REGIONAL DIFFERENCES IN FDI INFLOWS: CHINA – INDIA COMPARISON

N. S. Siddharthan¹
Institute of Economic Growth
Delhi University North Campus, Delhi – 110007, India
Email: nss@iegindia.org

I Introduction

There are very few analytical studies on the inter-state or inter-province differences in FDI inflows. However, several studies analyse inter-country differences in foreign direct investment (FDI) emphasizing location advantages (Wei 2000; Habib and Zurawicki 2002; Globerman 2002; and Globerman and Shapiro 2003). These studies have identified various location advantages such as size of the market, income and its growth rate; membership of a regional union; labour and skill content of the population; infrastructure facilities like transport, tele-density, electricity, and port facilities; and variables representing good governance such as, legal dispute settlement, the rule of law, spending on social sector to enhance the skills of the population, improving the health of the people by spending on sanitation, preventive medicine and potable water and, in general, all expenditures directed towards increasing the well-being of the citizens. More recent studies have focused on such factors as technological status, brand name, openness of the economy, macro trade policies of the government and intellectual property protection. Some of these variables are country specific rather than pertaining to a specific region or a State within a country.

However, some of the studies on the emergence and development of industrial clusters and the role of FDI have identified a number of variables that are specific to a state or a region within a country (He Canfei 2002; Belderbos and Carree 2002; Tuan

-

¹ My thanks to G. Lakshmana Rao for research assistance and to Sriram Natarajan for introducing me to the Chinese data sources.

and Linda 2003; Eaton, Lipsey and Safarian 1994; Wei 1999; Jianping 1999). These studies emphasise the roles of infrastructure, international orientation (proxied by volume of total trade – exports and imports), high regional income, in particular, industrial income, and the presence of multinational enterprises (MNEs) in attracting FDI. Certain other studies (Zucker et. al. 1998, Cooke 2001; Breschi and Malerba 2001; Audretsch and Lehmann 2005; Ronde and Hussler 2005) emphasise the role of education institutions - schools and universities, research and development laboratories, and qualified labour force. Nevertheless, the objectives of these studies are not to explain inter provincial differences in FDI inflows. Unlike the case of inter-country differences in FDI inflows, the econometric studies on inter-provincial differences in FDI inflows have been scarce. This paper attempts to fill this important gap in literature. In trying to fill this gap, this paper uses the empirical results of inter-country studies and studies devoted to explain agglomeration benefits to develop testable hypothesis.

An analysis of regional differences in the flow of FDI in China and India is important as in both these countries a few regions account for the bulk of FDI inflows. This high regional concentration could pose long-term problems for both countries. Hence, it is vital to analyse the main determinants of regional differences in FDI.

As seen from Table 1, during 2003, out of the 32 provinces, the following eight provinces accounted for about 80 per cent of FDI flows: Jiangsu (20%), Guangdong (15%), Shangdong (11%), Shangha (10%), Zhejiang (9%), Liaoning (5%), Fujian (5%), and Beijing (4%). Except for Guangdong that has shown a decline in share in recent years, all other regions exhibit the same trend in FDI share. This indicates that the regional differences are likely to persist and a convergence might not take place. Furthermore,

these provinces also happen to be the ones enjoying higher socio-economic indicators like per capita income, industrialisation, and infrastructure.

Table 1
China: Share of Regions in FDI

	China: Share of Regions in FDI					
Province	FDI	FDI%	Province	e FDI	FDI%	
	2003	2003		2003	2003	
Beijing	219,126	4.10%	Henan	53,903	1.01%	
Tianjin	153,473	2.87%	Hubei	156,886	2.93%	
Hebei	96,405	1.80%	Hunan	101,835	1.90%	
Shanxi	21,361	0.40%	Guangdong	782,294	14.62%	
Inner Mongolia	8,854	0.17%	Guangxi	41,856	0.78%	
			Hainan	42,125	0.79%	
Liaoning	282,410	5.28%				
Jilin	19,059	0.36%	Chongqing	26,083	0.49%	
Heilongjiang	32,180	0.60%	Sichuan	41,231	0.77%	
			Guizhou	4,521	0.08%	
Shanghai	546,849	10.22%	Yunnan	8,384	0.16%	
Jiangsu	1,056,365	19.74%	Tibet	0	0%	
Zhejiang	498,055	9.31%				
Anhui	36,720	0.69%	Shaanxi	33,190	0.62%	
Fujian	259,903	4.86%	Gansu	2,342	0.04%	
Jiangxi	161,202	3.01%	Qinghai	2,522	0.05%	
Shangdong	601,617	11.24%	Ningxia	1,743	0.03%	
			Xinjiang	1,534	0.03%	
			Regional Total	5,294,028	98.95%	

