Foreign Direct Investment in China

--- Determinants, Origins and Impacts

By

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To My Parents

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Abbreviations

APEC	Asian Pacific Economic Cooperation
ASEAN	Association of South-East Asian Nations
CGAC	China General Administration of Customs
DCs	Developed Countries
DOEs	Domestic Enterprises
EAAU	East Asia Analytical Unit (Australia)
ETDZs	Economic and Technological Development Zones
FDI	Foreign Direct Investment
FFEs	Foreign Funded Enterprises
GDP	Gross Domestic Product
GLS	Generalised Least Squares
ICSID	International Centre for the Settlement of Investment Disputes
IMF	International Monetary Fund
JETRO	Japan External Trade Organisation
LDCs	Less Developed Countries or Developing Countries
MNEs	Multinational Enterprises
MOFTEC	Ministry of Foreign Trade and Economic Cooperation of China
NIEs	Newly Industrialising Economies
NTB	Non-Tariff Barrier
OCEs	Overseas Chinese-Funded Enterprises
OLI	Ownership advantage, Location advantage and Internalisation advantage
OLS	Ordinary Least Squares

ONCEs	Overseas Non-Chinese-Funded Enterprises
RMB	Renminbi --- the name of the Chinese currency
SAEC	State Administration for Exchange Control of China
SEZs	Special Economic Zones
SOEs	State-Owned Enterprises
SSB	State Statistical Bureau of China
TRIMs	Trade Related Investment Measures
TVEs	Township and Village Enterprises
WECs	Western European Countries
WTO	World Trade Organisation

Abstract

This is a theoretical and empirical study of foreign direct investment (FDI) in China, focusing on the location determinants, the differences among source countries, and the impact on trade. The issues are analysed mainly within Dunning's "OLI" theoretical framework for FDI, supplemented by theories of transactions costs and international trade.

The evolution of China's FDI policies are analysed at the beginning of the thesis to provide a general policy background for the study of FDI in China. The study shows that China's gradual reform approach has achieved substantial progress within a relatively short period. However, compared with APEC's investment-related principles, China's current FDI policy needs to be further improved, particularly in respect of transparency and national treatment.

To compare China's performance in attracting FDI relative to other developing countries and to explain the uneven distribution of FDI within China, the location determinants of FDI are first investigated at the country level among developing countries and then at the provincial level within China. The studies show that given the ownership and internalisation advantages of the enterprises of source countries, location factors, including economic and geographical characteristics and government policies, are very important determinants affecting the magnitudes of FDI inflows into both the developing countries and the provinces within China.

There are large differences among the major foreign investors in China in terms of their investment behaviours. By concentrating on the issues of investment intensity, regional investment bias, pattern of investment, type of entry, market orientation, factor intensity and factor productivity, the study reveals that economic and technological development levels and proximity, including geographic distance, cultural difference and regulatory barriers, are important contributors to these differences.

Manufacturing has been the most important sector receiving FDI among China's economic sectors, and, therefore, its industrial composition has special significance. The analysis reveals that the industrial distribution of foreign funded enterprises (FFEs) in China's manufacturing is characterised by their concentration in labour-intensive and fast-growing export-oriented industries. The study also shows that China's abundant labour resource endowments and industrial characteristics, like market size and growth rate of industries, are important determinants of the foreign investment pattern in China's manufacturing.

Finally, the relationship between FDI and trade is investigated using the evidence of China. The empirical study reveals not only a complementary relationship between FDI and trade, but also a positive and statistically significant impact of FDI on both China's provincial trade and China's bilateral trade. This finding demonstrates that the overwhelming dominance of developing source countries and its labour-intensive investment pattern in China's FDI are well matched with China's abundant labour resource endowments and comparative advantages in labour-intensive activities.

Research Declaration

This thesis contains no material which has been accepted for the award of any other degree in any university and, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my thesis, when deposited in the University Library, being available for loan and photocopying.

22/ 06/ 1998

Chen Chunlai

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Chapter 1

Introduction

Foreign direct investment (FDI) is one of the most dramatic features of China's move from a planned economy toward a market economy. Since the passing in late 1979 of the Equity Joint Venture Law which granted legal status to FDI in Chinese territory, China has gradually liberalised its FDI regime, and an institutional framework has been developed to regulate and facilitate such investments. The liberalisation of the FDI regime and the improved investment environment have greatly increased the confidence of foreign investors in China. Consequently, FDI inflows into China increased rapidly after 1979, and particularly during the early 1990s. The total accumulated amount of FDI at current prices rose from the initial US$0.109 billion in 1979 to reach US$133.19 billion in 1995, at an annual growth rate of 55.93 percent.[1] In 1991, China ranked only thirteenth in the world and third among the developing countries in terms of FDI inflows (United Nations, 1994, p. 68). Since 1993 China has become the second largest FDI

[1] However, we should note that this high annual growth rate is also partly because of the very low base of FDI in China in 1979.

recipient in the world (following the United States) and the single largest host country among the developing countries (United Nations, 1995, p. 54). Over the course of the last 16 years from 1979 to 1995, FDI became well-established in China's economy, and the activities of Multinational Enterprises (MNEs) came to assume increasing importance in capital formation, labour training, technology transfer, international trade, and in accelerating the transition of China from a planned economy to a market economy. As a result, FDI has increasingly integrated the Chinese economy into the world economy.

1.1 Why Study Foreign Direct Investment in China?

Because of its fast growth and huge amounts of inflows, foreign direct investment in China has received increasing attention both within China and abroad. However, why study foreign direct investment in China? There are several principle reasons.

First, China is the world's largest developing country and one of its fastest growing economies. China's participation and growing role in the world economy call for a careful study of the pattern and process of China's internationalisation. Undoubtedly, foreign direct investment in China's economy will play a very important and increasing role in the process of China's internationalisation. Therefore, studying FDI in China has a strategic significance not only for China but also for the whole world economy.

Second, China both is the largest FDI recipient among developing countries and the second largest FDI recipient in the world. As a result, China has increasingly become more and more significant in influencing not only the flows of international direct investments but also the division of labour and specialisation in global production. Therefore, studies of FDI cannot afford to ignore China.

Third, the fast growth rate of FDI inflow into China during the last 16 years, particularly since 1992, has caused increasing concern in other developing countries about their own efforts in attracting FDI inflows. Has the fast growth of FDI inflow into China caused a diversion of FDI away from other developing countries? One cannot answer this question without a careful study of the location determinants affecting FDI inflows and the relative performance of China as compared with other developing countries.

Fourth, one of the prominent features of FDI in China is the overwhelming dominance of investments from developing source countries, particularly overseas Chinese investors. The existing theories of FDI have been mainly drawn from studies of developed source countries. Little work has been done on the investment behaviour and characteristics of developing source countries. Fortunately, FDI in China provides a valuable opportunity for economists not only to test the adequacy of existing theories of FDI but also to compare the particular characteristics of developing source countries with developed source countries in their investment behaviour.

Fifth, China has a particular political and economic environment. It is moving from a planned economy toward a market economy. Its experience with FDI is thus of relevance to many other developing countries, especially to the former socialist countries of Eastern European, not only because of the magnitude of FDI inflows it has attracted but also because the essential elements of the policy environment are replicated there.

Finally, previous studies of FDI in China can be broadly classified into three groups. The first group has mainly focused on China's FDI policy and institutional changes, for example, Shirk (1994) and Wei Jia (1994). The second group has focused on case studies either on a particular source country's investment in China or on a particular China's host region or province, for example, Pomfret (1989), Thoburn, Leung, Chau and Tang (1990), Ash and Kueh (1993), Qi Luo and Howe (1993), Zhang Leyin (1994), Croix, Plummer and Lee (1995), Takuji Yukawa (1995), Whitla and Davies (1996a and 1996b). The third group of studies has been the general description and analysis of the characteristics, the main issues, and the economic and social impacts of FDI in China, for example, Kamath (1990 and 1994), Pomfret (1991, 1994a and 1994b), Fan Yongming (1992), Kueh (1992), Zhan (1993), Chung Chen, Lawrence Chang and Yimin Zhang (1995), Sun Haishun (1995), Chen Chunlai (1996), Teo and Wang (1996). Although these previous studies have made some valuable contributions to the study of FDI in China, there still is a lack of and, therefore, a need for a comprehensive theoretical and empirical study. It is aimed in this thesis to fill this gap.

1.2 FDI Inflow into China Between 1979 and 1995

1.2.1 The growth of FDI inflow into China

Table 1.1 and Figure 1.1 present the growth pattern of realised FDI inflow into China from 1979 to 1995. In this period there were three distinct phases: 1979-83, 1984-91, and 1992-95.

In the initial period of 1979-83, following the establishment of the four Special Economic Zones (SEZs) in Guangdong and Fujian provinces,[2] accompanied by the special incentive policies for FDI offered by the Chinese government in these SEZs, FDI inflows into China were highly concentrated in Guangdong and Fujian provinces, and particularly in the four SEZs. For example, Guangdong and Fujian provinces absorbed more than 70 percent of total FDI inflows in 1983 (State Statistical Bureau, 1992, p. 353). However, since the Chinese government was very cautious about introducing FDI into its domestic economy, foreign investors were also cautious about making investments in China in the initial stage of China's opening up to the outside world. During this period, therefore, China's performance in attracting FDI inflows were not very impressive. The inflows of realised FDI were only US$109 million in 1979 and US$636 million in 1983, averaging US$351 million annually.

[2] Shenzhen, Zhuhai, and Shantou in Guangdong Province, and Xiamen in Fujian Province.

Table 1.1 Realised FDI inflow into China, 1979-1995

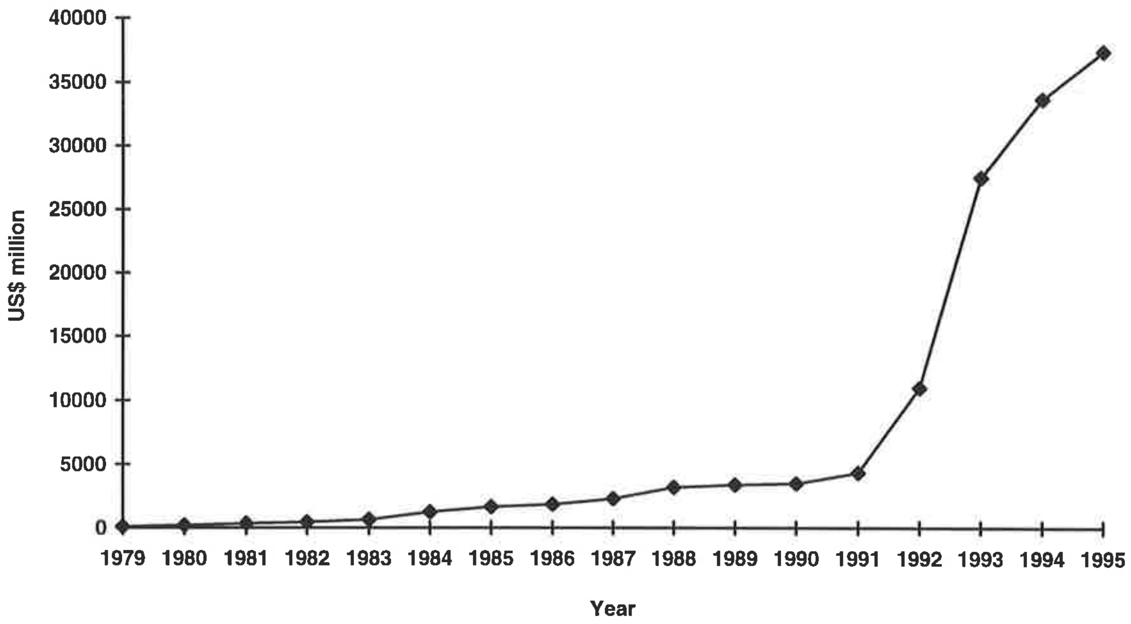
(millions of US dollars at current prices)

Year	FDI inflow
1979	109
1980	195
1981	375
1982	440
1983	636
1984	1258
1985	1661
1986	1874
1987	2314
1988	3194
1989	3392
1990	3487
1991	4366
1992	11007
1993	27515
1994	33767
1995	37521

Sources: Data for 1979-82 are from Chung Chen, Lawrence Chang and Yimin Zhang (1995), "The Role of Foreign Direct Investment In China's Post-1978 Economic Development", *World Development*, Vol. 23, No. 4, pp. 691-703.

Data for 1983-95 are from various issues of the State Statistical Bureau, *Zhongguo Tongji Nianjian* [China Statistical Yearbook], Zhongguo Tongji Chubanshe, Beijing.

Figure 1.1 Realised FDI inflow into China, 1979-1995
(current prices)



Source: As Table 1.1.

The second phase began in 1984 when Hainan Island and fourteen coastal cities across ten provinces were opened to FDI. As in the SEZs, a series of special economic policies were introduced in these open coastal cities. Consequently, in 1984 the inflows of realised FDI into China doubled the amount of that in 1983, reaching US$1,258 million, and contracted FDI in the fourteen coastal cities exceeded that in the four SEZs, indicating a new phase in attracting FDI inflows into China. The momentum of FDI inflow into China continued from 1984 to 1988 with an annual growth rate of 38 percent. However, in 1989, mainly due to the Tiananmen events, the growth rate of FDI inflows into China fell sharply from 38 percent in 1988 to 6 percent in 1989. The downturn continued in 1990, when the growth rate of FDI inflows into China further declined to only 3 percent. Although the growth rate in 1991 recovered to 25 percent, the annual growth rate of FDI inflows into China was only 11 percent from 1989 to 1991. This was the lowest growth rate in the entire period from 1979 to 1995. However, during the period 1984 to 1991, the Chinese government made a lot of effort to attract FDI inflows. These included opening more and more areas and regions to FDI, such as the Yangzi River delta, the Pearl River delta, the Min Nan region, the Shanghai Pudong New Development Area and the entire coastal areas, and introducing a series of laws and regulations to encourage FDI inflows. As a result, FDI inflows into China continued to increase in absolute terms during the whole period from 1984 to 1991.

In the Spring of 1992, Deng Xiaoping made a tour to China's southern coastal economically opened areas and SEZs, and made a speech, which subsequently became famous. His aim was first to push China's overall economic reform process forward, and second to emphasise China's commitment to the open-door policy and market-oriented economic reform in order to increase the confidence of foreign investors to invest in China. His speech explicitly declared his support for the successful economic development assisted by foreign direct investment in the economically opened areas and SEZs, and expressed a desire to see the pace of liberalisation quickened. Deng Xiaoping's visit, which turned out to be a landmark, set the scene for China's move away from the uneven regional priority toward nationwide implementation of open policies for FDI. The Chinese government then adopted and implemented a series of new policies and regulations to encourage FDI inflows into China.[3] The results were astounding. In 1992 the inflows of realised FDI in China reached US$11,007 million, double the figure of 1991. In 1993 the inflows of realised FDI again doubled the figure of 1992, reaching

[3] See Chapter 2 for more detailed discussion of China's FDI policies and regulations.

US$27,515 million. This figure was even higher than the total inflows of realised FDI into China from 1979 to 1991. In 1994 and 1995, the inflows of realised FDI reached US$33,767 million and US$37,521 million respectively. As a result, since 1993 China has become the second largest FDI recipient in the world and the single largest host country among developing countries.

1.2.2 China's FDI inflow in global perspective

What has been the position of China in world FDI inflows since it began to attract FDI into its domestic economy after 1978? As shown in Table 1.2 from 1981-1991 China's shares in FDI inflows in the world, in all developing countries and in East and South-East Asia were around 2 percent, 10 percent and 20 percent respectively with minor annual fluctuations. However, in 1992 China's shares in FDI inflows in the world, in all developing countries and in East and South-East Asia increased dramatically, reaching 6.5 percent, 20.5 percent and 36.4 percent respectively. Further, in 1993, FDI inflows into China (US$27.5 billion) accounted for more than 13 percent of total world FDI inflows, more than one-third of FDI inflows into all developing countries and more than half of FDI inflows into East and South-East Asia. In 1994, the growth rate of FDI inflows into China declined compared with that of 1992 and 1993. However, China still attracted US$33.8 billion of FDI inflow, and its share in FDI inflows in the world, in all developing countries and in East and South-East Asia further increased to 15 percent, 40 percent and 59 percent respectively. Growth at these rates and shares of these amounts are unprecedented in world economic history.

Table 1.2 China's shares in FDI inflows in the world, developing countries, and East and South-East Asia

Year	China's share in the world (%)	China's share in all LDCs (%)	China's share in East and South-East Asia[a] (%)
1981-86 (average)	1.85	7.69	20.29
1987	1.72	9.15	20.60
1988	2.01	11.51	21.81
1989	1.69	11.85	23.55
1990	1.65	10.05	18.13
1991	2.76	10.68	21.60
1992	6.55	20.38	36.37
1993	13.20	37.51	58.38
1994	15.00	40.03	58.74

Sources: Data for 1981-1986 annual average and 1987 are from the United Nations (1993), *World Investment Report 1993: Transnational Corporations and Integrated International Production*, United Nations Publication, United Nations, New York and Geneva, Annex Table 1.

Data for 1988 are from the United Nations (1994), *World Investment Report 1994: Transnational Corporations, Employment and the Workplace*, United Nations Publication, United Nations, New York and Geneva, Annex Table 1.

Data for 1989-1994 are from the United Nations (1995), *World Investment Report 1995: Transnational Corporations and Competitiveness*, United Nations Publication, United Nations, New York and Geneva, Annex Table 1.

Note: a: Refers to China, Hong Kong, Singapore, South Korea, Taiwan, Malaysia, Indonesia, Thailand and the Philippines.

