign investors. UNCTAD (2002) provides several case studies of what is called as 'targeted promotion' of a host country to attract EFDI. The experience of several countries such as Singapore, Ireland, the Netherlands, Costa Rica etc., demonstrate that effective targeting can be useful in attracting EFDI. Thus, India can also pursue measures like marketing itself as an investment destination by providing information to potential investors on opportunities that it offers, devoting resources for investor targeting, investment facilitation, aftercare services and policy advocacy. When other competing nations are actively engaged in these activities to enhance their locational competitiveness India should also adopt these strategies more aggressively. Mere opening up of the economy to FDI may not be enough and as suggested by UNCTAD setting up of an investment

promotion agency (IPA) by India to actively market its locational competitiveness is hence called for.

An analysis of export orientation of foreign affiliates at the firm-level throws several interesting implications. Foreign affiliates with modest levels of foreign equity participation in Indian manufacturing have shown higher export performance following the implementation of economic reforms. This would suggest that foreign firms are slowly realizing the potential of India as a manufacturing hub for global market. However, the fact that relatively majority owned foreign affiliates have not yet shown any significant improvement in their export orientation press the need for more actions on the policy front.

Another important finding from the firm-level analysis is that government scheme of export promotion offering fiscal benefits have played an instrumental role in the export performance of foreign affiliates across different ownership participation groups. It would follow from this, government should continue with these export promotion schemes with greater focus and efficiency in inducing foreign affiliates to diversify into global market.

The export behaviour of foreign affiliates is also found to be positively dependant upon their intensity to import raw materials. Hence, a liberal policy with respect to the imports of raw materials may be useful for encouraging foreign affiliates to export. The selling and advertising activities by affiliates also have contributed to their export behaviour. In view of this, government policies to increase non-price mode of rivalry among firms in the domestic market may yield rich dividends in promoting foreign firms to look for export market.

Labour productivity is another important factor in promoting exports by foreign affiliates across majority of ownership participation ranges. The relationship between age and export behaviour is found to resemble an inverted S shape curve over the different range of equity participation. The R&D intensity is observed to be favourable for export performance of foreign affiliates again up to a modest level of foreign equity participation. Size factor is observed not to be a dominant factor in the export performance of foreign affiliates. Foreign technology imports tend to reduce exports performance by foreign affiliates with modest levels of foreign equity participation but tend to be helpful in the case of relatively majority owned affiliates.

References

Aggarwal, A (2002) 'Liberalization, Multinational Enterprises and Export Performance: Evidence from Indian Manufacturing', The Journal of Development Studies, 38 (3), pp. 119 - 137

FICCI (2003) *FICCI's FDI Survey 2003- The Experience of Foreign Direct Investors in India*, New Delhi.

Kumar, N (1990) *Multinational Enterprises in India: Industrial Distribution, Characteristics, and Performance*, London and New York: Routledge

Kumar, N. (1994) 'Determinants of Export Orientation of Foreign Production by U.S. Multinationals: An Inter-Country Analysis' *Journal of International Business Studies*, First Quarter, pp. 141-156.

Kumar, N. (2002a) 'Infrastructure Availability, Foreign Direct Investment Inflows and Their Export-orientation: A Cross-Country Exploration', *RIS Discussion Paper* RIS-DP # 26/2002.

Kumar, N. (2002b) *Globalization and Quality of Foreign Direct Investment*, New Delhi: Oxford University Press.

Kumar, N. and Jaya Prakash Pradhan (2003) 'Export Competitiveness in the Knowledge-Based Industries: A Firm-Level Analysis of Indian Manufacturing', *RIS Discussion Paper*, No. RIS-DP#43/2003, New Delhi.

Kumar, N. and N.S. Siddharthan (1994) 'Technology, Firm Size and Export Behaviour in Developing Countries: The Case of Indian Enterprises' *The Journal of Development Studies*, 31(2), 289-309

UNCTAD (2002) *World Investment Report 2002*, New York and Geneva.

Woodward, D. P. and R. J. Rolfe (1993) 'The Location of Export-Oriented Foreign Direct Investment in the Caribbean Basin', *Journal of International Business Studies*, First Quarter, pp. 121-144.