FDI in US\$10,000

The Indian scene with regard to regional differences in FDI is not very different. As shown in Table 2, about six States in India account for more than 55 per cent of FDI receipts. These six states also account for more than 57 per cent of the total industrial output in India. In particular some of the states like Uttar Pradesh, Bihar and Rajasthan that account for a large share of Indian population and are also politically important in terms of the number of seats in the Indian Parliament receive very little FDI (Siddharthan and Rajan 2002). The two maps (Map 1 on regional distribution of FDI in India and Map 2 on the regional distribution of industrial output) bring out the industrial concentration in India. In Map 2, Uttar Pradesh has a share of more than 5 per cent in industrial output.

However, this is a misleading, as most of the output comes from the National Capital Region (NCR), namely, areas in and around Delhi, that include some districts of Uttar Pradesh that border Delhi. In the FDI map (Map 1) these areas are shown as belonging to the National Capital Region.

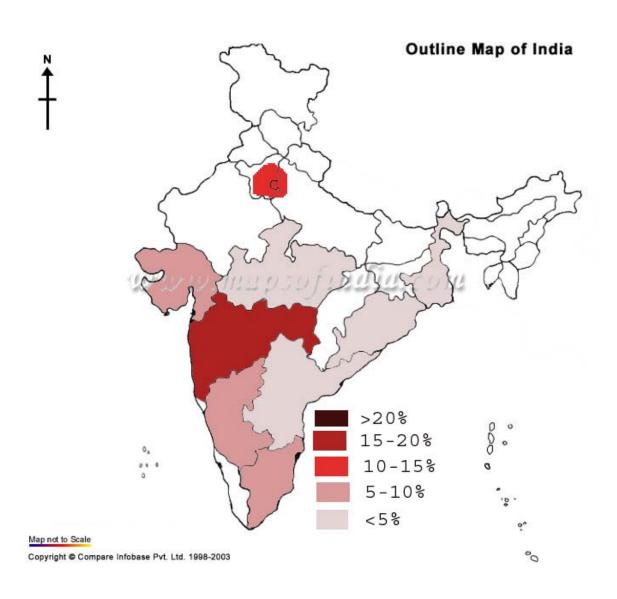
Table 2
India: Share of States and Union Territories in FDI and Industrial Output 2004

			%Gross Value
	FDI		Added by
	Approvals	FDI %	Industry
State/UT	(in Rs. 10 mil)		
Andhra Pradesh	11658.71	4.61	7.03
Assam	2.41	0.001	0.67
Bihar	739.71	0.29	0.42
Gujarat	12748.98	5.04	13.42
Haryana	3928.34	1.55	4.48
Himachal pradesh	1226.64	0.48	0.87
J& K	8.41	0.003	0.12
Karnataka	19202.55	7.60	6.71
Kerala	1812.45	0.72	2.20
Madhya Pradesh	9271.41	3.67	4.02
Maharashtra	37250.67	14.75	19.71
Orissa	8235.45	3.26	1.52
Punjab	2213.65	0.88	3.50
Rajasthan	2911.21	1.15	3.35
Tamil Nadu	22872.18	9.06	9.94
Uttar Pradesh	4846.22	1.91	6.93
West Bengal	8016.87	3.17	4.39
Delhi	30843.14	12.21	1.33
Goa	999.38	0.40	1.03
Pondicherry	1286.21	0.51	0.95

In sum, the extreme inequalities in regional distribution of industrial production in general and FDI in particular are important problems for both China and India. For analysing these problems, literature dealing with factors that are responsible for the