1.2.3 The regional distribution of FDI within China

Although at the national level the aggregate FDI inflows into China have grown steadily over the past 16 years, particularly during 1992 to 1995 when there was the unprecedented surge of FDI inflows into China, the distribution of inward FDI among China's thirty provinces has been very uneven. As a single province Guangdong has been the largest FDI recipient in China among all the provinces, and as a group the eastern region provinces have been overwhelmingly dominant for the period under study. Table 1.3 presents the FDI stock (at constant 1980 US dollar prices) accumulated from 1983 to 1995 by the three regions and selected provinces. As the table indicates, the distribution of FDI among regions and provinces has been very uneven. The figures highlight the importance of the eastern region provinces as the main recipients of FDI in China. For the period 1983-95, the percentage shares in the national total of FDI stock were 88.51 percent for the eastern region provinces, 9.49 percent for the central region provinces, and only 2 percent for the western region provinces. Among the provinces, Guangdong's performance in attracting FDI has been very impressive. Its share of accumulated FDI stock from 1983 to 1995 was nearly one third of the national total, far exceeding all other provinces including Jiangsu, Fujian, and Shanghai, each of which possessed around 10 percent of the national total, and ranked second, third and fourth respectively among China's thirty provinces.

Table 1.3 Accumulated FDI stock in China by regions and selected provinces, 1983-1995 (1980 constant US dollar prices)

Regions	FDI stock 1983-1995 (million US$)	Share 1983-1995 (%)
East Region	**66220**	**88.51**
Guangdong	23739	31.73
Jiangsu	7903	10.56
Fujian	7771	10.39
Shanghai	6062	8.10
Shandong	5078	6.79
Zhejiang	2275	3.04
Central Region	**7102**	**9.49**
Sichuan	1383	1.85
Hubei	1217	1.63
Hunan	869	1.16
Henan	808	1.08
West Region	**1495**	**2.00**
Shaanxi	759	1.02
Xinjiang	131	0.18
Provincial Total	**74817**	**100**

Sources: Data for 1983-91 are calculated from the State Statistical Bureau (1992), *Zhongguo Duiwai Jingji Tongji Daquan 1979-1991* [China Foreign Economic Statistics 1979-1991], China Statistical Information & Consultancy Service Centre, Beijing.

Data for 1992-93 are calculated from the State Statistical Bureau (1995), *Zhongguo Duiwai Jingji Tongji Nianjian 1994* [China Foreign Economic Statistical Yearbook 1994], Zhongguo Tongji Chubanshe, Beijing.

Data for 1994 and 1995 are from the State Statistical Bureau (1996), *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996], Zhongguo Tongji Chubanshe, Beijing.

1.2.4 Who are the major investors in China?

Since 1979 more than 100 countries have invested in China. However, who are the major investors? In terms of the accumulated FDI stocks by source countries and economic groupings, as shown in Table 1.4, during the period from 1983 to 1995, investments from developing source countries dominated FDI in China, accounting for 77.73 percent of the total accumulated FDI stocks. Among the developing source countries, as a group the NIEs (Hong Kong, Taiwan, Singapore and South Korea) have been the largest investors, accounting for 71.55 percent of the total accumulated FDI inflows. Within the NIEs, Hong Kong has held the dominant position, accounting for 58.78 percent, followed by Taiwan, accounting for 8.31 percent.

The FDI inflows into China from ASEAN countries are also very impressive compared with these countries' economic size and their ability to invest abroad. The four ASEAN countries (Malaysia, Indonesia, the Philippines and Thailand) accounted for 1.62 percent of the total accumulated FDI inflows into China.

From 1983 to 1995, the accumulated FDI inflows from developed source countries accounted for only 22.27 percent of the total FDI inflows into China. Among the developed countries, the United States and Japan are the most important investors, each accounting for 8.21 percent and 8.06 percent, while the combined share of the other developed countries is only 6 percent. Apart from the UK, whose share is 1.64 percent, no other individual developed country has contributed more than 1 percent of the total.

Table 1.4 Accumulated FDI stock in China by source countries, 1983-1995 (1980 constant US dollar prices)

Source Countries	FDI stock 1983-1995 (million US$)	Share 1983-1995 (%)
All Developing source countries	**60067**	**77.73**
NIEs[a]	**55292**	**71.55**
Hong Kong	45424	58.78
Taiwan	6425	8.31
ASEAN[b]	**1255**	**1.62**
All Developed Source Countries	**17209**	**22.27**
USA	**6346**	**8.21**
Japan	**6228**	**8.06**
West Europe	**3732**	**4.83**
UK	1269	1.64
Germany	702	0.91
France	522	0.68
Italy	464	0.60
Total	**77276**	**100**

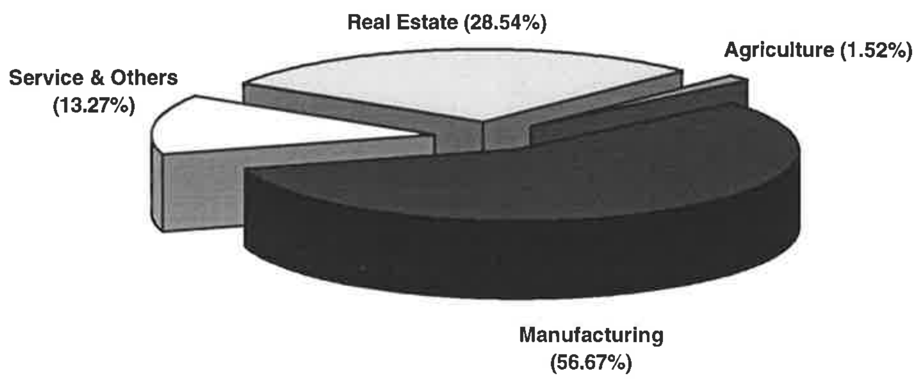
Sources: Various issues of the Editorial Board of the Almanac of China's Foreign Economic Relations and Trade, *Zhongguo Duiwai Jingji Maoyi Nianjian* [Almanac of China's Economic Relations and Trade], Zhongguo Shehui Chubanshe, Beijing.

Notes: a: Hong Kong, Taiwan, Singapore and South Korea;
b: Malaysia, Indonesia, the Philippines and Thailand.

1.2.5 Foreign direct investment in China's manufacturing

How important has the manufacturing sector been in total FDI in China? In terms of the accumulated FDI stocks based on contracted data, as Figure 1.2 shows, at the end of 1995, the manufacturing sector had attracted 56.67 percent of the total. As a result, the manufacturing sector has been the largest and the most important FDI recipient among all China's economic sectors.

Figure 1.2 Sectoral distribution of accumulated FDI stocks in China, 1983-1995 (1980 constant US$ prices)



Sources: Data for 1983-91 are calculated from the State Statistical Bureau (1992), *Zhongguo Duiwai Jingji Tongji Daquan 1979-1991* [China Foreign Economic Statistics 1979-1991], China Statistical Information and Consultancy Service Centre, Beijing, pp. 314-316.

Data for 1992-93 are calculated from the State Statistical Bureau (1995), *Zhongguo Duiwai Jingji Tongji Nianjian 1994* [China Foreign Economic Statistical Yearbook 1994], Zhongguo Tongji Chubanshe, Beijing, p. 263.

Data for 1994 are calculated from the Editorial Board of the Almanac of China's Foreign Economic Relations and Trade (1995), *Zhongguo Duiwai Jingji Maoyi Nianjian 1995* [Almanac of China's Economic Relations and Trade 1995], Zhongguo Shehui Chubanshe, Beijing, p. 659.

Data for 1995 are calculated from the State Statistical Bureau (1996), *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996], Zhongguo Tongji Chubanshe, Beijing, p.603.

Since the manufacturing sector is the main recipient of FDI inflows, its industrial distribution has special significance. As Table 1.5 shows, in terms of the total assets of foreign-funded enterprises (FFEs) at the year end of 1995, FFEs were mainly concentrated in labour-intensive industries, accounting for 50.42 percent. As a result, capital-intensive industries and technology-intensive industries received relatively small amounts of the total manufacturing FDI, accounting for 22.73 percent and 26.85 percent respectively.[4]

Table 1.5 Industrial composition of FFEs by factor intensity of industry groups (end 1995, percent)

Industry groups	Composition of Foreign-Funded Enterprises (%)
Labour-intensive industries	50.42
Capital-intensive industries	22.73
Technology-intensive industries	26.85
Total	**100**

Source: Calculated from the State Statistical Bureau, *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996].

Note: The calculation is based on the total assets at the year end of 1995.

How important are FFEs in China's manufacturing sector? As Table 1.6 shows, in 1995 FFEs accounted for 19.09 percent of the total assets in China's manufacturing sector. This indicates that foreign ownership in China's manufacturing is still low.

[4] The classification of China's industries into labour intensive, capital intensive, and technology intensive categories are based on Zhang Xiaohe (1993), *Economic Liberalisation, Dualism and the International Trade Pattern of China: Theory and Evidence*, Ph.D Thesis, The University of Adelaide.

However, it is important to stress that within only 16 years FFEs' share has grown from zero to nineteen percent. This is not insignificant, especially when we take into account the large aggregate scale and overall fast growth rate of China's manufacturing sector in the last 16 years.

Table 1.6 Shares of FFEs in China's manufacturing by factor intensity of industry groups (end 1995, percent)

Industries	Shares of FFEs (%)
Labour-intensive industries	25.14
Capital-intensive industries	11.29
Technology-intensive industries	22.04
All manufacturing industries	**19.09**

Source: As Table 1.5.

1.2.6 The contribution of FDI to China's trade growth

The most direct way to measure the impact of FDI on China's trade growth is to examine the trade performance of FFEs. Table 1.7 presents the trade value and shares of FFEs in China from 1980 to 1995. As the table indicates, in terms of trade value, FFEs' trade has increased very fast from US$43 million in 1980 to US$109,818 million in 1995, at an annual growth rate of 68.71 percent. This fast trade growth has reflected both their rapid export growth and their import growth, whose annual average growth rates reached 78.32 percent and 65.13 percent respectively from 1980 to 1995.

Table 1.7 Trade value and shares of FFEs in China (1980-1995)

Year	FFEs' total (million US$)			FFEs as % of China's total		
	Total trade	Exports	Imports	Total trade	Exports	Imports
1980	43	8	34	0.11	0.05	0.17
1981	143	32	111	0.33	0.15	0.50
1982	329	53	276	0.79	0.24	1.43
1983	618	330	288	1.42	1.49	1.35
1984	468	69	399	0.87	0.26	1.46
1985	2361	297	2064	3.39	1.09	4.89
1986	3012	582	2430	4.08	1.88	5.67
1987	4330	1208	3122	5.24	3.06	7.23
1988	8203	2456	5747	7.98	5.17	10.40
1989	13709	4913	8796	12.28	9.35	14.87
1990	20120	7814	12306	17.43	12.58	23.07
1991	28954	12047	16907	21.35	16.77	26.50
1992	43726	17356	26370	26.42	20.43	32.72
1993	67070	25237	41833	34.27	27.51	40.24
1994	87647	34713	52934	37.03	28.68	45.76
1995	109818	46876	62942	39.10	31.51	47.66
Growth rate	**68.71%**	**78.32%**	**65.13%**	**47.93%**	**53.63%**	**45.61%**

Sources: Data for 1980 - 1993 are from the State Statistical Bureau (1995), *Zhongguo Duiwai Jingji Tongji Nianjian 1994* [China Foreign Economic Statistical Yearbook 1994], Zhongguo Tongji Chubanshe, Beijing, p. 164.

Data for 1994 - 1995 are from the State Statistical Bureau (1996), *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996], Zhongguo Tongji Chubanshe, Beijing, p. 596.

Another way to look at the contribution of FFEs to China's trade growth is to examine their share in China's total trade. Also as shown in Table 1.7, from 1980 to 1984 the FFEs' shares in China's total trade as well as in exports and imports were almost negligible, averaging less than 1 percent. However, after 1984 the trade share of FFEs began to increase gradually, reaching 12.3 percent in 1989. Since 1990 the trade shares of FFEs have experienced unprecedented growth, reaching 39.1 percent of China's total trade and 31.5 percent and 47.7 percent of China's total exports and imports respectively in 1995.

1.3 The Main Issues to Be Studied

The above section has outlined the key features of FDI in China. They are characterised by fast growth and huge amounts of inflow, particularly since 1992, uneven regional distribution, overwhelming dominance by developing source countries, concentration in labour-intensive manufacturing industries, and a major role in boosting China's international trade. What are the underlying causes for these special features of FDI in China? This thesis is aimed to answer these questions by focusing on analysing three main issues. These are: the location determinants, the source country differences and the impact of FDI on China's international trade. For each of these issues, we will analyse some specific questions.

Before addressing each of the main issues to be studied, we first clarify the use of FDI data in this thesis. In China's official statistics, there are two types of FDI data. One is the contracted FDI data based on the approvals of FDI projects, and the other is the realised FDI data based on the actual investments of FDI projects. The contracted FDI data are a relatively poor indicator when we use them to analyse FDI inflows into China since some of the approved FDI projects failed to be implemented and some investments are less than that specified in the approvals. To avoid such a problem and to increase the credibility of our analysis, all FDI data used in the analysis of this thesis are actual FDI data unless otherwise stated.

(1) Location Determinants

The first issue is related to the causes of FDI. Because this thesis is focused on inward FDI into China, our interest mainly lies in examining the location determinants of FDI. In this study we will analyse this from three different levels.

First, in order to compare the relative performance of China in attracting FDI inflows with that of other developing countries we will examine and test the location factors determining FDI inflows into developing countries. At this level of analysis, we ask the questions: what location factors determine the country distribution of FDI inflows from all source countries into developing host countries, and what is the relative performance of China in attracting FDI inflow as compared with other developing countries in general and as compared with other East and South-East Asian countries in particular?

Second, the provincial distribution of FDI inflows into China has been very uneven. This may reflect the regional variations in economic reform policies introduced by the central government and the regional differences in attracting FDI inflows caused by the local investment environment. The latter includes the differences in economic and social development levels, in natural resource endowments, and in cultural and historical relations with foreign investors. It is, therefore, necessary to analyse and test the location determinants affecting the provincial distribution of FDI inflows. At this level of analysis, our interest lies in answering the questions: what location factors determine the provincial distribution of FDI inflows across the provinces within China and why have FDI inflows been mainly concentrated in the eastern coastal region?

Third, in terms of the industrial distribution, FDI in China's manufacturing sector has been mainly concentrated in labour intensive manufacturing industries, and the shares of FDI in capital intensive and technology intensive industries have been relatively low. Therefore, at this level of analysis, we ask the questions: is the industrial structure of foreign funded enterprises in the manufacturing sector different as compared with that of China's domestic enterprises, and what location factors and industrial characteristics determine the pattern of the industrial distribution of FDI in China's manufacturing?

(2) Source Country Difference

One of the prominent features of FDI in China in terms of source countries is the overwhelming dominance of developing source countries. Constrained by their own overall economic development and productive technology level, the ownership advantages they possess should be different compared with those of developed source countries. As a result, one needs to ask the question whether the developing source countries behave differently from the developed source countries? Therefore, in this study we will examine the questions: are the developing and developed source countries different in their investment behaviour in terms of regional investment bias, patterns of investment, type of entry, market orientation, factor intensity and factor productivity, and if they are, then what are the general characteristics of investments by developing source countries, and further what factors explain these differences?

(3) The Impact of FDI on China's International Trade

What is the relationship between FDI and trade or, specifically, what are the impacts of FDI on China's international trade? On the one hand, FDI can accelerate China's domestic capital formation, transfer technology and bring in modern enterprise managerial skills. Therefore, we would expect that China's trade pattern would change because of the change in resource endowments as predicted by the standard H-O international trade model. In this case FDI and trade flows are substitutes for each other. On the other hand, because China's comparative advantage lies in the labour intensive manufacturing sector, the lion's share of FDI inflows into China has been in the labour intensive manufacturing sector, which tends to boost China's labour intensive manufacturing exports and promote intra-firm trade. In this case FDI and trade flows are complementary to each other. Empirical evidence from the past 16 years suggests that FDI has had a positive impact on China's international trade so that FDI and trade in China are primarily complementary rather than substitutes. Therefore, this study seeks to investigate and answer the question of what is the relationship between FDI and trade in the case of China by using empirical tests based on evidence from both the impact of FDI on China's provincial trade and on China's bilateral trade.

1.4 The Theoretical Framework

Foreign direct investment is formally defined as ownership of assets by foreign residents for purposes of controlling the use of those assets (Graham and Krugman, 1991, p. 7).[5] To analyse and understand FDI, a theoretical framework is necessary. Therefore, in this section we will first briefly review some of the leading theories used in explaining FDI, and then discuss the implications of the existing literature for the present study.

1.4.1 The theory of foreign direct investment

There are many theories seeking to explain FDI, and the most recent surveys can be found in Dunning (1993) and Caves (1996). Among these theories, however, the most influential are those based on industrial organisation explanations.

The industrial organisation explanations of FDI originate from Hymer's celebrated 1960 doctoral thesis (published in 1976). In his thesis, Hymer first distinguished the difference between portfolio investment and direct investment, and then argued that the capital-arbitrage hypothesis explaining international capital movements was inconsistent with several obvious patterns in the behaviour of multinational enterprises (MNEs) and was unable to explain the causes of FDI. In particular, he gave three reasons for his arguments. First, Hymer argued that once risk and uncertainty,

[5] According to China's official statistics, foreign direct investment includes foreign investments in equity joint ventures, contractual joint ventures, wholly foreign owned ventures, and joint exploitation, and the minimum share of foreign investment should be over 25 percent.

volatile exchange rates and the cost of acquiring information and making transactions were incorporated into portfolio capital-arbitrage theory, many of its predictions, for example, with respect to the cross-border movements of money capital in response to interest rate changes, became invalid. This was because such market imperfections altered the behavioural parameters affecting the conduct and performance of firms and, in particular, their strategy in serving foreign markets. Second, Hymer asserted that FDI involved the transfer of a package of resources including not only capital but also technology, management skills, and entrepreneurship. As a result, MNEs were motivated to produce abroad by the expectation of earning an economic rent on the totality of their resources. Third, unlike portfolio investment, the most fundamental characteristic of FDI was that it involved no change in the ownership of resources or rights transferred.

Hymer not only swept aside the capital-arbitrage explanation for FDI but also laid the foundation for a microeconomic explanation of FDI by pointing out that FDI is not randomly distributed among industries and that competitive conditions, in particular those in product markets, clearly influence FDI. Applying industrial organisation theory, Hymer pointed out that if foreign MNEs are exactly identical to domestic firms, they will not find it profitable to enter the domestic market, since there are added costs of doing business in another country, including communications and transport costs, higher costs of stationing personnel abroad, barriers due to language, customs, and being outside the local business and government networks. Therefore, Hymer argued that for MNEs to conduct foreign production they must possess some kind of firm-specific ownership advantages, such as superior technology or lower costs due to scale economies, which is sufficient to outweigh the disadvantages they face in competing with indigenous firms in the country of production. The ownership advantages may range from the possession of superior technology to ownership of a brand name. Whether the firm will exploit such advantages through licensing or FDI depends on the nature of the advantages and the degree of imperfections in the markets for the advantages it possesses. The higher the imperfections, the greater will be the tendency to undertake FDI and control operations rather than engage in arm's-length transactions.

Following Hymer, many economists have made contributions to the industrial organisation explanations of FDI. Among them the work of Kindleberger, Caves, and Dunning is particularly worthy of note. Their studies concentrated on trying to identify and assess the origins and significance of the firm specific ownership advantages which drive FDI, such as technological capacity, labour skills, industrial structure, product differentiation, marketing skills and organisational capabilities.

Another and earlier influential approach in explaining FDI was that of Vernon's product cycle hypothesis (1966). The product cycle hypothesis states that, based on the comparative advantage arising from the pattern of factor endowments, initially a product was invented in the home country with comparative advantage in technology and innovatory capabilities, and produced for the home market in the home country near to both its innovatory activities and markets. At a latter stage of the product cycle, because of a favourable combination of innovation and production advantages offered by the home country, the product was exported to other countries most similar to the home country in demand patterns and supply capabilities. Gradually, as the product becomes standardised or mature and labour becomes a more important ingredient of production costs, the attractions of siting value-adding activities in a foreign, rather than in a domestic, location increase. Eventually, if conditions in the host country are right, the subsidiary could replace exports from the parent company or even export back to the home country. The product cycle hypothesis was the first dynamic interpretation of the determinants of, and relationship between, international trade and foreign production.

In the mid 1970s some economists, for example Buckley and Casson (1976), Lundgren (1977), and Swedenborg (1979), proposed the application of internalisation theory to explain the growth of multinational enterprises based on a theory of transactions costs. As Buckley and Casson observed, for multinational enterprises to serve foreign markets through direct investment rather than alternative modes of doing business, like exporting or licensing, there must exist some internalisation advantages for the firm to do so. That is, there must be economies associated with a firm exploiting a market opportunity through internal operations rather than through external arm's-length transactions such as the sale of rights to the firm's intangible assets to other firms. These economies might be associated with costs (including opportunity costs) of contract enforcement or maintenance of quality or other standards. Buckley and Casson noted that, where these costs are absent, firms very often do use licensing or franchising as a means of serving international markets. For example, Coca-Cola franchises the right to market its products in many nations where contract enforcement is not a problem, but the firm directly controls operations in nations where enforcement is a problem.

The internalisation approach incorporates the idea of market imperfections identified by Hymer and extends it to provide an explanation for the existence of multinational firms across national boundaries. In general, it argues that, faced with imperfections in the markets for intangible assets and imperfect information, firms tend to internalise operations to minimise costs of transactions and increase productive efficiency. While this approach emphasises the importance of transaction costs resulting from market imperfections, both Buckley (1987) and Casson (1987) have acknowledged the need to integrate location-specific variables with internalisation variables to explain the MNE activities.

One organising framework was proposed by Dunning (1977, 1980, 1981a, 1981b, 1986, 1988a, 1988b, 1993), who synthesised the main elements of various explanations of FDI, and suggested that three conditions all need to be present for a firm to have a strong motive to undertake direct investment. This has become known as the "OLI" framework: ownership advantages, location advantages, and internalisation advantages.

A firm's *ownership advantage* could be a product or a production process to which other firms do not have access, such as a patent or blueprint. It could also be some specific intangible assets or capabilities such as technology and information, managerial, marketing and entrepreneurial skills, organisational systems and access to intermediate or final goods markets. Whatever its form, the ownership advantage confers some valuable market power or cost advantage on the firm sufficient to outweigh the disadvantages of doing business abroad. Although ownership advantages are firm specific, they are closely related to the technological and innovative capabilities and the economic development levels of source countries.

In addition, the foreign market must offer a *location advantage* that makes it profitable to produce the product in the foreign country rather than simply produce it at home and export it to the foreign market. Location advantages include not only resource endowments, but also economic and social factors, such as market size and structure, prospects for market growth and the degree of development, the cultural, legal, political and institutional environment, and government legislation and policies.

Finally, the multinational enterprise must have an *internalisation advantage*. If a company has a proprietary product or production process and if it is advantageous to produce the product abroad rather than export it, it is still not obvious that the company should set up a foreign subsidiary. One of other alternatives is to license a foreign firm to produce the product or use the production process. However, because of market failures in the transaction of such intangible assets, the product or process is exploited internally within the firm rather than at arm's length through markets. This is referred to as an internalisation advantage.

The generalised predictions of the "OLI" framework are straightforward. At any given moment of time, the more a country's enterprises --- relative to those of others --- possess ownership advantages, the greater the incentive they have to internalise rather than externalise their use, the more they find it in their interest to exploit them from a foreign location, then the more they are likely to engage in foreign production. The framework also can be expressed in a dynamic form. Changes in the outward or inward direct investment position of a particular country can be explained in terms of changes in the ownership advantages of it enterprises relative to those of other nations, changes in its location advantages relative to those of other countries, and changes in the extent to which firms perceive that these assets are best organised internally rather than by the market (Dunning, 1993).

1.4.2 The main implications of existing theory for the present study

In the above discussion we have reviewed the leading theories of foreign direct investment. From Hymer's seminal work to Dunning's "OLI" paradigm, scholars have made great contributions to the theory of foreign direct investment. Among them, Dunning's "OLI" framework has been the most ambitious and comprehensive explanation of FDI. It is a very useful theoretical framework for the present study.

What are the main implications of the existing theories of foreign direct investment for this present study? According to Dunning's eclectic "OLI" paradigm, which synthesises the main elements of the various explanations for FDI, the determinants of FDI can be classified into two groups, supply-side factors and demand-side factors. The supply-side factors are ownership advantages and the internalisation advantages, and the demand-side factors are location advantages.

In terms of the supply-side factors, the investment potential and investment patterns of enterprises are determined by the nature and extent of their possession of ownership advantages and the incentive to internalise the use of their ownership advantages. However, the creation and development of the ownership advantages of enterprises are closely related to their home countries' technological and innovative capabilities and the overall economic development levels. In other words, differences in their technological and innovative capabilities and in their levels of economic development will lead to differences in the ownership advantages of the enterprises of different countries. In general, enterprises from developed source countries with high technological and innovative capabilities and high overall economic development level will possess not only more ownership advantages in general but also more ownership advantages in the forms of hi-technology, product differentiation, managerial and entrepreneurial skills, and knowledge-based intangible assets in particular. In contrast, for developing source countries, because they have relatively lower technological and innovative capabilities and are at the mid-level of economic development, the ownership advantages possessed by their enterprises not only are relatively less in general but also are more concentrated in the forms of labour intensive production technology, standardised manufacture products and well established export market networks.

Because the incentives for enterprises to internalise the use of their ownership advantages through FDI depend on the nature of the ownership advantages and the degree of imperfections in the markets for the ownership advantages they possess, the more technology intensive and the higher the imperfections of the markets, the stronger the incentives for the enterprises to internalise the use of their ownership advantages through FDI and control operations. As we pointed out above, since enterprises from the developed source countries possess more technology intensive and knowledge-based intangible assets of ownership advantages than enterprises from the developing source countries, we may conclude that enterprises from developed source countries have greater incentives to internalise the use of their ownership advantages and a stronger tendency to secure control over the business than enterprises from the developing source countries.

One of our main interests in this study is to compare and analyse the differences between the developed and developing source countries investing in China. Therefore, the main implication of this discussion for our present study is that in the case of developed source countries, which have high technological and innovative capabilities and overall level of economic development and possess more ownership advantages in hi-technology and knowledge-based intangible assets, their investments in China should:

- be relatively more in technology intensive and capital intensive industries;
- adopt more capital intensive technologies in production;
- have higher labour productivity;
- be more domestic market-oriented; and
- have a higher propensity to hold the majority shares in the joint ventures and to set up wholly foreign-owned enterprises.

While for the developing source countries, being relatively low in technological and innovatory capabilities and overall level of economic development, and possessing more ownership advantages in labour intensive production technology, standardised manufacture products, and well established international export market networks, their investments in China should:

- be mainly concentrated in labour intensive industries;

- use more labour intensive technologies in production;
- have lower labour productivity;
- be more export-oriented; and
- have lower propensity to hold the majority shares in the joint ventures and to set up wholly foreign-owned enterprises.

In terms of the demand-side factors, a host country's overall attractiveness to FDI is determined by the location advantages it possesses. Because resource endowments are not evenly distributed among countries and social and economic factors as well as government policies are also different among countries, the attractiveness of host countries to FDI is different. This implies that given the supply-side factors the differences in location advantages of host countries are very crucial in determining the distribution of FDI inflows into host countries.

To facilitate the discussion of the location factors affecting FDI inflows, from the host country's point of view, we classify total FDI into two types: market-oriented FDI and export-oriented FDI.

Market-oriented FDI aims to set up enterprises in a particular country to supply goods and services to the local market. This kind of FDI may be undertaken to sustain or protect existing markets or to exploit or promote new markets. The most frequently cited reason for market-oriented FDI is tariff barriers imposed by host country governments. However, studies of the causes of FDI, such as Caves (1971, 1974a, 1974b), have shown that market-oriented FDI is most likely to originate from and to be found in these industries characterised by high product differentiation, high absolute capital costs (high barriers to entry), high economies of scale, high multiplant economies, and high entrepreneurial requirements. According to these characteristics, the market size, prospects for market growth, and the degree of development of host countries are very important location factors for market-oriented FDI. The general implication is that host countries with larger market size, faster economic growth and higher degree of economic development will provide more and better opportunities for these industries to exploit their ownership advantages and, therefore, will attract more market-oriented FDI.

Export-oriented FDI aims to use particular and specific resources at a lower real cost in foreign countries and then to export the output produced to the home country or to third countries. The most important location factors for export-oriented FDI are resource endowments. In general, the explanation for export-oriented FDI can be found in an extension of international trade theory. The principle of comparative advantage in international trade theory seeks to explain the commodity composition of trade. It assumes complete immobility of factors of production and finds an explanation of commodity composition of trade in the factor endowment ratios and preference characteristics in different countries. However, factor endowments should not be considered as rigid, especially in developing countries. Many studies have shown that a country's comparative advantage changes over time in the process of its economic development, depending on its relative performance in physical capital and human capital accumulation as compared to other countries in the world (Leamer, 1984; Anderson, 1990; and Song Ligang, 1996a). The frequently cited successful examples are the NIEs (Hong Kong, Singapore, South Korea, and Taiwan). Modifying the traditional theory of comparative advantage and allowing for the international mobility of some factors of production, for example, capital and technology, and not others like natural resources and human labour, enables location theory to determine the location decisions of FDI. In particular the differential endowment of immobile factors, strongly influences such location decisions: those countries endowed with a relative abundance of a particular immobile factor will be the location choice of the production of those commodities that use it intensively.

For the developing countries, being relatively abundant in labour resources, FDI will tend to locate in them in order to benefit from the lower wage rates. However, it should be realised that it is not low absolute wages that matter, but low efficiency wages.[6] Thus, it is those developing countries which have put great efforts in investing and developing in human capital that will tend to attract more export-oriented FDI.

Whether export-oriented FDI will tend to produce the final product or just some input depends on the degree of product standardisation and the degree to which all stages in the production process of the industry are or can become labour intensive.

This discussion of export-oriented FDI implies:

- export-oriented FDI will tend to be high in developing host countries where efficiency wages are low;

[6] We will discuss the implication of efficiency wages in more detail in Chapter 3.

- export-oriented FDI will tend to be high in developing host countries which have a comparative advantage in labour intensive manufacturing; and
- export-oriented FDI will tend to be high in the industries whose production is relatively labour intensive.

In addition to the location factors discussed above, other location factors such as relative distance, culture, language, government policy and political stability of host countries, are very important in affecting the distribution of FDI inflows into developing host countries. These will be explained further in the course of our analysis.

By applying mainly the theoretical framework of Dunning's "OLI" paradigm in explaining FDI, together with the theories of international trade and economic development, we have elaborated a number of key implications for our study. These implications will enable us to develop a set of hypotheses that may be expected to explain the distribution of FDI inflows into developing countries in general and to explain the location determinants, the source country differences and the impacts on China's international trade of foreign direct investment in China in particular. These hypotheses will be developed and tested in the following chapters of this thesis.

1.5 Structure of the Thesis

Chapter 2 is devoted to analysing China's FDI policies. It aims to provide a general policy background for the study of FDI in China. China's FDI policies are very wide ranging and complex, and it is difficult to cover all aspects in one chapter. Therefore, this chapter is mainly focused on several key policy aspects, including regional open policies, FDI laws and regulations, foreign exchange management and tax policies. These reflect not only the evolving changes but also the main features of China's FDI policies during the past one and a half decades.

Chapter 3 and Chapter 4 conduct the investigations and tests of location determinants affecting FDI inflows into developing countries and into China's provinces.

The study of location determinants in Chapter 3 is at the level of developing countries. At this level the country is the basic unit of analysis to examine the location determinants of FDI and to explain the differences of country distribution of FDI inflows into developing countries. This chapter starts with an introduction to China's performance in attracting FDI inflows in the world and particularly in the East and South-East Asian perspective. By doing so it raises the questions: what location factors determine FDI inflows into developing countries and what is the relative performance of China in attracting FDI inflows compared with other developing countries in general and compared with its Asian neighbouring countries in particular?

To facilitate the analysis and answer these questions, a "modified" gravity model is developed, which establishes and provides a theoretical norm for FDI inflows from all source countries into each of the developing host countries. Following the principle of the theoretical model, a set of hypotheses which are thought to be important location factors determining FDI inflows and are expected to explain the country distribution of FDI inflows into developing countries is developed. Based on the "modified" gravity model and the hypotheses, a regression equation is established and then an econometric test of the hypotheses is conducted by using multiple regression technique with pooled data for thirty-three developing countries over eight years from 1987 to 1994. Consequently, against the statistically tested empirical norm, the relative performance of China in attracting FDI inflows is evaluated. The question of whether or not China's relative performance in attracting FDI inflows has been especially outstanding as compared with those of other developing countries is examined. Finally, in relation to the increasing concern of some developing countries, the possibility of a diversion of FDI flows away from them into China is also examined and discussed.

Chapter 4 adopts the same analytical method developed and used in Chapter 3. But it focuses the analysis of location determinants of FDI inflows at the level of China's provinces. At this level, the analysis takes each province as the basic location for hosting FDI inflows in order to examine the provincial location determinants and to explain the differences in provincial distribution of FDI inflows within China. The chapter starts with an examination of the provincial distribution of inward FDI during the past 16 years, and reveals a situation of serious uneven provincial distribution. Why has this happened and what are the location factors determining the provincial distribution of FDI inflows into

China? To answer these questions, a set of hypotheses relating to the provincial location factors affecting FDI inflows is developed and discussed. An econometric test of the hypotheses is conducted by using multiple regression technique with pooled data for twenty-nine provinces over eight years from 1987 to 1994. Based on the regression results, the uneven provincial distribution of FDI inflows is explained. Finally, some possible policy suggestions are proposed in order to reduce the degree of the uneven provincial distribution of FDI.

Chapter 5 and Chapter 6 are devoted to the origins of FDI into China. The analysis focuses on examining and comparing the source country differences in their investment behaviour and seeks to explain the reasons causing these differences among the major investors.

Chapter 5 shifts the analysis of FDI in China from examining the location determinants towards comparing the differences in investment behaviour of source countries. It starts with identifying the major source countries investing in China, and then proceeds to compare and analyse the differences among the major investors. To facilitate the analysis, according to the technological and economic development levels, the source countries are divided into two major groups, developed source country group and developing source country group. However, in some cases to help the analysis, the developed source country group is further divided into the United States, Japan and Western European Countries (WECs), and the developing source country group is further divided into NIEs (Hong Kong, Taiwan, Singapore, and South Korea) and ASEAN (Malaysia, Indonesia, the Philippines, and Thailand). Based on the above groupings, the source country differences in investment behaviours are investigated and analysed in terms of regional investment bias, pattern of investment, type of entry, market orientation, factor intensity and factor productivity.

Chapter 6 continues the investigation and analysis of source country differences started and developed in Chapter 5. However, it turns the analysis towards examining and explaining the variations of the investment intensities of the major source countries in China. The investment intensity index reveals a sharp difference between the developed source countries and the developing source countries in terms of the relative importance of China as a host for their investments as compared with the rest of the world. What factors explain the variations of the investment intensities of the major source countries in China? Mainly based on the theory of transactions costs, a number of hypotheses are developed to explain the variations of the investment intensities. The hypotheses are tested by applying the ordinary least squares (OLS) cross-section regression techniques. Finally, based on the regression results, the chapter gives the explanations for the variations of the investment intensities of the major source countries in China.

Chapter 7 deepens the analysis of FDI in China by focusing at the level of FDI in China's manufacturing sector. It seeks to investigate and answer the questions: how important is manufacturing FDI in China's economic sectors, what is the industrial composition of FDI and what are the location factors and industrial characteristics determining the industrial distribution of FDI in China's manufacturing? The chapter starts with an investigation of the importance of manufacturing FDI in China's economic sectors, and then turns to examine the industrial composition of FDI by analysing the industrial distribution of foreign funded enterprises (FFEs) in China's twenty-nine manufacturing industries. The analysis reveals that the industrial distribution of FFEs in China's manufacturing sector is characterised by their concentration in labour-intensive and fast-growing export-oriented industries. Is this industrial structure of FFEs different from that of China's domestic enterprises (DOEs)? To answer this question, a series of Spearman rank correlation tests of the industrial structures between FFEs and DOEs is conducted, and the difference in industrial structure between FFEs and DOEs is confirmed. What location factors and industrial characteristics determine the industrial distribution of FDI in China's manufacturing? With respect to this question, a set of hypotheses based on resource endowments, industrial characteristics and government policies is developed. Consequently, an econometric test of the hypotheses is conducted by using cross-section multiple regression with a number of diagnostic tests. Finally, based on the regression results, the possible explanations of the causes for the distinguishing industrial structure of concentrating in labour-intensive and fast growing export-oriented industries of FDI in China's manufacturing sector are provided and discussed.