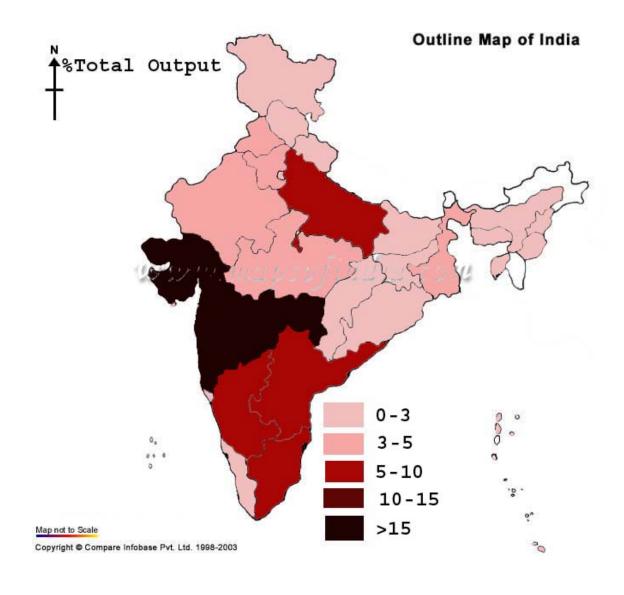
location of FDI across countries is examined in Section II. Section III deals with the Chinese case and Section IV with the Indian case. Section V brings out the main findings of the study.

Map 1
Regional Distribution of FDI in India



Map 2

Regional Distribution of Industrial Output in India



II Lessons from Inter-Country Studies

Empirical studies analysing the determinants of inter country differences in FDI inflows indicate the importance of gross domestic product (GDP), macro economic policies of the government, trade policies, corruption, good governance, and skill content of the work force in influencing FDI. This section presents the findings of some of the studies that are relevant for the present paper. Wei's (2000) study analyses the determinants of the bilateral stocks of FDI from 12 source countries to 45 host countries. The source countries include the U.S., Japan, Germany, U.K., France, and Italy. In analysing FDI, the following explanatory variables are used: tax rate, corruption, tax credit, political stability, GDP, population, distance between the two countries, linguistic ties between countries and the wage rates. Habib and Zurawicki (2002) also use similar variables like population, GDP growth, per capita GDP, unemployment rate, openness of the economy as measured by the ratio of trade to GDP, science and technology indicators, cultural distance and political stability to analyse FDI inflows. Their findings suggest that the absence of good governance is a serious obstacle for investment. Apart from governance indicators, geographical distance and economic ties also emerge as important determinants of FDI.

Globerman and Shapiro (2003) examine the statistical importance of government infrastructure as a determinant of FDI. They conducted the analysis in two stages. In the first stage the probability that a country was a recipient of US FDI was estimated. In the second stage their analysis was restricted to those countries that did receive FDI flows and estimated equations that were focused on the determinants of the amount of FDI received. These measures include the following: (a) rule of law index, which measures

contract enforcement, property rights, theft and crime; (b) political instability and violence index, which measures armed conflict, social unrest, ethnic tension and terrorist threats; (c) regulatory burden index, which measures government intervention, trade policy and capital restrictions; (d) government effectiveness index, measuring red tape and bureaucracy, wastes in government and public infrastructure; (e) graft and corruption index, measuring corruption among public and private officials and the extent of bribery; and (f) voice and accountability index, which measures civil liberties, political rights, free press, and fairness of the legal system. Their results consistently show that governance infrastructure is an important determinant of whether a country will receive any US FDI, and, if so, how much. All the governance variables considered in the study are relevant for inter-state analysis in India as these indicators differ significantly among the Indian States.

Several studies on FDI and industrial clusters show that MNEs favour locations that minimize information costs and offer a variety of agglomeration economies (He Canfei 2002). In particular, Belderbos and Carree (2002) analyse the location choices of Japanese electronics manufacturers in China's regions and provinces during 1990-1995 and confirm the major impact of regions in promoting industry, and Japanese *keiretsu*-specific agglomeration benefits. International orientation of provinces in terms of exports and imports orientation, and the presence of seaports appear to attract FDI.

For China, Wei (1999) finds that provinces with a higher level of international trade, lower wage rates, more R&D manpower, higher GDP growth rates, quicker improvement in infrastructure, more rapid advances in agglomeration, more preferential policies and closer ethnic links with overseas Chinese attract relatively more FDI.

Similarly, Jianpings' (1999) study on agglomeration effects of the location of U.S. and Japanese manufacturing firms within China's 30 administrative regions during the period 1981-1996 shows that agglomeration effects are important in the choice of provinces.

The studies reviewed indicate that four possible sets of factors influence interregional distribution of FDI in a given country. They are: (a) international orientation, (b) infrastructure, (c) education and social indicators, and (d) prosperity and industrial development of the region. Each one of the factors could be represented by a collection of variables. The exact variable that is ultimately used in the model will depend on availability of data, its appropriateness for the country and statistical significance. Furthermore, while comparing different regions with varying sizes, it is important to normalize them for the size factor. In this study the variables are normalized for population and introduced in per capita terms. The State domestic product could also be used to normalise for size but in this study population has been preferred as State domestic product enters as an explanatory variable in the equations.

III FDI and Inter-Province Differences in China

In China, by and large, provinces belonging to the Eastern Zone have been attracting FDI and they also happen to be the provinces enjoying higher per capita income (see Yao and Zhang 2001). The provinces belonging to the Western Zone have not been attracting FDI and they also happen to be the poorer provinces. In particular, the provinces that got high FDI also enjoyed high per capita income. These provinces also enjoyed better socio economic indicators. Table 3 presents the main indicators for 2003.

Table 3

China: Per capita foreign direct investment – inter province differences (2003)

	PCFDI	PCTRADE	SS	PCY	PCELEC	FREIGHT
Shanghai	319.61	6459.1444	5.53	46718	0.44	8492.3
Tianjin	151.76	2969.4848	6.79	26532	0.30	6521.1
Beijing	150.46	2151.4769	9.98	32061	0.32	462.5
Jiangsu	142.64	1637.6835	3.41	16809	0.20	1772.6
Zhejiang	106.43	1417.1890	4.22	20147	0.26	2047.2
Guangdong	98.35	3636.1823	5.63	17213	0.26	3158.0
Fujian	74.51	1105.5797	4.23	14979	0.17	1222.9
Liaoning	67.08	709.2962	6.43	14258	0.22	2385.2
Shangdong	65.93	541.4922	2.93	13661	0.15	3908.9
Hainan	51.97	235.8375	4.48	8316	0.07	250.7
Jiangxi	37.89	69.5035	2.45	6678	0.07	768.6
Hubei	26.14	96.7777	4.09	9011	0.10	1212.6
Hunan	15.28	70.5251	4.18	7554	0.08	1350.6
Hebei	14.24	143.0825	2.51	10513	0.16	3223.2
Shaanxi	8.99	96.3463	3.13	6480	0.11	849.1
Guangxi	8.62	66.3306	2.42	5969	0.09	863.4
Heilongjiang	8.44	162.9132	3.36	11615	0.13	991.4
Chongqing	8.33	81.7658	6.44	7209	0.09	367.7
Jilin	7.05	248.9266	2.57	9338	0.13	531.0
Shanxi	6.45	156.2705	2.74	7435	0.22	1259.1
Anhui	5.73	88.5333	3.26	6455	0.07	1328.6
Henan	5.58	57.7483	3.07	7570	0.11	1891.6
Sichuan	4.74	66.4326	3.36	6418	0.09	768.3
Qinghai	4.72	64.2131	2.59	7277	0.28	124.2
Inner Mongolia	3.72	135.5818	2.99	8975	0.18	1160.3
Ningxia	3.00	128.3198	2.29	6691	0.37	244.5
Yunnan	1.91	62.1640	2.57	5662	0.08	612.2
Guizhou	1.17	40.1440	3.02	3603	0.10	547.0
Gansu	0.90	49.6327	1.78	5022	0.15	738.7
Xinjiang	0.79	251.0209	3.10	9700	0.12	636.6

Source: www.stats.gov.cn/english/statisticaldata/yearlydata/

Note:

PCFDI, per capita foreign direct investment flows, FDI in UD\$10,000 and population in 10,000 persons.