Chapter 8 shifts the study of FDI in China from searching for the causes of FDI inflow into China to assessing the consequences of the rapid growth of FDI on China's economy. However, among the many possible consequences resulting from FDI, this chapter focuses on the relationship between FDI and trade. The main reason for choosing this topic is not only because the relationship between FDI and trade has been a controversial issue in studies of FDI, but also because one of the main objectives of the

Chinese government in introducing FDI into its domestic economy is to boost its international trade, particularly exports, through FDI. The chapter starts with a brief review of the theories of the relationship between FDI and trade. This is followed by an introduction to China's outstanding performance in international trade since the 1980s. Then it proceeds to investigate the roles of FDI in China's international trade first through examining the contribution of FFEs to China's trade growth both at the national level and at the provincial level. The Spearman's rank correlation test reveals a positive relationship between FDI and China's provincial trade. However, to extend the investigating of the relationship between FDI and trade one step further, and based on the principle of the gravity model in explaining the magnitudes of international trade flows, two empirical models with respect to (1) China's provincial trade flows with the rest of the world and (2) China's bilateral trade flows with each of its trade partners, are established. Following the discussion of a series of hypotheses, two econometric tests of the impact of FDI on China's provincial trade and the impact of FDI on China's bilateral trade are conducted by using regression techniques with cross-section data. Finally, the chapter provides some interpretations of the regression results and gives some implications for the relationship between FDI and trade based on the empirical evidence of China.

Chapter 9 serves as the conclusion of this thesis. It summarises the main findings of this study and provides some policy implications for China's attraction and utilisation of foreign direct investment in the near future.

Chapter 2

The Evolution and Main Features of China's Foreign Direct Investment Policies

2.1 Introduction

Since 1979, China has carried out massive economic reforms aiming at the establishment of an open market economy. One of the prominent features of these reforms has been the removal of restrictions on inward FDI in the Chinese economy. From the very beginning, policy reform for FDI has been one of the most important aspects of China's overall economic reforms. For historical and ideological reasons, FDI in China was highly restricted prior to 1978. In order to achieve new objectives of industrialisation and economic development, however, China began to relax restrictions on FDI into its domestic economy at the end of 1978. Since 1979, the FDI regime has been liberalised gradually, and a series of policies and laws for FDI has been implemented, aiming at attracting a high level of FDI inflows and accelerating the transfer of technology and modern management skills, as well as at providing foreign exchange.

China's success in attracting FDI inflows into its domestic economy has been closely related to the formation and development of its legal framework and policies for FDI. To understand that success, one must first analyse and understand the evolving changes of China's legal framework and policies toward FDI. Given the total opposition to FDI during the Cultural Revolution period, this policy shift involved the abandonment of established orthodoxy and the development of an entirely new policy framework. Therefore, this chapter will analyse several key aspects reflecting the evolving changes to China's FDI policies during the past one and a half decade. It also will serve as a policy background for the economic analysis of FDI in China in the following chapters.

2.2 The Background of China's Opening up to FDI

The changes to China's policies to inward FDI reflect important political changes.[7] In 1975, when Deng Xiaoping re-emerged from political obscurity, he commissioned the drafting of a series of economic development documents designed to achieve the four modernisations.[8] Some major political initiatives of Deng Xiaoping were particularly

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[7] For a detailed discussion of the political implications of China's foreign trade and FDI reforms, see Shirk, S. (1994), *How China Opened Its Door, The Political Success of the PRC's Foreign Trade And Investment Reforms,* The Brookings Institution, Washington, D.C..

[8] The four modernisations are the modernisation of agriculture, industry, science and technology, and national defence, which were raised in the Fourth National People's Congress in January 1975.

expressed in one of the documents, "Some Questions on Accelerating Industrial Development" (Deng Xiaoping, 1984), which was drafted by the State Planning Commission and highlighted by Deng Xiaoping at a State Council meeting held to discuss the document in 1975. The document emphasised three main points. First, there was the need for China to adopt advanced technology from foreign countries and expand international trade. As Deng Xiaoping emphasised: "We should introduce new technology and equipment from other countries and expand imports and exports. Foreign countries all attach great significance to the introduction of new technology and equipment from abroad" (p. 44). Second, China should introduce and improve modern industrial management methods. As Deng Xiaoping pointed out, "industrial management is a vital issue and it must be handled well" (p. 45). Third, China should import technology and equipment for natural resource exploitation by paying with coal and petroleum. The document elaborated that "to accelerate the exploitation of coal and petroleum in our country, we may sign long-term contracts with foreign countries and fix several locations of production under condition of equality and mutual benefit and according to common practices in international trade ... so that the foreign countries can supply us with complete sets of modern equipment suitable to our needs and we can repay them with coal and petroleum which we produce" (p. 47). These and other major initiatives, as the drafters and particularly Deng Xiaoping believed, were absolutely crucial to China's successful pursuit of the four modernisations. However, these efforts were fiercely attacked by the radicals as "capitalist" and, eventually, Deng Xiaoping was removed from all his party and government posts (Wei Jia, 1994, p. 18).

It is no surprise that Deng Xiaoping re-introduced these ideas immediately after his return to power following the downfall of "Gang of Four". Furthermore, under his leadership, in late 1978 China launched its economic reforms, in which reform of the system of foreign economic interaction was, from the very beginning, one of the most important integral parts (Liu Xiangdong, He Cun, Lu Zheng, Fan Baoqing and Zhou Jie (eds), 1993, p. 864). The ideas proposed by Deng Xiaoping in 1975 to introduce and acquire advanced technology and management methods from foreign countries were further developed to allow inward FDI into China's domestic economy. Drawing on the experience of other developing countries, particularly those of the East and South-East Asian economies, in attracting and utilising FDI to accelerate the transfer of advanced technology and therefore to speed up the development of domestic economies, the Chinese leadership recognised that FDI is an effective way to acquire and master advanced technology and equipment from foreign countries quickly without having to make the heavy outlay of foreign exchange that would be involved in outright purchase. FDI is also a means of better utilising China's resources in the absence of domestic capital. Furthermore, FDI is a means of providing the Chinese with valuable experience of modern economic management skills. As a result, the Central Committee of the Chinese Communist Party and the State Council repeatedly pointed out that "China would adopt any forms commonly used in the world to utilise foreign capital to accelerate domestic economic development" (Liu Xiangdong et al., 1993, p. 864). It is fairly clear that the Chinese leadership was politically sincere in its desire to attract FDI, even though FDI might also bring some capitalist influence into China. However, as Deng Xiaoping confidently stated: "For example, technology, science - even advanced production management is also a sort of science - will be useful in any society or country. We intend to acquire advanced technology, science and management skills to serve our socialist production. And these things as such have no class character." (Deng Xiaoping, 1984, p. 333).[9]

The political endorsement for allowing inward FDI into China in the late 1970s was rationalised by the necessity of achieving a recovery from the economic disruption caused by the Cultural Revolution, and the necessity to capitalise the industrialisation program, which was launched by Mao's successor Hua Guofeng in early 1978 but later substantially revised due to "overambitious" goals. Although China had made impressive progress in the technical level of its industry after 1949 (especially the phenomenal achievements made in the aerospace industry), in 1980 the general technological level in basic industries was still fifteen to twenty years behind that of the United States, Japan, and Western Europe. In other specific fields, such as the aircraft and automotive industries, the gap was as much as twenty to thirty years. All this prompted the adoption of what is termed as the "Great Leap Outward" (*Yang Yuejin*) policy, a massive acquisition of Western machinery and technology which, unfortunately, produced the largest trade deficit in PRC's history (Chen Chuyuan, 1982, pp. 357, 452, 477). As the trade deficit built up, foreign exchange reserves were scaled down. China's foreign reserves at the end of 1979 were estimated by the Japan External Trade Organisation (JETRO) at only US$1.3 billion. This, plus an estimated value of US$2.23 billion of its holdings of gold, was equivalent to approximately five and a half months' imports from the non-communist world in 1978 (Chen Chuyuan, 1982, p. 478).[10] In addition, the

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9 The statement was made by Deng Xiaoping when he met with the Italian journalist Oriana Fallaci on August 20 and 23, 1980.

10 A different value is reflected by UN Statistical Yearbook for Asia and the Pacific, 1990.

profits of state enterprises dropped dramatically, and problems generated by the shortage of experienced engineers and the lack of infrastructure, which limited China's capacity to absorb technologies, began to surface.[11] The search for foreign capital seemed to be inevitable. A package deal that provides technology, management skills, and access to international markets, as well as capital, was naturally the best choice for China's decision-makers in resolving these immediate problems.

Evidently, the fundamental shift of the Party's political dominance from "class struggle" towards "socialist economic construction" and, even more significant, the urgent demand for economic development greatly facilitated the initial changes of China's policy to inward FDI into its domestic economy. As a result, at the second session of the Fifth National People's Congress in July 1979, the "Law of the People's Republic of China on Joint Ventures Using Chinese and Foreign Investment" was passed, granting foreign direct investment a legal status in China (Liu Xiangdong et al., 1993, p. 864).

2.3 Regional Open Policies for FDI

Following the adoption of the "Open Door policy" in late 1978 and the issue of the Equity Joint Venture Law in 1979, China established four Special Economic Zones (SEZs), Shenzhen, Zhuhai, Xiamen and Shantou, located in Guangdong and Fujian

[11] Profits dropped from 24.3 percent in 1966 to only 16.4 percent in 1978. (Chen Chuyuan, 1982, pp. 477-478).

Provinces in 1980 (Liu Xiangdong et al., 1993, p. 864). The creation of the four SEZs not only symbolised the beginning of China's economic reform but also constituted an integral part of the overall open door policy. However, the interesting question is why was it necessary to set up SEZs when China had decided to implement the open door policy nationwide? First of all, one of the political purposes of the Chinese government to promote the SEZs lay in its strategic plans to resume sovereignty over Hong Kong, which is adjacent to Shenzhen, by 1997. It was believed that the SEZs could contribute positively to the peaceful handover of Hong Kong to China. Second, the geographic proximity of the SEZs, which are the original home of many overseas Chinese, to Hong Kong, Macao, Taiwan, and ASEAN, makes it possible for China to exploit national advantages by using the overseas Chinese business network to accumulate capital, productive technology, management skills, and to get access to the international market. Third, at the very beginning of carrying out market-oriented economic reforms, the establishment of a small number of selected SEZs also served as a laboratory for China's overall economic reforms. The idea was to introduce the successful experience drawn from the actual practice of market-oriented economic reforms in a small number of SEZs into other areas and, meanwhile, to make it easily controlled if something went wrong by keeping the effects within bounds. In addition, from the perspective of their spatial diffusion effect, the establishment of the SEZs could be viewed as a pioneering effort for the more extensive operation of the uneven development strategy that was implemented in 1988. Fourth, the creation of SEZs was also aimed at providing a favourable investment environment for foreign investors, while trying out preferential foreign investment policies to be implemented at a later stage in the rest of the country. Finally, but equally important, was the reformers' strategic consideration of reducing possible political resistance from the conservatives against market-oriented economic reforms in order to carry out the overall economic reform scheme more smoothly and effectively.

Drawing on the experience of the export-processing zones established in Taiwan, Korea, and other developing countries, the SEZs in China have the multiple functions of free trade zones and export-processing zones (Liu Xiangdong et al., 1993, p. 871). The main objective of the SEZ policy was to attract FDI by offering favourable terms and a good business climate. As an initial experiment in the market-oriented economic reform, the SEZs were granted unique freedoms to manage and operate their economies on a market basis and were allowed to offer concessionary tax policies to foreign investors. Among the preferential policies for FDI firms in the SEZs, for example, all FDI firms were granted 15 percent reduction of income tax, and FDI firms engaged in production and scheduled to operate for a period of ten years or more were exempted from income tax in the first and second profit-making years and allowed a 50 percent reduction of income tax in the following three years. The FDI firms were also granted exemption from income tax on the remitted share of profits; exemption from export duties and from import duties for equipment, instruments, and apparatus for producing export products; and the easing of entry and exit formalities (Liu Xiangdong et al., 1993, p. 871). With the establishment and implementation of a series of laws, regulations, and special open policies, especially those concerning FDI firms, the SEZs were granted the highest priority and freedom for economic development.

In addition to the concessionary tax policies to foreign investors, the four SEZs and their home provinces, Guangdong and Fujian, were also awarded financial subsidies in the form of fiscal and foreign exchange revenue contracts. Beginning in 1980, Guangdong and Fujian were awarded five-year fiscal contracts permitting them to retain almost all of the taxes and industrial profits generated by firms in their jurisdiction. In contrast, the three provincial-level cities of Beijing, Tianjin and Shanghai were still required to turn over from 63 to 88 percent of their revenues. In terms of the special policy of foreign exchange retention, the SEZs were allowed to retain all of the hard currency they earned from trade, in contrast with the average of 25 percent allowed to other localities. Guangdong and Fujian also were granted special foreign exchange retention rates higher than those for other provinces (Shirk, 1994, pp. 37-38). The special financial incentives for SEZs, Guangdong and Fujian provinces not only motivated local officials to develop their local economies in a profit-oriented manner, but also greatly facilitated the export expansion and overall rapid economic growth of the SEZs and Guangdong and Fujian provinces.

The economic success and the experience with FDI in the SEZs greatly increased the confidence of the Chinese government. However, due to the small size and the specific location of the four SEZs, the desired diffusion effect was geographically limited. In addition, the pressure from other provinces in demanding the same special policies granted to SEZs increased. In February 1984 when Deng Xiaoping visited Shenzhen, Zhuhai and Xiamen SEZs, he pointed out: "for us to establish SEZs and adopt open door policies, we must have a clear guiding ideology that is not to constrain but to release". He also said: "in addition to the existing SEZs, we can consider to open several more areas and port cities, such as Dalian and Qingdao. These areas will not be named SEZs but can apply some of the special policies implemented in SEZs" (Liu Xiangdong et al., 1993, p. 865). In order to implement Deng's speech, to prove further the government's commitment to the stability, continuity, and long-term nature of the open door policy, and to tap fully the comparative advantage in encouraging the inflows of FDI, advanced technology, and management skills, in May 1984 the Chinese government announced the opening up and extension of the concept of SEZs to another fourteen coastal cities and Hainan Island (Liu Xiangdong et al., 1993, p. 865).[12] These coastal open cities and the SEZs virtually form a coastal belt which, from a geographical viewpoint, is important not only for linkage with foreign markets but also for its wider connection with the massive domestic inland areas. First, this coastal belt physically constitutes a significant portion of the Pacific Rim, which makes it well positioned, from north to south, to attract FDI from Japan, South Korea, Taiwan, and the South-East Asian countries, as well as from the United States, Canada, and Europe. With their relatively more sophisticated existing labour force, technical capabilities, and infrastructures, it was hoped that quicker, better and more sustainable returns in terms of capital formation, technological progress, structural transformation, and overall economic development would be gained, and at lower cost (Wei Jia, 1994, p. 62).

The coastal open cities were permitted to offer tax incentives for FDI firms similar to, but less generous than, those offered in the SEZs. The coastal open cities, however, were encouraged to establish "Economic and Technological Development Zones" (ETDZs) that could offer terms as generous as those offered in the SEZs. The tax incentives offered to the FDI firms in the coastal open cities include mainly: (1) 15

[12] The fourteen coastal cities are: Dalian, Qinhuangdao, Tianjin, Yantai, Qingdao, Lianyungang, Nantong, Shanghai, Ningbo, Wenzhou, Fuzhou, Guangzhou, Zhanjiang, and Beihai.

percent income tax reduction which is only to FDI firms that are technology or knowledge intensive and intend to develop energy, transportation and ports construction, to those that have an investment exceeding US$30 million with a low profit margin, or to those productive-type projects set up within the ETDZs; (2) 20 percent income tax reduction that applies to those FDI firms that do not meet the foregoing requirements yet are involved in one of the categorised sectors, including machine building, electronics, metallurgy, chemicals, building materials, light industry, textiles, packaging, medical equipment, pharmaceutical, construction, agriculture, forestry, animal husbandry, aquaculture, and related processing industries; (3) exemption from customs duties, import taxes, and value-added tax (VAT) with respect to production and management equipment, raw and semifinished materials, components, spare parts and packaging materials for producing export products, and communications and office equipment (Liu Xiangdong et al., 1993, p. 872). These tax incentives plus the local government's infrastructure investments, in areas such as transport, water and electricity, telecommunications, and special land use privileges, proved to be a great inducement to foreign investors.

The encouragement to establish the ETDZs in the coastal open cities has several basic considerations. First, drawing from the experience of the first four SEZs, the ETDZs were encouraged to build infrastructure and provide energy, communications, and other basic public facilities necessary for production and new technology development enterprises. This can greatly improve the investment environment and facilitate the economic development of the open cities. Second, by offering parallel investment incentives in the ETDZs along the coastline from north to south, foreign investors were provided more opportunities to locate their ventures where the transaction cost was least. Third, by expressly designating the goals of the ETDZs, the Chinese government wanted to make it clear that, while the coastal open cities should effectively utilise FDI and foreign technologies to improve and upgrade the industrial and technical capabilities of the existing firms and gradually spread out to the inland areas, their primary objective was to concentrate on the establishment of more technology intensive productive projects through FDI.

From the perspective of regional development and the intended eventual diffusion effect, the coastline belt is believed able to spread its direct and indirect influence to the immediate inland and more regions (Liu Xiangdong et al., 1993, p. 872). Indeed, for all inland provinces, the coastal belt provides a window through which economic vitality in utilising FDI can be transmitted back to the home provinces in the form of investment, technology transfer, information services, and the training of personnel.

In order to attract further FDI and to speed up the diffusion process, in May 1985, three "development triangles" --- the Yangzi River Delta Region (around Shanghai), the Pearl River Delta Region (around Guangzhou), and the Minnan Delta Region (around Xiamen) --- were designated as coastal economic open areas and granted most of the FDI preferential policies implemented in the fourteen coastal open cities (Liu Xiangdong et al., 1993, p. 865). Following the trend, the expansion continued to include Liaodong and Shandong peninsulas as coastal economic open areas in 1988 (Liu Xiangdong et al., 1993, p. 875). These developments were intended primarily to spread benefits from SEZs and coastal open cities to the surrounding regions. It was also an effort to accommodate the growing interest of foreign investors, either because of simple proximity or because of historical linkages, to establish or expand their operations in China. Indeed, as our analysis in Chapter 5 will show the major investors have strong regional investment biases. In the Pearl River Delta Region, ethnic ties play an important part in the location decisions of investors from Hong Kong, Macao, and the South-East Asian countries, while in the Minnan Delta Region, more Taiwan investors are involved. On the other hand, South Korea and Japanese companies apparently find both the Liaodong and Shandong peninsulas more attractive, while the Yangzi River Delta Region, with its relatively more developed economy and superior foreign connections, is the destination of most large corporations of the United States, Europe, and Japan.

In order to realise further the potential in attracting FDI and develop an externally-oriented economy, in early 1988 another large step towards expanding the open policies for FDI, termed the "coastal development strategy", was taken by the Chinese government to extend the open policy to the entire coastal areas, with a total population of over 200 million. The document on "coastal development strategy" jointly issued by the Chinese Communist Party Central Committee and the State Council states that "we must continue to expand the open policies, accelerate the development of externally-oriented economy in the coastal areas, and actively participate in international exchange and competition, so that the economic development and prosperity of the coastal areas can bring the development of whole national economy" (Liu Xiangdong et al., 1993, p. 866). In this policy, the then Party General Secretary Zhao Ziyang defended the concept of unbalanced growth by arguing that economic and cultural differences between the coastal and inland areas made it impossible for all parts of the country to develop at the same speed; therefore, the coastal areas should be allowed to move ahead by using their better labour, communications and infrastructure, and scientific and technological capacity to attract foreign business and expand exports (Shirk, 1994, p.40). The "coastal development strategy" stressed two main points. First, it would develop labour-intensive industries in the coastal area, and second, these labour-intensive processing industries must base their products for export on imported raw materials. This is described by Zhao Ziyang as "two heads outside, large in and large out" (*liangtuo zai wai, da jin da chu*). This strategy effectively brought all eleven coastal provinces and municipalities together to acquire foreign capital, technology, raw materials and international market opportunities. It enabled China to take advantage of its abundant cheap labour endowment and to increase significantly the ability of its manufacturing sectors to compete in the international market.

With the implementation of the "coastal development strategy", many special open zones were established in the coastal provinces and municipalities. In particular, Hainan Island became a province and China's fifth --- and the largest --- SEZ in April 1988, and later the concepts of SEZ and ETDZ were extended to the Shanghai Pudong New Economic and Technological Development Area in June 1990 (Liu Xiangdong et al., 1993, pp. 866, 873).

The implementation of the uneven regional open strategy to FDI, from the SEZs to coastal cities and then to the entire coastal areas, has enabled the coastal region to gain more benefits than other regions, not only in the form of fiscal priority and foreign exchange earnings, but also in the acquisition of capital, technology, modern management skills, and the opportunity to access the international market. It is also true that there have been some beneficial effects on the inland economy. However, not only has the process of diffusion from the coastal region to the inland areas been slow, but also the outflow of skilled workers, technical personnel, and capital from the inland areas to the coastal region has been increasing. Perhaps, more important is that the coastal region has been getting more freedom in economic decision making from the central government than the inland regions. Consequently, the gap of economic development and income level between the coastal region and the inland areas has enlarged since the late 1980s (Wei Jia, 1994, p. 65). To deal with these problems, in the 1990s the Chinese government gradually moved the implementation of the open policies for FDI toward a more level playing field throughout China. This major policy move was especially enhanced by Deng Xiaoping's call for deeper, faster and wider economic reform and liberalisation (Liu Xiangdong et al., 1993, p. 866).

In the Spring 1992, during his famous tour to the southern coastal economically opened areas and SEZs, Deng Xiaoping explicitly declared his support for the successful economic development assisted by foreign direct investment and expressed a desire to see the pace of liberalisation quickened. Deng Xiaoping's landmark visit set the scene not only for a decisive move away from a command economy in favour of a market-oriented economy, but also for a move from the uneven regional priority toward nationwide implementation of open policies to FDI. Consequently, the Chinese government reaffirmed the adherence of the open door policy and launched another massive drive to attract FDI (Liu Xiangdong et al., 1993, pp. 866, 869).

To facilitate the implementation of this policy, a series of measures with regard to FDI have been taken not only to improve the existing unfair competition between the coastal and inland regions, but also to make more concessions to attract foreign investors. First, the application of preferential policies to FDI will gradually shift from regional priority to accommodating national and local industrial development policies. For example, as long as they are in line with state or local industrial policy and involve high or new technology, any FDI project is entitled to the same preferential treatment as applied in the ETDZs, regardless of its location. Second, fifty-two cities, including all the inland provincial capitals (except Lhasa in Tibet and Urumqi in Xinjiang) and the major cities along the Yangzi River, became open to foreign investors. The preferential policies granted to the fourteen coastal cities will also be applied in these cities. Third, more than fifteen border cities and counties in the south-west, north-west, north and north-east of China were declared open border cities. Some were authorised to offer coastal FDI preferential policies, while others were mandated to reopen or expand their existing border trade ties with neighbouring countries or to set up economic development zones. Fourth, some service industries, such as aviation, telecommunication, banking and retail trade, were opened to FDI participation in a limited and experimental fashion. For example, some designated coastal cities are allowed to host FDI banking, finance, and retail entities. Shanghai, as a major commercial centre, is also permitted to host a FDI insurance company. Fifth, to develop further foreign trade and processing industries in the coastal areas, more bonded zones are to be established. Sixth, the government allows foreign business people, either those with an intention to set up FDI firms in a later stage or land developers, to buy land use rights for building infrastructure facilities, including residential, commercial, industrial, and recreational real estate (Liu Xiangdong et al., 1993, pp. 868-870; United Nations, 1994, p. 68; Wei Jia, 1994, p. 67). As a result, with the implementation of these new policies, during the first nine months of 1992, almost 2,000 economic development zones were set up, and a large proportion of them were located in inland areas (Shirk, 1994, p. 41).

The economic development zone policy was extremely popular throughout China, since the local officials saw it "not only as a way to gain access to international business but also as a means of gaining benefit and privilege" (Shirk, 1994, p. 41). As a result, the establishment of economic development zones eventually went out of control. By early 1993 as the press reported "nobody knows exactly how many such zones, which attract foreign investment with a variety of tax breaks and other favourable policies, have been launched in China."[13] The uncontrolled spread of economic development zones created some unintended negative consequences, such as economic overheating; shortages of funds, energy, transport, and raw materials; the appropriation of good farmland for factories; and competitive cutting of tax rates and land prices to attract foreign investors (Shirk, 1994, p. 42). All of these led to the 1993 rectification of all existing economic development zones and the requirement of central approval for all new economic development zones in order to solve the above mentioned problems and ensure the healthy development of FDI.

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[13] Yin Xin, "Government to Tighten Restrictions on Zones," *China Daily Business Weekly*, February 7, 1993, p. 1, in *FBIS, China*, February 9, 1993, p. 33. According to this source, the State Economic Planning Commission estimates 1,700 zones, the State Council SEZ Office, 1,800, the State Land Administration, 2,700, and the Ministry of Agriculture, 9,000. The first three figures include zones at the national (95), provincial, and city level; the last one includes those at the township level. Even the People's Liberation Army has its own national development zone located in the Shantou SEZ. "PLA Inaugurates Economic Development Zone," Xinhua News Agency, February 12, 1993, in *FBIS, China*, February 12, 1993, p. 17. Cited from Shirk, S. (1994), p. 41.

The Chinese approach of gradually extending regional openness to FDI has proved relatively successful in a number of aspects. First, the selective establishment of SEZs, beginning with a small number and gradually adding more, effectively gained nationwide support for the market-oriented economic reform drive. Second, the fast economic growth and development in SEZs and the coastal provinces not only provided the Chinese government with valuable experience in market-oriented economic reform, but also produced strong demonstration effects to the inland areas. Third, the increasing economic ties between the coastal and the inland regions created significant benefits for both regions. However, the increasing inequalities between the coastal and the inland regions due partly to the implementation of the uneven regional development strategy to FDI cannot be ignored. Therefore, it seems necessary for the Chinese government to offer more preferential policies to the inland areas to help them attract FDI. As mentioned above the recent development of a strategy to open the areas alongside the borders, alongside the river, and alongside the coast is clearly a demonstration of this effort. However, one should not conclude that the uneven development strategy has been entirely discarded. In essence, the evolution of the strategy has been in the expansion from the coast to the inland, especially along the Yangzi Valley. The emerging pattern is one in which the coast, the Yangzi Valley, and all the inland provincial capitals develop more quickly and act as channels for capital, technology, and information for their respective hinterlands, but the former still rely largely on the latter for labour, energy, and materials. Thus, we will see a constant spread of the stimulative effects of FDI through the expansion of industrial activities to additional regions of the country.

2.4 The Evolution of China's FDI Laws and Regulations

The entry of foreign direct investment can take three forms, namely equity joint venture, cooperative joint venture and wholly foreign owned venture. In general, China's approach to the management of these three types of foreign funded enterprises (FFEs) has passed from restriction and control to encouragement and regulation in three broad phases.

The First Phase 1979-86

The first phase, from 1979 to early 1986, was mainly marked by the adoption of the "Law of the People's Republic of China on Joint Ventures Using Chinese and Foreign Investment" and its Implementing Regulations, and by the issue of the "Regulations of the People's Republic of China on Special Economic Zones in Guangdong Province".

The Equity Joint Venture Law issued in 1979 was China's first law permitting and governing the establishment and operations of foreign economic entities in its territory since 1949. The law contains only fifteen articles and is more like a series of political declarations allowing the legal entry of FDI and providing a statutory basis for the establishment of joint ventures on Chinese territory. The Equity Joint Venture Law explicitly states that the establishment of a joint venture must be "on the principle of equality and mutual benefit" and that "all the activities of a joint venture must be governed by the laws, decrees and pertinent rules and regulations of the People's

Republic of China".[14] Although the Equity Joint Venture Law is too general, with a few basic principles, it does provide a fundamental guideline for the establishment, operation, management, and termination of joint ventures. To improve the shortcomings of the Equity Joint Venture Law and also to accommodate the needs of foreign investors, in 1983 the Chinese government issued the "Implementing Regulations for the Law of the People's Republic of China on Joint Ventures Using Chinese and Foreign Investment".[15] Compared with the Equity Joint Venture Law, the implementing regulations provided greater details on all aspects of joint venture operations. The adoption of the implementing regulations greatly improved the investment climate and increased the confidence of foreign investors.

The issue of the SEZ regulations in 1980 not only announced the creation of the four SEZs but also permitted the establishment of wholly foreign owned enterprises within them. As the SEZ regulations state "in order to develop external economic cooperation and technical exchanges and promote the socialist modernisation programme, in the special economic zones, foreign citizens, overseas Chinese, compatriots in Hong Kong and Macao and their companies and enterprises are encouraged to open factories or set up enterprises and other establishments with their own investment, and their interests shall be legally protected" (Chu Baotai, 1987, p. 79).

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[14] "Law of the People's Republic of China on Joint Ventures Using Chinese and Foreign Investment", in Chu Baotai (1987), *Foreign Investment in China: A Question and Answer Guide*, China International Economic Consultants, Inc. and University Publisher & Printer, Hong Kong, pp. 241-243.

[15] "Implementing Regulations for the Law of the People's Republic of China on Joint Ventures Using Chinese and Foreign Investment", in Liu Xiangdong, He Cun, Lu Zheng, Fan Baoqing, and Zhou Jie (eds) (1993), *Zhongguo Duiwai Jingji Maoyi Zhengce Zhinan* [Guide to China's Foreign Economic and Trade Policies], Jingji Guanli Chubanshe, Beijing, pp. 1000-1011.

Unlike the joint ventures, which the Chinese government seemed to have greater confidence in dealing with and was willing to launch on a national scale, the wholly foreign owned enterprises were a lot more problematic ideologically and politically. Therefore, wholly foreign owned enterprises were only permitted in the SEZs in the initial stage of China's foreign investment drive. To allow wholly foreign owned enterprises to operate in the areas beyond the SEZs, China first had to allow the coexistence of a private sector in its socialist economy. Following a long lasting and hot debate,[16] finally in 1984 the Chinese government formally announced that the private sector is a supplementary part of socialist economy, and granted the private economy legal status. With this major policy shift, the first wholly foreign owned enterprise outside the SEZs was set up in Shanghai by 3M Company of the United States in 1984 and commenced operation in 1985 (Chu Baotai, 1987, p. 79). By the end of 1985, four months prior to the issue of the Law of the People's Republic of China on Enterprises Operated Exclusively with Foreign Capital, more than 120 wholly foreign owned enterprises had been established, with a total investment of approximately US$570 million (*Beijing Review*, May 5, 1986, p. 16).

[16] During 1983 and 1984, several policy investigation teams were sent out by the central government to selected provinces, I was twice sent to Liaoning province, where the private economy developed very fast, especially in the rural areas, to investigate the situation, development, and social and economic effects of the private economy, in order to provide first hand materials and policy suggestions to the central government to make policies for the private economy.

The Second Phase 1986-90

In 1986, two important legal documents were issued by the Chinese government. One was "The Law of the People's Republic of China on Enterprises Operated Exclusively with Foreign Capital", and the other was the "Provisions of the State Council of the People's Republic of China for the Encouragement of the Foreign Investment". The adoption of these two laws symbolised the beginning of the second phase in the evolution of Chinese regulatory framework.

After a trial period, in April 1986, "The Law of the People's Republic of China on Enterprises Operated Exclusively with Foreign Capital" was passed at the Fourth Session of the Sixth National People's Congress. The Law specifies that "China permits foreign firms, other economic entities or individuals to set up enterprises exclusively with foreign capital in China and protects the lawful rights and interests of wholly foreign-funded enterprises".[17]

The issue of the Foreign Enterprises Law was needed by both the foreign investors and the Chinese side. From the perspective of foreign investors, as some studies (Powell, 1987; Stein, 1987; Behrman, 1988; et al.) revealed, there are a lot of reasons for foreign investors to prefer to create wholly owned ventures over joint ventures. However, two are the most important. One is to maintain maximum operating independence from Chinese participation and, therefore, to have a high degree of control

[17] "The Law of the People's Republic of China on Enterprises Operated Exclusively with Foreign Capital", in Chu Baotai (1987), *Foreign Investment in China: A Question and Answer Guide*, China International Economic Consultants, Inc. and University Publisher & Printer, Hong Kong, pp. 260-262.

over financing, marketing, pricing, the production schedule, quality control, purchase of materials, technology employed, and even external relations of various subsidiaries. Another important reason is to access fully all corporate resources and technology from the parent company and more effectively to protect their technologies. This point is especially important when the foreign enterprises are in technology intensive industries.

From the Chinese perspective, among the determining factors, there are also two most important reasons to allow the establishment of wholly foreign owned enterprises. The first important reason is to increase China's competitiveness in the world FDI market by providing foreign investors with more entry alternatives to invest in China. This is particularly important considering the growing initiatives of other developing countries, especially the East and South-East Asian countries, to attract FDI. The second important reason is to accelerate the introduction of new and high-technology products through local production by wholly foreign owned enterprises. This is consistent with China's industrial and technological development strategy, since it can both enhance China's technological development and reduce foreign exchange expenditure through import substitution.

Following legal permission for the operation of wholly foreign owned enterprises on a nationwide scale, another major policy move towards favouring FDI was taken by the Chinese government in order to attract more FDI inflows into its domestic economy. Like any developing country, China was well aware of the importance of adopting policies to attract and to control FDI properly. Incentives for FDI were mainly offered in the form of tax holidays, tax reductions and import tax exemption. However, the growing and sustainable competitiveness of neighbouring Asian countries for FDI, combined with their liberalisation measures, was a real concern to China in its efforts to attract FDI. In order to improve the investment environment, to increase its competitiveness, and also to accommodate the interests of foreign investors, in October 1986, China issued the "Provisions of the State Council of the People's Republic of China for the Encouragement of the Foreign Investment". The provisions were intended "to improve the investment environment, facilitate the absorption of foreign direct investment, introduce advanced technology, improve product quality, expand exports in order to generate foreign exchange and develop the national economy".[18] The provisions offered a series of incentives to FDI, of which the more important ones included: (1) encouraging foreign investors to set up equity joint ventures, cooperative joint ventures and wholly foreign owned ventures within China's territory; (2) granting special preferences to "export-oriented" and "technologically advanced" foreign-funded enterprises, including reduction of land use fees and certain subsidies to be paid to labour, preferential tax treatment, and priorities in obtaining water, electricity and other infrastructure services in short supply; (3) establishing a limited foreign currency exchange market for foreign-funded enterprises; and (4) guaranteeing the right of autonomy of foreign-funded enterprises in management and production decision-making (Chu Baotai, 1987, pp. 263-266). The adoption of the Encouragement Provisions was a major effort by the Chinese government to encourage FDI by offering incentives. It also

[18] "Provisions of the State Council of the People's Republic of China for the Encouragement of the Foreign Investment", in Chu Baotai (1987), *Foreign Investment in China: A Question and Answer Guide*, China International Economic Consultants, Inc. and University Publisher & Printer, Hong Kong, pp. 263-266.

demonstrated increased willingness to make greater accommodation for FDI activities through regulatory means.