PCTRADE, total exports and imports in US\$10,000.

SS, expenditure on social services..

PCY, per capita income, gross regional product in 100 million yuan and population in 10,000 persons.

PCELEC, per capita electricity consumption by region in 100 million kws. and population in 10,000 persons.

FREIGHT, fright 100 million ton-KM. by region – total of roads and railways and waterways.

Table 3, presents data for variables for the year 2003 for China. In all six variables have been selected for presentation in the table after trying several permutations and combinations. The table lists the provinces in the descending order of per capita FDI inflows. Column 1 lists the per capita FDI inflows. Per capita trade (total exports and imports) represents the international orientation of the province. Infrastructure facilities are represented by two variables, per capita electricity consumption and freight by roads and railways. Expenditure on social services has been used to represent the quality of life and social infrastructure. Certain other variables like death rate, expenditures on health and education were also tried but they did not emerge significant. Following the standard practice, per capita income has also been introduced. In addition, the share of industry was also introduced but it did not emerge significant.

As seen from Table 3, Shanghai has the highest per capita FDI inflows and it also has the highest per capita income. Its per capita income is almost 13 times higher than that of Guizhou². By and large, the provinces that have high per capita FDI also have high per capita income levels. The higher FDI provinces also enjoy better infrastructure facilities in terms of electricity and rail and road networks. They are also better internationally oriented in terms of their per capita international trade. Furthermore, they also spend more on social services.

To test for the statistical significance of these variables in determining FDI inflows, a time series – cross section pooled data set was prepared for the period 2000 to 2003 (four years) and for a cross section of 30 provinces. Table 4 presents Generalised Least Square estimates (with cross-section weights, corrected for heteroskedasticity) of

² Perhaps a comparison of Guizhou with Shanghai may not be proper as Shanghai is a city province. However, while dealing with India, Delhi, a city State has also been compared with Bihar.

the coefficients³.

Table 4

China: determinants of inter-province differences in FDI (2000-2003)

Generalised Least Square estimates (with cross-section weights, corrected for

heteroskedasticity)

Dep. Variable: Per capita FDI

Variable	Coefficient	't' Stat
Constant	-13.81819***	-17.62173
Per capita trade	0.035120***	11.50093
Social Security	2.084534***	13.43053
Per capita income	0.001635***	8.607487
Freight	0.003469***	5.648421
NOBS 120 (4 years * 30		
regions)		
R ² (weighted)	0.8856***	

^{***} significant at 1% level.

As anticipated from literature the survey and the data set presented in Table 3, all the variables introduced in the regression equation emerge significant (at 1 per cent level) in Table 4. Socio-economic indicators found significant in the inter-country differences in FDI inflows also emerge significant in explaining inter-regional differences in FDI inflows in China. This feature is captured by the use of social security expenditures. In addition per capita province income could also capture general well-being of the province. In the inter-country studies, per capita income is used to capture the market size, but in the intra-country case this interpretation may not be relevant as the market is for the whole country and not for a particular region. Per capita foreign trade, another variable that had emerged important in the inter-country studies, has also emerged significant in the Chinese inter-provinces case. For physical infrastructure facilities

_

³ Fixed effect models were tried but could not be estimated as some of the variables exhibited very little intra-cross section variability while exhibiting significant inter-cross section variability. As a result, fixed effect models, which in effect use cross section dummies, showed a near singular matrix due to high correlation between cross section dummies and some of the independent variables.

freight by rail, road and waterways has emerged significant. This variable was also significant in the inter-country studies. All the variables used in the inter-country studies may not be relevant for intra-country studies as they include variables that are of a macro economic nature affecting the entire country. However, the variables that show inter province differences and therefore introduced in this study have emerged important.

IV FDI and Inter-State Differences in India

As Table 5 indicates, the top six States that received high levels of FDI inflows are also at the top in terms of high industrial output. By and large, most investments went to the coastal areas and the NCR (Delhi and the surrounding areas). As Map 1 shows, the rest of the States received very little investment, both domestic and foreign. Moreover, the States that received higher inflow of FDI enjoyed higher levels of per capita income than the Indian average.

Table 5 presents per capita FDI in States in the descending order for the year 2004. It also presents certain other variables that are used in the regression equation: socio-economic index, human development index, enrolment ratio in schools, per capita income at current and constant prices, percentage of urban population to total population, per capita consumption of electricity, per capita industrial output, overall tele-density and life expectancy. Some of the earlier studies have found urbanisation an important determinant of FDI inflows. This variable was not readily available for China and hence could not be used in the Chinese sample. Physical infrastructure features are represented by tele-density and electricity consumption. Road density was also used but not reported in the table. Socio-Economic features are captured by socio economic index, human

development index, school enrolment ratio, and life expectancy. Furthermore, in addition to per capita income, per capita industrial output has also been introduced as industrialisation could have a direct link with FDI inflows. The table does not include Delhi. FDI inflows are classified as per the registered offices of firms. Delhi has the registered offices of firms but the manufacturing units are located in the adjoining areas of Haryana and Uttar Pradesh.

Table 5
India: Per capita foreign direct investment – inter-state differences

	PCFDI	SEI	HDI	EDENR	PCY	URBPP	PCELEC	PCINDO	PCYCP	TELE	I
Maharashtra	362.8924	112.80	0.523	87.55	29204	42.40	17281.78	19470	16050	9.498	
Tamil Nadu	353.8177	149.10	0.531	100.41	23358	43.86	19447.53	16763	13423	10.911	
Karnataka	346.4661	104.88	0.478	76.20	21696	33.98	8334.04	8829	11799	11.803	
Orissa	216.9032	81.00	0.404	54.01	12388	14.97	7816.70	3628	6427	3.646	
Gujarat	211.3817	124.31	0.479	70.40	26979	37.35	12097.61	25496	16779	12.065	
Haryana	174.9299	137.54	0.509	65.51	29963	29.00	8969.80	21391	15721	10.163	
Andhra Pradesh	146.8943	103.30	0.416	64.86	20757	27.08	16182.17	8161	11333	9.185	
Madhya Pradesh	145.5653	76.79	0.394	63.30	14011	26.97	12163.07	6150	8284	4.830	
West Bengal	93.7230	111.25	0.472	64.28	20896	28.03	7649.71	4914	10952	2.776	
Punjab	84.3017	187.57	0.537	60.06	27851	33.95	7969.17	14530	15800	21.861	
Kerala	54.4352	178.68	0.638	93.64	24492	25.97	6553.02	8424	12109	17.846	
Rajasthan	48.8218	75.86	0.424	61.54	15486	23.38	10521.79	5507	8571	5.777	
Uttar Pradesh	27.5089	101.23	0.388	48.64	10817	20.78	22439.20	3948	5610	3.882	
Bihar	8.4865	81.33	0.367	25.33	5780	10.47	5456.02	883	3707	2.014	
Assam	0.0535	77.72	0.386	56.22	13139	12.72	2510.63	3313	6520	2.706	

Source: www.indiastat.com

Notes:

PCFDI, per capita stock of FDI approvals since 1991 (liberalisation). FDI figures are in Rupees ten million. and population figures are in million persons.

SEI, socio economic index presented by the government.

HDI, human development index prepared by the government.

EDNER, enrolment ratio in schools in the age group 11 - 14 years.

PCY per capita income at current prices.

URBPP, percentage of urban population in total population.

PCELEC, gross annual per capita consumption of electricity.

PCINDO, per capita gross industrial output in rupees.

PCYCP, per capita income at constant prices.

TELF, Overall teledensity.

LIFEEX, life expectancy at birth.

As in the case of China, in India also the States enjoying high per capita FDI flows also enjoy high per capita income. Bihar has the lowest per capita income (Rs. 5780) and Maharashtra and Haryana the highest (Rs. 29240 and 29963) and the difference between Bihar and the high income states is five fold. Delhi (not given in the Table 5) has a higher per capita income (Rs.51664), which is more than 8 times higher than that of Bihar. Nevertheless, differences in per capita incomes in India are less than those in China. States enjoying higher FDI levels also have higher per capita industrial output. However, Orissa happens to be an exception in this respect. It has very low levels of industrialisation and yet has obtained a reasonable amount of FDI. This is mainly due to the differences in the nature of FDI obtained by Orissa and other States. Unlike the rest of India, Orissa has been attracting FDI aimed at exploiting its natural resources like ores and minerals. Again with the exception of Orissa, most of the States with high FDI levels are also urbanised. Orissa also happens to be an exception when infrastructure variables like tele-density and per capita electricity consumption are considered. By these indicators the rank of Orissa in FDI inflows should be very low.