In order to implement the Encouragement Provisions more effectively, the central government issued implementing regulations, and as a combined effort the local governments at provincial and municipal levels subsequently also issued similar regulations. In 1988, nearly nine years after the issue of the Equity Joint Venture Law, the Cooperative Joint Ventures Law was finally adopted (The Editorial Board of the Almanac of China's Foreign Economic Relations and Trade, 1989, pp. 102-103). The second phase witnessed both a rapidly growing body of FDI laws and regulations and a great improvement of the FDI regulatory framework. Obviously, the evolving changes from control toward a more liberalised FDI regime have strongly demonstrated the Chinese government's commitment to the establishment of a more consistent and systematic FDI regulatory framework.

The Third Phase 1990-present

In the early 1990s, the Chinese government further liberalised FDI policies and amended and established a series of laws and regulations aiming to achieve a more rapid and healthy development of FDI inflows into China. In 1990, the Amendments to the Equity Joint Venture Law and the Wholly Foreign Owned Enterprise Implementing Rules were adopted. This marked the beginning of the third phase of development. For the Amendments to the Equity Joint Venture Law, two significant changes are worth mentioning. The first is the abolition of the stipulation that the chairman of the board of a joint venture should be appointed by Chinese investors, and the second is the provision of protection from nationalisation (The Editorial Board of the Almanac of China's Foreign Economic Relations and Trade, 1991, pp. 100-101). The Wholly Foreign Owned Enterprise Implementing Rules, based on the principles of the Wholly Foreign Owned Enterprise Law, provide a complete legal structure to facilitate the actual performance of these enterprises.

China's efforts in establishing regulatory legal framework for FDI continued. As a result, a series of laws and regulations relating to FDI were adopted after 1991, including the Foreign Investment Enterprise and Foreign Enterprise Income Tax Law, the Copyright Law, the Software Protection Regulations, the Patent Law Amendments, the Trademark Law, the Corporation Law, the Regulatory Provisions of Foreign Banks, the Securities Exchange Law, the Banking Law, and the Foreign Exchange Control Regulations.[19]

In 1994, the Chinese government implemented measures to reduce two problems related to inward FDI: over-valuation and round-tripping. In general, about 70 percent of FDI inflows into China are equipment and technology (United Nations, 1995, p. 59). To translate the amount of these investments into cash tends to overvalue the amount of FDI. The motives behind over-valuation include: a larger share of dividends for the

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[19] These laws and regulations can be found in the various issues of the Editorial Board of the Almanac of China's Foreign Economic Relations and Trade, *Zhongguo Duiwai Jingji Maoyi Nianjian* [Almanac of China's Foreign Economic Relations and Trade], Zhongguo Shehui Chubanshe, Beijing, and in Liu Xiangdong, He Cun, Lu Zheng, Fan Baoqing, and Zhou Jie (eds) (1993), *Zhongguo Duiwai Jingji Maoyi Zhengce Zhinan* [Guide to China's Foreign Economic and Trade Policies], Jingji Guanli Chubanshe, Beijing.

foreign investors than for the Chinese partners, resulting from the higher equity share of foreign investors compared with their local partners; lower taxes arising from larger capital expenditures and depreciation credits; and more management control. Over-valuation reduces the potential contribution of FDI to the development of the Chinese economy. It lowers tax revenues for the government, as well as the share of revenues accruing to the local partners in joint ventures. For dealing with the problem of over-valuation, the State Administration for Import and Export Inspection and the Ministry of Finance jointly promulgated the "Administrative Procedures for Appraising Foreign Invested Property" in early 1994 and began to monitor more closely the fulfilment of contractual commitments with respect to the actual value and quality of equipment in FDI projects.

Round-tripping involves the circular flow of capital out of China (in most cases to foreign affiliates of Chinese transnational corporations) and the subsequent "re-investment" of this "foreign" capital in China for the purpose of benefiting from fiscal entitlements accorded to foreign investors. By round-tripping, Chinese investors avoid the regulatory regime governing domestic investment by channelling capital through foreign affiliates and thereby bringing this capital under the more favourable regime governing foreign investment. One estimate made by Harrold and Lall suggested that round-tripping inward FDI accounted for 25 precent of China's FDI inflows in 1992 (Harrold and Lall, 1993, p. 24). Policy reform aimed at equalising the treatment of domestic and foreign capital, in particular the ongoing reduction of tax incentives for FDI and, more generally, the gradual movement towards a national treatment based regulatory regime governing investment, will substantially reduce the incentive for round-tripping.

In June 1995, the Chinese government issued the "Provisional Regulations on Guiding Foreign Investment" (SWB, June 29, 1995).[20] The regulations were formulated in order to provide guidance for foreign direct investment towards sectors which suit China's national economic and social development plan, and protect the lawful rights and interests of foreign investors in accordance with relevant state laws governing foreign direct investment and the requirements of state industrial policy. The regulations classify foreign direct investment into "encouraged", "permitted", "restricted" and "prohibited" categories (see Box below for more details). According to the regulations, China is now encouraging both a greater geographic dispersion of FDI inflows within China and more FDI inflows into targeted economic sectors and industries, such as agriculture, resource exploitation, infrastructure, and export-oriented and high technology industries. This means that China has become more selective in terms of the type of FDI that it seeks. However, many developing countries are progressively abandoning this practice in favour of more market-oriented policies which recognise that a host country can secure the full benefit from FDI only when market distortions are minimised.

The third phase of the evolution of China's FDI laws and regulations from early 1990 up to now has been marked by the rapid development of a systematic regulatory framework to facilitate and to regulate FDI. Three characteristics of the third phase

[20] Also see APEC, (1996), *A Guide to APEC Investment Regimes (3rd ed.)*, APEC Secretariat, Singapore.

Sectoral Restrictions in China's Foreign Direct Investment Policy

Encouraged

(1) agricultural new technologies, comprehensive development of agriculture, and the building of energy sources, communications and important materials industries;

(2) new or advanced technologies which can improve the quality of products, conserve energy and raw materials, raise technological and economic efficiency of enterprises, or can manufacture products to alleviate the shortage of such products in the domestic markets;

(3) projects that meet the needs of the international market, raise the grade and quality of products, open up new markets, or expand and increase exports;

(4) investments related to comprehensive use of renewable resources and new technologies and equipment for environmental protection;

(5) investments that can give full play to the advantages of labour and natural resources in the central and western regions.

Permitted

foreign direct investments that are not under the categories of encouraged, restricted and prohibited are permitted.

Restricted

(1) projects which have been developed domestically, projects the technology of which has been imported and projects the production capacity of which can meet domestic demand;

(2) trades in which the state is still experimenting with utilising foreign investment in sectors where a state monopoly still exists;

(3) projects involving the prospecting and exploitation of rare and valuable mineral resources;

(4) trades that must be put under the overall plan of the state;

(5) other projects restricted by state laws and administrative regulations.

Prohibited

(1) projects that endanger state security or harm social and public interest;

(2) projects that pollute and damage environment, destroy natural resources or harm people's health;

(3) projects that use up large tracts of farmland, that are not beneficial to the protection and development of land resources, or that endanger the security and the effective use of military facilities;

(4) projects that manufacture products by applying China's special industrial arts or technology;

(5) other projects that are prohibited by state laws and administrative regulations.

distinguish it from the previous phases. First, emphasis has been placed on the creation and development of a more consistent and systematic regulatory framework. Second, more efforts have been made to create and amend the legislation over the protection of intellectual property rights. Third, more willingness has been shown to coordinate and to accept international rules and requirements for FDI.

2.5 Foreign Exchange Management Relating to FDI

After 1949, China created a foreign exchange control regime, aiming to maintain balanced international revenue and expenditure. However, the adoption of the Open Door policy in general and the introduction of FDI in particular have posed challenges to this regime and led to gradual changes to China's foreign exchange management from a tight control system to a more liberalised regime.

Under China's foreign exchange control regime, FDI firms are required to keep a balance between their foreign exchange receipts and expenditures. In practice, the regulations are implemented through requiring FDI firms to open a *Renminbi* (RMB) deposit account and a separate foreign exchange deposit account with either the Bank of China or another bank approved by the State Administration for Exchange Control (SAEC). All foreign exchange receipts and disbursements must flow through the foreign exchange account. Because the RMB is not convertible into foreign exchange, this rule effectively requires FDI firms to generate all foreign exchange needed for the remittance of dividends, expenditures and other distributions. Although the Chinese government recognises that the foreign exchange balance is a critical operating issue for most FDI firms in China, there are several basic reasons to explain why the Chinese government adopted such a foreign exchange management policy towards FDI firms at the risk of jeopardising the effectiveness of its fiscal incentives offered to FDI firms. The first reason seems to be very obvious that the Chinese government wants to protect its foreign exchange reserves. The second reason is to encourage FDI firms to export their products and further to help improve China's overall trade balance. The third reason is to promote localisation of FDI firms so as to speed up the transfer of technology and upgrade China's manufacturing capabilities. With these basic reasons behind China's foreign exchange policy for FDI firms, it was not surprising that little assistance to FDI firms to meet this constraint was available from the Chinese government prior to 1986.[21]

A lack of ability to convert RMB profits to foreign currency for repatriation made foreign investors increasingly worry about their prospects of doing business in China. This also gradually became a major concern for the Chinese government and led to the adoption of the Foreign Exchange Balance Provisions and the Encouragement Provisions in 1986 to facilitate FDI firms mainly in their efforts to solve the foreign exchange problems. The two provisions offered the following options to help FDI firms to balance their foreign exchange accounts (Liu Xiangdong et al., 1993, pp. 892-898).

[21] The Chinese government did give some foreign exchange assistance to some of the top-priority, high-profile FDI firms, such as Shanghai Volkswagen and Beijing Jeep Corporation, to keep them going without having to shut down. However, it did not have enough resources and provided little alternatives to assist other FDI firms which were also facing a foreign exchange crisis in their operations.

(1) Domestic sales of sophisticated products

This option is designed to provide temporary relief for FDI firms with limited foreign exchange by allowing them to sell sophisticated products produced by advanced or key technology provided by the foreign partners on the domestic market. This option is applied on a product-by-product basis. Therefore, the viability of the option depends on the sophistication of the technology provided by the foreign partner and the availability of a potential buyer of the products on the domestic market.

(2) Foreign exchange adjustment

This option provides the opportunity to a foreign investor who establishes two or more ventures in China to adjust foreign exchange accounts through balancing the surplus in one venture with the deficit in another. The feasibility of this option depends largely on the agreement of all parties, particularly when the joint ventures involve different Chinese partners. Adjustment could be arranged either as a swap, in which case these ventures are actually buying and selling foreign exchange at a rate on which they agree, or as a parallel loan, without charging interest from each other.

(3) Reinvestment of RMB profits

This option allows foreign investors to reinvest their RMB profits in Chinese domestic enterprises as an equity owner with a plan to begin or expand export production. Foreign exchange earned from such exports is allowed to be distributed to these RMB investors for repatriation. However, the effectiveness of this option largely depends on the export performance of the invested enterprises.

(4) Domestic products export

This option allows FDI firms to purchase domestic products and sell them abroad. However, the resale of domestic goods that are subject to export quotas, under central administration and require an export license is not allowed unless special approval is granted by the Ministry of Foreign Trade and Economic Cooperation (MOFTEC). The purpose of this option is to enable foreign investors to use their existing distribution networks in the international market to solve a temporary foreign exchange problem. Therefore, a limit is set on the approved quantity of domestic products to be purchased for export by FDI firms within the amount needed for the shortfall in its operation of the year plus a necessary amount for profit repatriation.

(5) Government assistance

The Foreign Exchange Balance Provisions state that direct assistance by means of foreign exchange allocation is the responsibility of the jurisdiction that granted the original approval of a given project. However, this option is subject to two preconditions. First, the government is only responsible for a foreign exchange imbalance that is obviously not the direct result of a venture's failure to fulfil its contractual obligations for exports and the generation of foreign exchange. Second, the government shall consider direct assistance only when it is necessary. As a result, although this option provides the FDI firms with the possibility of government direct assistance, the feasibility of the direct assistance depends almost entirely on government decisions and sometimes on the particular circumstances.

(6) Mortgage RMB on foreign exchange

This option provides the foreign investors with the opportunity to obtain a RMB loan from the Bank of China and other banks designated by the People's Bank of China for working capital or for investment in fixed assets through depositing an equivalent value of foreign exchange as a security. By adopting this option, foreign exchange that may have been converted into RMB can be kept by the FDI firms for other purposes.

(7) Import substitution

This option allows FDI firms to sell import substitutes on the domestic market to solve their foreign exchange problems. According to the Import Substitution Measures, a product which may be confirmed as an import substitute must meet the following conditions: (1) the product is equipped with advanced technology needed by the country, and the producer is facing temporary difficulties in balancing its foreign exchange account in the initial period of operation in the process of increasing the local content of its product; (2) the relevant product must be one that is presently imported and will continue to be imported by the central or local governments; (3) the specifications, performance, and delivery time of the product and the technical and training services that are offered must meet the requirements of the domestic purchaser. Furthermore, the product must reach international quality standards. Because of these requirements, it is very clear that only technologically advanced FDI firms are eligible to apply for import substitution status.

(8) Foreign exchange swaps.

Undoubtedly, the above options have greatly improved the situation of foreign exchange management of FDI firms. However, balancing foreign exchange will continue to be a problem until the RMB becomes convertible. A significant move made in this direction was the establishment of foreign exchange swap centres. Since the first foreign exchange swap centre was established in Shenzhen in 1985, more than one hundred foreign exchange swap centres have been opened. In 1992 the first national level foreign exchange swap market was established in Beijing. FDI firms were first allowed to participate in transactions on the foreign exchange swap centres in late 1986 following the issue of the Encouragement Provisions. Since then the foreign exchange swap markets have become the major and the more direct resort of FDI firms to balance their foreign exchange accounts. As a result, foreign exchange balancing has become a much less important issue for FDI firms.

Evidently, the reform of China's foreign exchange management is moving toward a more liberalised regime in general and toward a greater facilitation of FDI firms in particular. Beginning in 1994, China conducted a new round of foreign exchange management reform. Three major changes are worth mentioning. First, China for the first time since 1949 abolished the official exchange rate and adopted a unified market floating exchange rate published daily by the central bank based on the previous closing rate in a foreign exchange market participated in by 18 designated Chinese banks and nearly 100 foreign banks doing business in China. Second is the establishment of a foreign exchange market for financial institutions which is expected to provide and stabilise the market exchange rate, improve liquidity, and help eliminate the black market. Third is the abolition of the foreign exchange quota retention system.

Obviously, the single exchange rate system, a stable foreign exchange market, and a relatively efficient arrangement of foreign exchange demand and supply through the market mechanism will have a strong and positive impact on the process of RMB convertibility. As a result, in December 1996, the Chinese government announced that it would adopt IMF Article 8, removing all remaining restrictions on foreign exchange transactions three years ahead of its original target. As the first step, RMB would be convertible on current account from the start of December 1996. This includes all payments for international goods and services trade, repayments of loans and profit remittance. It also binds China not to introduce discriminatory currency practices or multiple currencies in the future. This is an important step which will improve the authorities' ability to use indirect monetary policy instruments to adjust external balance and stabilise the RMB (*Financial Times*, November 29, 1996). It will also greatly assist China's international traders and foreign investors.

2.6 Tax Policies for Foreign Direct Investment

Since the early 1980s, the evolution of China's tax policies for FDI has passed through three distinct periods.

The First Period 1980-90

The first period was characterised by the initial offering of tax concessions in the SEZs leading to the greater promotion of tax incentives throughout the nation. Before 1984, the initial tax concessions offered to foreign investors were mainly reflected in three tax laws, namely the Equity Joint Venture Income Tax Law, the Foreign Enterprise Income Tax Law, and the Industrial and Commercial Tax Regulations.

The initial tax concessions offered in the Equity Joint Venture Income Tax Law (see Table 2.1)[22] included tax holidays for newly established joint ventures that were scheduled to operate for a period of ten years or more, including a total tax exemption for the first two years commencing from the first profit-making year and a 50 percent reduction for the three subsequent years. There was an additional 15 to 30 percent reduction in income tax for an additional ten years for certain types of joint ventures in remote and poor areas; and a refund of 40 percent of the income tax paid on the reinvested funds for any joint venture partner that reinvested its share of profits for a period of at least five consecutive years. Also included were the authorisation of a local

[22] The Equity Joint Venture Income Tax Law also applied to cooperative joint ventures created as a legal entity.

tax exemption or reduction when local governments found this appropriate, and finally, loss carry-forward was allowed to be taken into account in determining the first profit-making year and in calculating taxable incomes.

Table 2.1 Equity joint venture income tax (pre-1984)

Taxpayer	Tax Base	Tax Rate
Equity Joint Venture	Net income derived from production, business operation and other sources.	33 %
Foreign equity holder	After-tax equity profits that are to be remitted out of China.	10 %

Sources: The Joint Venture Income Tax Law and its implementing rules. Cited from Wei (1994), p. 80.

The tax incentives included in the Foreign Enterprise Income Tax Law (see Table 2.2)[23] were mainly: a tax exemption for the first profit-making year and a 50 percent reduction in the tax for the following two years for enterprises engaged in agriculture, forestry, animal husbandry, and other low-profit operations, including deep-pit mining operations; an additional tax reduction of 15 percent to 30 percent, if approved by the Ministry of Finance, for an additional period of ten years; the authorisation of tax exemption or reduction of local taxes, when the local government found appropriate, for enterprises having an annual income of less than RMB 1 million; and loss carry-forward was also allowed for a maximum of five years.

[23] The Foreign Enterprise Income Tax Law also applied to wholly foreign owned enterprises and the foreign partners in the cooperative joint ventures in which each partner retains its identity in joint operations.

Table 2.2 Foreign enterprise income tax (pre-1984)

Taxpayer	Tax Base	Tax Rate
Foreign enterprises with establishment in China	Income from production, business operations, and other sources.	Progressive rate schedule, from 20% on the first RMB 250,000 of taxable income for the year to 40% on income in excess of RMB 1 million, plus an additional 10% for local income tax.
Foreign enterprises without establishment in China	Income from dividends, interests, rental, royalties, and other sources.	A flat rate of 20%.