When we consider socio-economic variables, two States emerge as exceptions – Kerala and Orissa. Kerala attracts very low FDI but enjoys very high values of socio economic indicators. Kerala ranks number 1 in socio-economic index, human development index, tele-density and life expectancy. However, it does not attract much FDI and is also relatively low in industrialisation. The opposite is the case of Orissa - it is relatively high in FDI inflows but very low in socio-economic and human development indices, in life expectancy and tele-density. It is also low in industrialisation. Apart from

these two States, other states follow the expected pattern of the behaviour of FDI being in line with the socio-economic variables.

Table 6 India: determinants of Inter-State differences in FDI (2000-2004)

Generalised Least Square estimates (with cross-section weights, corrected for

Heteroskedasticity)

Dep. Variable: Per capita FDI

Variable	Coefficient	't' Stat
Constant	-383.7504***	-5.268220
Socio-Economic Index	-3.224413***	-8.869783
Education-Enrolment	0.954087***	3.688089
% of Urban Population	10.99286***	20.22645
Per capita Industrial Output	0.004445***	14.84318
Tele density	3.358361***	2.829902
Life expectancy	7.293228***	4.204932
NOBS 75(years 5 and		
States 15)		
R ² (weighted)	0.9887***	

^{***} significant at 1% level.

Table 5 presents the generalised least square estimates (with cross-section weights, corrected for heteroskedasticity) of the determinants of inter-State differences in FDI for fifteen Indian States over a five year period (2000-2004). In the table except for the socio-economic index all the other coefficients have the expected signs and all the coefficients are significant at 1 per cent level. The negative sign for the socio-economic index could be due to the effect of Kerala discussed earlier. However, the other two variables representing social and health indicators, namely, enrolment ratio and life expectancy have the expected positive signs. Urbanisation and per capita industrial production have the highest 't' values. The infrastructure variable – tele-density, is also significant in explaining FDI.

V Main Findings of the Study

Earlier studies have compared FDI inflows to China and India (Siddharthan and Rajan 2002; Wei and Balasubramanyam 2004; and the references therein). However, there is no study comparing the regional differences in FDI inflows in the two countries. In fact there are very few studies on regional differences in FDI inflows. This paper makes an attempt to fill this gap. Recent literature, in this field, concentrates on the determinants of inter-country differences in FDI inflows. The results of these studies show that FDI mainly goes to countries that are rich, endowed with good physical and institutional infrastructure, have a highly skilled workforce, and are technologically advanced. These countries also follow more open trade policies and concentrate on good governance, including rule of law. Most of the developed countries have these characteristics and consequently the bulk of FDI flows to the rich and developed countries. Most of the lowincome countries receive very little or no FDI. Nevertheless, some of the larger developing countries like China, Brazil, Mexico, ASEAN member countries and more recently, India, have also been receiving FDI. However, as shown in this paper, FDI inflows in China and India have been confined to a few States/provinces.

The main finding of this paper is that the determinants of regional distribution of FDI flows in China and India are very similar to the pattern influencing inter-country FDI flows, namely, it flows to relatively developed regions and regions that are poor in physical, institutional and social infrastructure receive very little FDI. Exceptions apart, by and large, regions that are bypassed by FDI are also the regions that have lower life expectancy, are low in human development and socio economic indicators, and poor in

governance indicators. Furthermore, these regions do not attract domestic investments either.