Sources: The Foreign Enterprise Income Law and its implementing rules. Cited from Wei (1994), p. 81.

The tax concessions offered in the Industrial and Commercial Tax Regulations (see Table 2.3) mainly were exemptions for the importation of machinery, equipment, spare parts, and materials by China-foreign offshore oil exploration and extraction joint operations for their own business use.

Table 2.3 Consolidated industrial and commercial tax (pre-1984)

Taxpayer	Taxable Activities	Tax Base	Tax Rate
FDI firms and foreign firms	Production of industrial products, importation of foreign goods, commercial retailing, communications, and provision of services.	Sales for manufactured products, gross receipts for services rendered, and purchase price for imports and agricultural products.	Forty-two different rates from 1.5% on certain basic necessities to 69% on top-quality cigarettes.

Sources: The Industrial and Commercial Tax Regulations and Various Ministry of Finance notices. Cited from Wei (1994), p. 79.

In 1984, with the extension of the special policies for FDI from the SEZs to the fourteen coastal cities, the Chinese government issued the SEZs and the Coastal Cities Tax Reduction and Exemption Regulations. The regulations offered further tax concessions to foreign investors. The main features of the tax reduction and exemption are shown in Table 2.4. The primary objective of the 1984 tax regulations was to attract more FDI inflows into China, and at the same time, to facilitate the implementation of the uneven regional development strategy through tax incentives to affect the location decision of foreign investors and, therefore, to influence the spatial distribution of FDI inflows into China.

Table 2.4 Main features of the 1984 tax regulations

Location	FDI National Income Tax	Local Income Tax	Tax on Profits for Repatriation
SEZs	15 %	Exemption or reduction possible.	Exemption
ETDZs in the 14 coastal cities	15 %	Exemption or reduction possible.	Exemption
Old urban areas of the 14 coastal cities and those of Shantou, Zhuhai, & Xiamen	15% if an investment exceeds US$30 million with a low profit margin, or involves intensive technology or knowledge, or develops energy, transportation, or ports; a 20% reduction over the regular tax due for firms that do not meet the above requirements but are in one of the designed sectors.	Exemption or reduction possible.	No exemption or reduction

Sources: The 1984 SEZs and Coastal Cities Tax Reduction and Exemption Regulations.
Cited from Wei (1994), p. 85.

In 1986, further tax incentives were offered to the technologically advanced and export-oriented FDI firms under the Encouragement Provisions (see Table 2.5). Obviously, the aim of the Chinese government was to incorporate the tax incentives with its regional economic development and industrial development strategies. This reflected the government growing concern over the relationship between FDI inflows into some economic sectors and industries and the overall goals of national economic and technological development.

Table 2.5 Tax incentives under the 1986 encouragement provisions

Type of Firms	Income Tax	Tax on Profits for Repatriation	Tax Refunded
Technologically advanced firms	50% further reduction for three years after the expiration of the initial period allowed for reduction and exemption.	Exemption	100% refund for income tax paid on the reinvested portion if reinvestment allows an operational period of no less than five years.
Export-oriented firms	50% further reduction after the expiration of the initial period allowed for reduction and exemption, if it exports 70% or more of its annual products.	Exemption	100% refund for income tax paid on the reinvested portion if reinvestment allows an operational period of no less than five years.

Sources: The Encouragement Provisions and the Ministry of Finance's Tax Rules.
Cited from Wei (1994), p. 86.

With the implementation of the Encouragement Provisions in 1986, and particularly with the adoption of the "coastal development strategy" in 1988, attracting FDI through offering tax incentives become very popular throughout China. From 1987 to 1990, local governments competed with each other to offer tax incentives for attracting FDI. In most cases, the local governments extended the period and added categories under which FDI firms were entitled to various tax concessions for business income tax. Some local governments also offered unauthorised concessions in industrial and commercial tax, and particularly, they granted more tax exemptions and reductions for Taiwanese investment and increased the income tax refund on reinvestment (Wei Jia, 1994, p. 86). However, the "tax concession war" proved to be ineffective in influencing foreign investors' location decisions. Conversely, it created an impression in the minds of foreign investors that China had unstable and inconsistent tax policies, which was detrimental to the Chinese government's persistent efforts to create a sound tax climate. As a result, the State Administration of Taxation (SAT) had to order the local governments to delete or to revise all tax provisions not mandated by national legislation, in order to provide a consistent and sound tax climate for FDI.

The Second Period 1991-93

The adoption of the Foreign Investment Enterprise and Foreign Enterprise Income Tax Law and its implementing rules on July 1, 1991 marked the beginning of the second period of the evolution of China's tax policies to FDI. This law has many significant features (see Table 2.6). First, it offers tax incentives to the manufacturing sector in general, and to infrastructure and agriculture in particular. Second, the law for the first

Table 2.6 Foreign investment enterprise and foreign enterprise income tax (implemented July 1, 1991)

Taxpayer	National Income Tax Rate	Local Income Tax Rate	Exemption and Reduction
FDI firms	30%; 15% for productive firms in the SEZs and the ETDZs; 24% for productive firms in the old urban areas of the cities in the coastal development zones (15% if involves energy, ports, transportation, or other priority projects).	3%; exemption and reduction are possible.	2 years exemption plus 3 years 50% reduction for productive firms scheduled to operate for 10 years or more; further 10 years reduction of 15-30% for firms in agriculture, forestry or husbandry, or located in specified areas; tax exemption for profits for repatriation.
Foreign enterprises with establishment in China	30%; 15% for those having establishments or sites.	3%; exemption and reduction are possible.	
Foreign enterprises without establishment in China	20%; a reduced 10% or even exemption for royalties derived from technology transfers that relate to specific areas.		

Sources: The Foreign Investment Enterprise and Foreign Enterprise Income Tax Law and its implementing rules. Cited from Wei (1994), p. 89.

time ensures that all the tax incentives apply to all FDI firms, regardless of their form, as long as they are in the designated industries or areas and satisfy other requirements. Third, in order to prevent FDI firms from transfer pricing, the standards of "fair market price” and “regular business practices” are employed to curb tax evasions through transfer pricing. Fourth, the law grants income tax exemption to all FDI firms, which effectively puts all the FDI firms on a level-playing field as compared to the pervious provisions in which only the FDI firms in the SEZs and ETDZs were granted such tax concessions.

In general, from the early 1980s’ initial offer of tax concessions to the adoption of the Foreign Investment Enterprise and Foreign Enterprise Income Tax Law in the early 1990s, China has continuously and selectively used tax incentives as “economic levers” to guide FDI into its designated regions, economic sectors, and manufacturing industries. However, the question is how effective are these tax incentives in attracting FDI?

Admittedly, these tax incentives in general have had a certain positive impact on attracting FDI inflows into China. However, some tax incentives are more effective than others, some have more impact on one group of investors than on another, and some are in fact ineffective.

First, the tax incentives granted to technologically advanced and exported-oriented enterprises, and the tax concessions offered to FDI firms engaged in low-profit operations or located in remote and poor areas, are undoubtedly rational not only from the perspective of China’s needs to introduce advanced technology, to expand international exports, and to encourage the inflows of capital and technology into the targeted regions and sectors, but also from the perspective of foreign investors’ preferences to give full play their comparative advantages and to diversify their foreign operations.

Second, the tax refund on reinvestment has a large influence on decisions by foreign investors to reinvest their profits, particularly when such profits are distributed in RMB terms.

Third, the tax incentive package of the two years' exemption plus three years 50 percent reduction on income tax to joint ventures operating for at least ten years has a stronger impact on cheap labour-seeking, export-oriented FDI (a group of resource-seeking FDI) than on market-seeking or strategic-seeking FDI. The cheap labour-seeking FDI, because its primary goal is to lower production costs and to make profits as soon as possible, has a strong short-term profit motive that can be induced by tax exemptions or reductions. As a result, the tax incentive package has greater impact on the initial investment decisions of the cheap labour-seeking, export-oriented FDI. In contrast, market-seeking FDI and strategic-seeking FDI in general have a long-term profit expectation which can hardly be influenced by short-term tax holidays. Their initial investment decisions are mainly determined by the host country's overall investment climate and their own global expansion strategy. Therefore, the tax incentive package has small impact on the initial investment decisions, and has no influence on the length of operations of the market-seeking FDI and the strategic-seeking FDI once they have made their investments in China.

Fourth, following the above discussion, we will see that the tax incentive package offered in the form of tax holidays has greater impact on investors from Hong Kong, Macao, Taiwan, and other East and South-East Asian countries (mainly the overseas Chinese investors) than on investors from developed countries. The overseas Chinese investors are usually modestly capitalised and possess middle-level technology mainly for labour-intensive activities. These are more easily motivated by low labour cost and short-term profits. Therefore, the favourable tax concessions plus low labour costs and the advantages of cultural and geographical proximity with China have a greater impact on the initial investment decisions of the overseas Chinese investors to start or shift their operations into China. Unlike the overseas Chinese investors, most of the investors from the developed countries are Multinational Enterprises (MNEs). These generally have advanced technology, superior technical capabilities, larger scale, and greater geographical diversification. Their initial investment decisions are usually determined by the overall investment environment of host countries, the long-term profit expectations and their own strategic global business expansion. For example, Guisinger and associates in their empirical studies of investment incentives influencing FDI location decisions revealed that, for the United States and Japanese computer companies, "investment (FDI) is accomplished for quite basic economic or strategic reasons: for example, to lower costs of production or distribution, to better serve existing markets, and to achieve better international diversification possibilities. Investment analyses in the typical computer company do not even consider incentives until what are thought to be more fundamental decision elements are completely satisfied. Then and only then will the effects of financial incentives be calculated" (Guisinger, 1985, p. 228). Therefore, in general, the developed country investors are inelastic to short-term tax concessions. As a result, the tax incentive package has less effect on the initial investment decisions of the developed country investors particular the large MNEs, as compared with the overseas Chinese investors.

Fifth, the exemptions and reductions of the local income tax should be a location determinant affecting foreign investors' location decision when they make their investments in China. However, since almost all the provinces competed with each other to attract FDI by offering local income tax exemptions and reductions, consequently, this tax incentive turned to be ineffective because it produced no specific location difference for the foreign investors in terms of local tax concessions. In fact, the competition among provinces in offering tax incentives to foreign investors created a situation which is well-known as a "prisoner's dilemma". As Guisinger pointed out: "In the market for foreign investment, a prisoner's dilemma arises among countries when one country's increase in incentives is matched by increased incentives from a competitor. A point will be reached when the incentive levels stabilise and no country will be better off: unchanged relative incentives will produce the same market share as before. Indeed, both countries may be worse off because income is transferred to firms with no gain in market share" (Guisinger, 1985, p. 38).

Finally, let us examine the effectiveness of these tax incentives on FDI in China from the aspect of different taxation systems adopted by source countries. There are two taxation systems prevailing in the world. One is the "territorial taxation system" and the other is the "global taxation system". Under the territorial system, a citizen or subsidiary earning income abroad needs to pay tax only to the host country governments, in other words, the home country government does not tax the income of its citizen or subsidiaries abroad. Whereas, under the global system, the home country government does tax the income of its citizen or subsidiaries but grants a tax credit for taxes paid to host country governments. A complication of the effect of tax incentives on FDI arises under the tax credit system.

According to the global taxation system, subsidiaries of foreign firms pay income taxes to the host country governments based on the tax laws of the host countries. However, when they repatriate income to their parent companies, they are liable to taxation at the home countries' rate, with a credit for any taxes paid to the host country governments. In the normal practice of the credit system, only taxes actually paid to the host country governments are allowed to be credited by the home country government. This raises the problem that when a host country offers tax concessions, a foreign subsidiary is effectively prevented from benefiting from these tax incentives under the tax credit system. The taxes exempted in the host country would not go to the foreign subsidiary, but rather to the home country government. The result is that not only the tax concessions are ineffective on the investment decisions of the foreign investors from the countries with a tax credit system, but also the host country governments lose the tax revenues which would be paid to them if they had not offered the tax concessions.

Since China has offered substantial tax exemptions and tax reductions to FDI firms, and also because some of China's major foreign investors are subject to the global taxation with tax credit system, such as the United States, Japan, and the United Kingdom, to avoid such an ineffective result, China has successfully negotiated a "tax-sparing" provision into tax treaties with its FDI source countries that allows a credit for taxes spared by China's tax concessions against the home country's tax levied on income.[24] However, the United States consistently refuses to include a "tax-sparing" provision in its tax treaties with any country. The traditional justification for the United States to adhere to this policy is the principle of capital export neutrality, since the tax-sparing credit may favour certain foreign investment over domestic investment. Based on this tax policy, the United States' overseas investors have to pay a certain amount of the tax forgone by their host countries. This has put the United States' subsidiaries in a disadvantageous position and effectively reduced their competitiveness compared to FDI firms from source countries who recognise the tax-sparing credit. In addition, this tax policy will create an incentive to defer profit repatriation and, in the case of China, to take the advantage of the tax refund on reinvestment funds to reinvest their profits in China. In general, the tax incentives offered by the Chinese government in the form of tax exemptions and tax reductions have virtually no effect on the investment decisions of the United States' investors.[25]

[24] The Chinese government has signed agreements on the avoidance of double taxation and prevention of evasion of tax with the following countries: Japan, the United States, France, the United Kingdom, Belgium, former Federal Republic of Germany, Malaysia, Norway, Denmark, Singapore, Finland, Canada, Sweden, New Zealand, Thailand, Italy, Netherlands, Czechoslovakia, Poland, Australia, Yugoslavia, Bulgaria, Pakistan, Kuwait, Switzerland, former Soviet Union, Cyprus, Spain, Romania, Austria, Brazil, Mongolia, Hungary, Turkey, Malta, South Korea, and Indonesia.

[25] However, if the United States' subsidiaries do not repatriate their profits to their parent companies located in the United States and, instead, reinvest the profits in China or send the profits to another subsidiary located in a third country, the tax incentives in the form of exemptions and reductions are still effective to their investment decisions.

The Third Period 1993-present

In 1993, China announced two important decisions relating to FDI firms. First, combined with China's efforts to get into the World Trade Organisation (WTO), China decided to introduce national treatment for FDI firms in order to establish a level-playing field for both domestic and FDI firms and also to meet the requirements of WTO regulations (*People's Daily*, Overseas Edition, April 26, 1993, p. 1). Second, China decided to change fundamentally its old taxation system and adopt a new taxation system. These two major policy changes marked the beginning of the third period of taxation policy development.

With the gradual implementation of national treatment, FDI firms and domestic enterprises will be given equal treatment. As a pioneer, Shenzhen implemented the national treatment policy in 1996. According to the regulations worked out by the Shenzhen government, preferential policies including tax incentives given to FDI firms will no longer be offered. While this FDI policy change may improve the regulatory framework in the longer term and help to overcome jealousy among domestic enterprises and abuse of the system (such as 'round-tripping'), it also reduces the degree of preferential treatment for foreign investors, which might discourage some foreign investors in the short term. However, the continuing fast growth of aggregate FDI inflows into China, the more diversified sectoral distribution of FDI, and the geographical expansion of FDI into inner regions since the implementation of national treatment have shown that the positive effect of national treatment on foreign investors is much stronger than the suggested short term discouragement to FDI inflows into China.

Combined with the implementation of national treatment, China adopted a new taxation system in the beginning of 1994. The new taxation system, which includes Value-Added Tax, Consumption Tax, Business Tax and Individual Income Tax, took effect on January 1, 1994 and applies to both domestic enterprises and FDI firms. In order not to increase the tax burden on FDI firms established prior to 1994, a five-year grandfather refund system was set up so that the actual tax burden on FDI firms under the new taxation system would not exceed the level they would have paid under the old taxation system. However, the five-year grandfather refund system does not apply to FDI firms established after 1993. Combined with the implementation of the new taxation system, there are also changes in the tariff-free treatment granted to FDI firms on their imported equipment and construction materials. The new rules stipulated that FDI firms established after April 1, 1994 will pay import taxes on imported equipment and construction materials. For FDI firms established prior to April 1, 1994, the tariff-free treatment on imported equipment and construction materials was extended to December 31, 1996 for projects under US$30 million, and was extended to December 31, 1997 for projects over US$30 million (CGAC, 1996). In order to encourage long-term foreign investment growth, the tariff-free treatment for imported capital goods for FDI firms established before April 1, 1994, has been further extended to December 31, 1997 and July 1998 for FDI projects under and over US$30 million respectively (*China Daily Business Weekly,* April 13 - April 19, 1997, p. 1).

Obviously, from the early 1980s up to now, China's tax policies for FDI have been shifting from the initial tax concessions gradually toward a more rational and consistent tax system. It is not difficult to see that with the progress of the implementation of national treatment and the linking up with the international tax disciplines, China will provide a more consistent tax climate for the operations of FDI firms.

2.7 Conclusion

During the last one and a half decades, China's change of attitude from restricting to encouraging inward FDI has been fully reflected by the evolution of its FDI policies. These moved from restriction and control to encouragement and regulation. In all the policy aspects relating to FDI as we discussed in the above sections, the Chinese government has been taking a positive but gradual reform approach. Despite the limitations, in general this reform process relating to FDI has proved relatively successful. As the following discussion will show, it has also been reflected in the nature and growth of FDI.

Admittedly, China has achieved substantial progress in its FDI policy reform within a relatively short period. However, comparing China's current FDI policy to APEC's investment-related principles,[26] there is still room for China to further liberalise its FDI regime in order to attract foreign investors and benefit from FDI in the long run.

[26] See Bora, B. and E. Graham (1995) for more on APEC Nonbinding Investment Principles, and Green, C. and T. Brewer (1995) for discussion of Asia-Pacific investment issues.