The findings of this study raise several issues. The question of the role of FDI in economic development in developing countries, namely, whether FDI promotes development or flows to developed regions and further accentuates regional inequalities, assumes importance. The process of development does not seem to result in a convergence of the level of development of different regions. Instead it could result in a divergence. The crucial concern is one of rapidly developing infrastructure and promoting good governance. These two matters are related, good governance is crucial for infrastructure development in the fields of social services, health, education and physical infrastructure. To get rid of this vicious cycle, certain far-reaching reforms, including institutional reforms are needed. This paper, mainly identifies these issues for further work. China and India must evolve an action plan to develop their less developed regions urgently before the problem gets out of hand.

References

- Audretsch, David B. and Erik E. Lehmann (2005). "Does the knowledge spillover theory of entrepreneurship hold for regions?", *Research Policy*, 34(8): 1191-1202.
- Belderbos, Rene and Martin Carree (2002). 'The Location of Japanese Investments in China: Agglomeration Effects, Keiretsu, and Firm Heterogeneity'. *Journal of the Japanese and International Economies*, 16(2): 194-211
- Breschi, Stefano and Franco Malerba. (2001). "The Geography of Innovation and Economic Clustering: Some Introductory Notes," *Industrial and Corporate Change*. Vol.10, No.4: 817-33.
- Cooke, Philip. (2001). "Regional Innovation Systems, Clusters, and the Knowledge Economy," *Industrial and Corporate Change*. Vol.10, No.4: 945-974.

- Eaton, Curtis B., Richard G.Lipsey and A. Edward Safarian (1994). 'The Theory of Multinational Plant Location: Agglomeration and Disagglomerations', Economic Growth and Policy Program, Canada Institute of Advanced Research, Canada.
- He, Canfei (2002). 'Information Costs, Agglomeration Economies and the Location of Foreign Direct Investment in China', *Regional Studies*. December; 36(9): 1029-36.
- Globerman, Steven (2002). "Global foreign direct investment flows: The role of governance infrastructure", *World Development*, 30(11): 1899-1919.
- Globerman, Steven and Daniel Shapiro (2003). "Governance infrastructure and US foreign direct investment", *Journal of International Business Studies*", 34(1): 19-39.
- Habib, Mohsin and Leon Zurawicki (2002). "Corruption and foreign direct investment", *Journal of International Business Studies*, 33(2): 291-307.
- Jianping, Ding (1999). 'Agglomeration Effects in Manufacturing Location--Are There Any Country's Preferences?' *Economia Internazionale*, 52(1): 59-78
- Ronde, Patrick and Caroline Hussler (2005). "Innovation in regions: What does really matter?", *Research Policy*, 34(8): 1150-1172.
- Siddharthan N. S. and Rajan Y (2002). Global Business, Technology and Knowledge Sharing: Lessons for Developing Country Enterprises, Macmillan, New Delhi, i-xvii, 1-217.
- Tuan, Chyau; Ng, and F.Y. Linda (2003). `FDI Facilitated by Agglomeration Economies: Evidence from Manufacturing and Services Joint Ventures in China', *Journal of Asian Economics*. January; 13(6): 749-65.
- Wei, Shang-jin (1999). "Can China and India double their inward foreign direct investment?", A paper presented at the *NBER Conference on India*, Neemrana, December 1999. www.nber.org/~confer/99/indiaf99/India-China-FDI.PDF
- Wei, Shang-jin (2000). "How taxing is corruption on international investors?", *The Review of Economics and Statistics*, 82(1): 1-11.
- Wei, Yingqi, (1999). `The Regional Distribution of Foreign Direct Investment in China', *Regional Studies*, 33(9): 857-67.
- Wei, Yingqi Annie and V. N. Balasubramanyam (eds). (2004). Foreign Direct Investment: Six Country Case Studies, Edward Elgar, Cheltenham, UK.

- Wei, Yingqi Annie (2004). "Foreign direct investment in China", in Wei, Yingqi Annie and V. N. Balasubramanyam (eds). Foreign Direct Investment: Six Country Case Studies, Edward Elgar, Cheltenham, UK.: 9-46.
- Yao, Shujie and Zongyi Zhang (2001). "Regional growth in China under economic reform", *The Journal of Development Studies*, 38(2): 167-186.
- Zucker, Lynne G.; Michael R. Derby; and Marilynn B. Brewer (1998). "Intellectual and the birth of US biotechnology enterprises", *American Economic Review*, 88(1): 290-306.