Table 2.7 APEC nonbinding investment principles and China's foreign direct investment policy regime

Principle	China's FDI Policy
Transparency	• Extensive laws, regulations and guidelines relating to investment • Approval required for all types of investment proposals • Requires significant documentation in the application process • No specified time period for processing
Most favoured nation status	• Gives no preferences relating to the establishment, expansion and creation of foreign investment
National treatment	• Extensive restrictions in various sectors. Move toward national treatment for incentives, which still favour foreign investors.
Repatriation of profits & currency convertibility	• Extensive regulations related to the type of investment • Currency convertibility for trade and investment achieved in December 1996
Entry and sojourn of personnel	• Application process to obtain a visa
Taxation	• Eight different taxes affect FDI firms. Moves to uniform treatment.
Performance requirements	• Exist in some industries, particularly for exports. Since China is not a member of the WTO, it is not bound by the WTO's Trade-related Investment Measures (TRIMs) provision.
Capital exports	• Review and notification required for all overseas investment
Investor behaviour	• Observance of law by foreign investors is explicit in Chinese constitution
Expropriation and compensation	• Subject to a social and public interest clause • Has signed bilateral investment protection agreements
Dispute settlement	• Has internal arbitration, conciliation and litigation options, and is a signatory of the International Centre for the Settlement of Investment Disputes (ICSID) convention since 1992
Incentives	• A wide range of incentives, but gradually moving to national treatment

Source: EAAU (1997), *China Embraces the Market, Achievements, Constraints and Opportunities*, EAAU, Department of Foreign Affairs and Trade, Canberra, Australia.

Table 2.7 presents an indicative list of China's current FDI policy relating to APEC's investment-related principles. While the APEC Nonbinding Investment Principles are limited in extent, they do reflect foreign investment policy in the region and indicate the issues facing developing countries throughout the world as they attempt to address investment impediments. The principles target two key specific government actions: performance requirements and incentives. China uses both to guide FDI into targeted areas and sectors. As Table 2.7 shows, China's current FDI policy needs to be further improved on each principle, particularly on two of the three fundamental principles of international investment: transparency and national treatment.[27]

As regarding the principle of transparency, many Asian countries have adopted the "one-stop shop" concept, which is a simplified and transparent process for filing and processing applications for foreign investment approval.[28] This facilitates implementation of investment proposals and reduces foreign investors' administrative costs. China, on the other hand, still maintains a very complex application process, which needs to be simplified and made more transparent through further policy reform.

National treatment, the equal treatment of foreign and domestic investors, is the cornerstone of any set of principles underpinning foreign investment policy. Since the

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[27] The third principle is nondiscrimination, but APEC has subscribed to this in an unconditional manner. Also, as a point of clarification, the right of establishment is usually considered a fourth international principle. However, the APEC nonbinding investment principles could not separate this principle from national treatment. As a result, national treatment applies to the establishment, expansion and operation of foreign firms.

[28] In APEC (1995a), South Korea is singled out as a good example of a country that has adopted and implemented this initiative.

Chinese government granted tax incentives to FDI firms, usually the foreign investors have been treated more favourably than domestic investors. The application of national treatment will therefore level the playing field between foreign and domestic firms. China has decided to introduce national treatment and the experiment has been tried out in Shenzhen since 1996. However, if it is too vigorous in removing FDI incentives, China may find itself disadvantaged compared with its regional competitors for FDI, which may discourage China's initiative to introduce national treatment. As Guisinger pointed out: "If one country were to eliminate its incentives while others maintained theirs, the country's share of foreign investment projects might decline substantially" (Guisinger, 1985, pp. 38-39). Therefore, the successful application of national treatment not only depends on a single country's effort but also depends on other countries' participation.

In this chapter we have examined the evolution and the main features of China's inward foreign direct investment policies implemented since 1979. As we pointed out in the beginning of this chapter, to study FDI in China, one must have a good knowledge and understanding of the evolving changes of China's legal framework and policies toward FDI. The analysis in this chapter provides a policy guideline for the following studies in this thesis. We now turn to the analysis of specific questions of foreign direct investment in China.

Chapter 3

The Location Determinants of Foreign Direct Investment in Developing Countries

3.1 Introduction

Since the late 1980s and especially in the early 1990s, China has received a huge amount of FDI in absolute terms. Its share both in the world total FDI inflows and in the total FDI inflows into developing countries has increased rapidly. China's success in attracting FDI into its domestic economy in recent years has caused concern in many other developing countries that the huge amount of FDI inflow into China may represent a diversion of world FDI away from them.

However, China is large, and large countries normally receive a large amount of FDI inflow. Has China really received more FDI inflow from the world than it should have, based on its economic and geographical characteristics? To answer this question we have to investigate the location determinants affecting FDI inflows into developing countries and establish an empirical norm of the magnitude of aggregate FDI inflows from all source countries into a developing host country. Against the empirical norm, we can investigate the relative performance of China and other developing countries in attracting FDI and answer whether or not China has attracted more FDI inflow than its potential.

Therefore, this chapter is designed to investigate and answer two key questions. First, what are the location determinants affecting FDI inflows into developing countries? Second, what is the relative performance of China in attracting FDI inflows as compared with other developing countries in general and as compared with its neighbouring Asian countries in particular?

The chapter is structured as follows. Section 3.2 provides a brief overview of FDI inflow into China from a world perspective. Section 3.3 sets out the problems which we will study in this chapter. Section 3.4 discusses the analytical framework and derives the basic model. Section 3.5 discusses a number of hypotheses concerning the location determinants affecting FDI inflows into developing countries. Section 3.6 tests these hypotheses and gives the basic findings of the regression results. Section 3.7 investigates the relative performance of China and other developing host countries in attracting FDI inflows by comparing their actual FDI inflows with the model's predictions. Finally, section 3.8 summarises the findings of this chapter and raises the questions which we will study in the next chapter.

3.2 China's FDI Inflow in Perspective

3.2.1 An overview of the world FDI inflows in the past decade

During the past decade, the general trend of world FDI inflows can be divided into two phases. As shown in Table 3.1 and Figure 3.1, prior to 1990, world FDI inflows increased rapidly. This fast growth in world FDI inflows was mainly the result of FDI inflows into developed countries, though FDI inflows into developing countries also experienced a mildly increasing trend.

However, world FDI inflows declined steeply in 1991 for the first time since 1982 and only returned to the 1990 level in 1993. This sharp decline in the world FDI inflows was entirely caused by the steep decline of FDI inflows into developed countries and was mostly a consequence of poor economic performance resulting from a cyclical downswing in economic activity. Though FDI inflows into developed countries began to increase again in 1993, the amount of FDI inflows into developed countries in 1994 was still 30 percent lower than in 1990 and was only equivalent to the 1988 level.

Despite the decline of the world total FDI inflows and the inflows into developed countries in the early 1990s, FDI inflows into developing countries continued to grow, particularly during 1992-94. As noted by the *World Investment Report*, the outstanding feature of world FDI inflows during the early 1990s was the considerable increase into developing countries (United Nations, 1994, p. 9). Consequently, the amount of FDI inflows into developing countries reached US$84 billion in 1994, increasing 150 percent compared with 1990, and the share of developing countries in the world total FDI inflows increased from 16.4 percent in 1990 to 37.4 percent in 1994. The recovery of world FDI inflows in 1992-94 was therefore mainly the result of the FDI inflows into developing countries.

Table 3.1 FDI inflows in the World, DCs, LDCs and China, 1981-1994 (millions of US dollars at current prices)

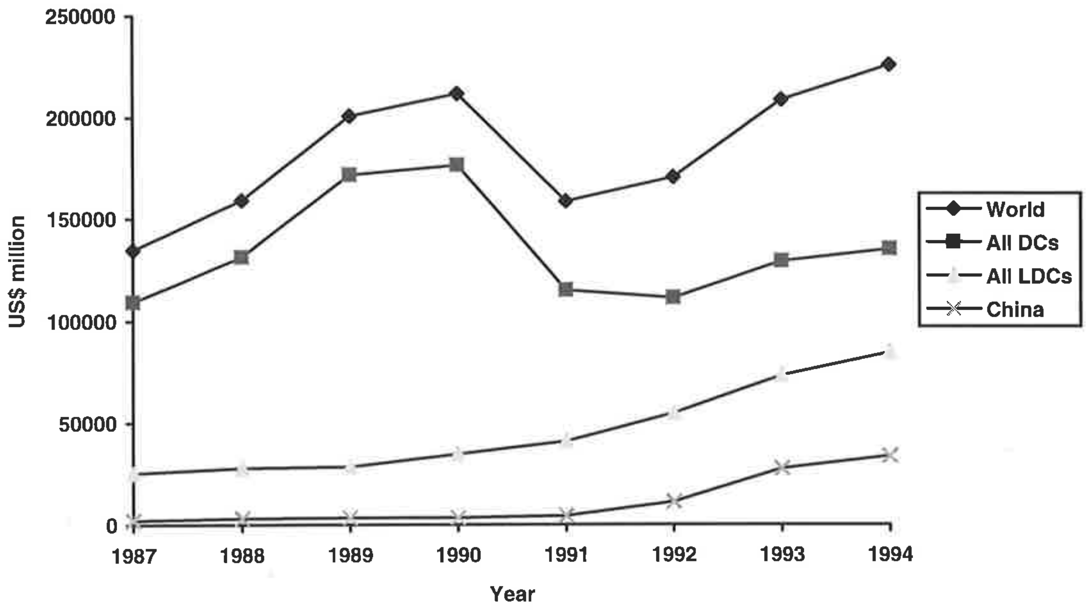
Year	World Total	All DCs	All LDCs	China
1981-86 (annual average)	55084	41797	13271	1021
1987	134771	109455	25303	2314
1988	159101	131313	27772	3194
1989	200612	171722	28622	3393
1990	211425	176436	34689	3487
1991	158428	115092	40889	4366
1992	170398	111223	54750	11156
1993	208388	129073	73350	27515
1994	225692	134984	84441	33800

Sources: Data for 1981-1986 annual average and 1987 are from the United Nations (1993), *World Investment Report 1993: Transnational Corporations and Integrated International Production,* United Nations Publication, United Nations, New York and Geneva, Annex Table 1.

Data for 1988 are from the United Nations (1994), *World Investment Report 1994: Transnational Corporations, Employment and the Workplace,* United Nations Publication, United Nations, New York and Geneva, Annex Table 1.

Data for 1989-1994 are from the United Nations (1995), *World Investment Report 1995: Transnational Corporations and Competitiveness,* United Nations Publication, United Nations, New York and Geneva, Annex Table 1.

Figure 3.1 FDI inflows in the World, DCs, LDCs and China (1987-94, current prices)



Source: As Table 3.1.

3.2.2 China's FDI inflow in the global perspective

What has been the position of China in the world FDI inflows since it started to attract FDI into its domestic economy after 1978? As shown in Table 3.2 and Figure 3.2 from 1981 to 1991 China's shares in world total FDI inflows and in FDI inflows into all developing countries were around 2 percent and 10 percent respectively with minor annual fluctuations. However, in 1992 China's shares both in the world total FDI inflows and in the inflows into all developing countries increased dramatically, reaching 6.5 percent and 20.5 percent respectively. Further, in 1993, FDI inflows into China were

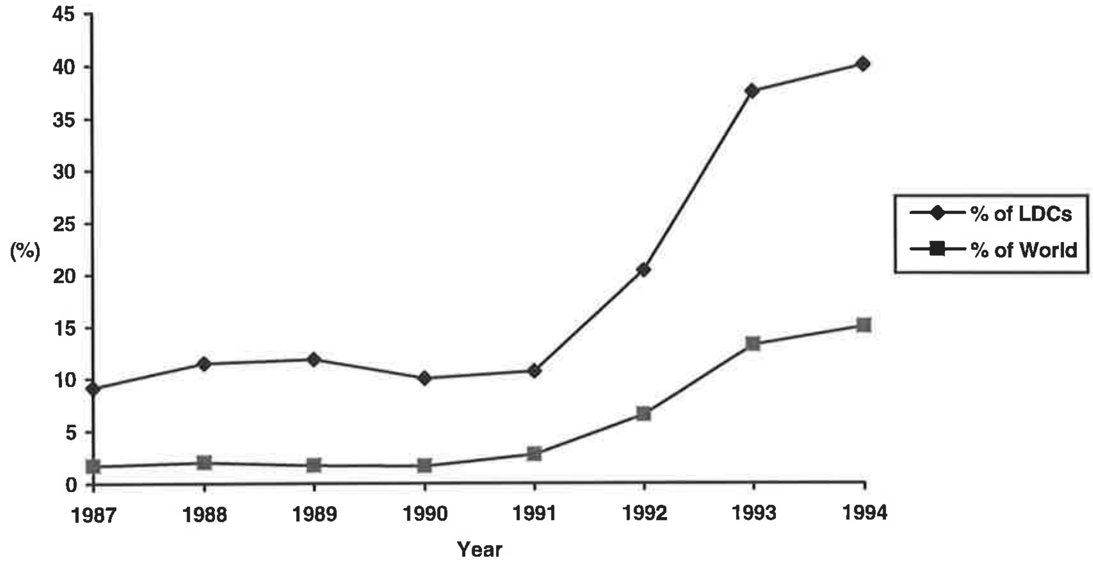
US$27.5 billion, accounting for more than 13 percent of world total FDI inflows and more than one-third of FDI inflows into all developing countries. In 1994, the growth rate of FDI inflows into China declined compared with that of 1992 and 1993. However, China still attracted US$33.8 billion of FDI inflow, its share in the world total FDI inflows increased to 15 percent, and its share in the developing countries' inflows further increased to 40 percent. Growth rates and shares of these amounts are unprecedented.

Table 3.2 China's shares in FDI inflow in the World and LDCs

Year	China's share in the world (%)	China's share in all LDCs (%)
1981-86 (annual average)	1.85	7.69
1987	1.72	9.15
1988	2.01	11.51
1989	1.69	11.85
1990	1.65	10.05
1991	2.76	10.68
1992	6.55	20.38
1993	13.20	37.51
1994	15.00	40.03

Source: Calculated from Table 3.1.

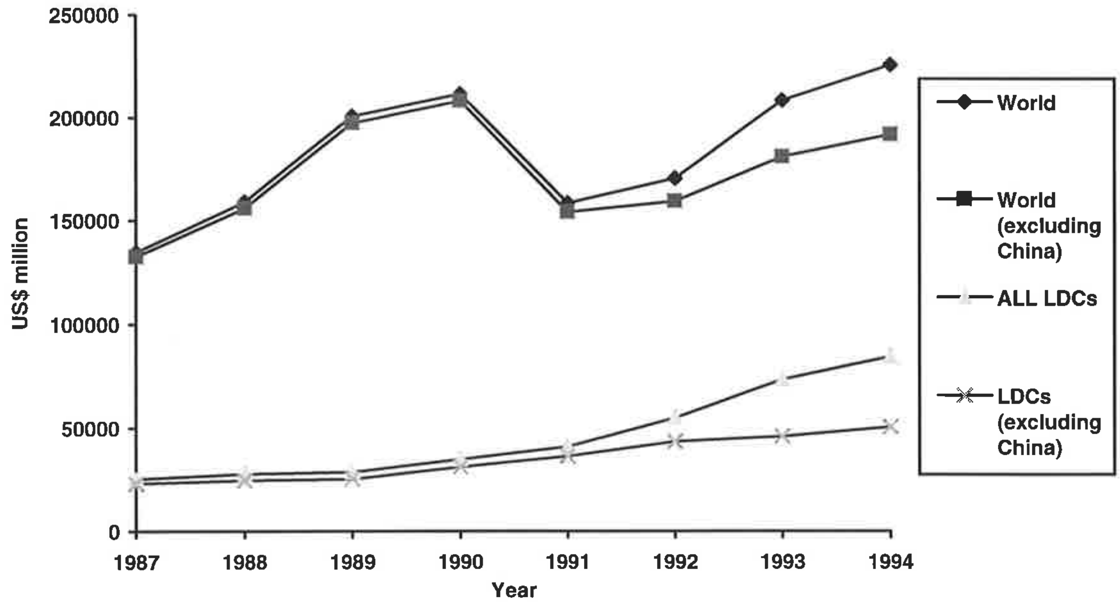
Figure 3.2 China's share in FDI inflow in the World and LDCs



Source: As Table 3.2.

As shown above, the 1992-94 recovery of world FDI inflows was mainly attributed to the FDI inflows into developing countries. Since China was the largest FDI recipient in terms of FDI inflows among developing countries from 1992 to 1994, what was the contribution of China to the recovery of world FDI inflows? Figure 3.3 shows that excluding China, first the recovery of world FDI inflows would have been much slower, and second the growth of FDI inflows into developing countries would have been very slight. Undoubtedly, China has been one of the most important contributors to the 1992-94 recovery of world total FDI inflows, particularly among developing countries. While one might argue that without China the capital might have gone somewhere else or have been invested domestically, the key issue is that in terms of China's large domestic market, fast economic growth and low labour costs, the active participation of China in attracting FDI inflows into its economy not only has substantially increased the total world demand for FDI, but also has provided a greater opportunity for potential investors to realise their overseas investments and operations. Therefore, the significant role of China in the growth of world FDI inflows from 1992 to 1994 could not be neglected.

Figure 3.3 FDI inflows in the World and LDCs with and without China (1987-94, current prices)



Source: Calculated from Table 3.1.

3.2.3 China's position in FDI inflows in East and South-East Asia[29]

As the world's most dynamic and the fastest growing economies in the last decade, East and South-East Asian countries have attracted a large amount of FDI inflows in the late 1980s and the early 1990s. FDI inflows into this region have grown at a rapid rate of 26.3 percent annually from 1987 to 1994. Consequently, as shown in Table 3.3 and Figure 3.4, their combined shares of FDI inflows in total world FDI inflows increased dramatically from 8.3 percent in 1987 to 25.5 percent in 1994, and their shares in developing countries' FDI inflows increased from 44.4 percent to 68.2 percent during the same period.

However, the growth pattern of FDI inflows into different country groups within East and South-East Asian countries exhibits clear time sequences. As Table 3.4 and Figure 3.5 show, FDI inflows into East and South-East Asian countries began to increase rapidly after 1987. The rapid increase of FDI inflows into this region began with the large amount of FDI inflows into NIEs in 1987, followed by the rapid rise in FDI inflows into ASEAN in 1989, and finally by the dramatic increase of FDI inflows into China in 1992. After 1992, FDI inflows into East and South-East Asian countries were dominated by China.

[29] Refers to East and South-East Asian developing countries and economies including China, Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan, and Thailand.

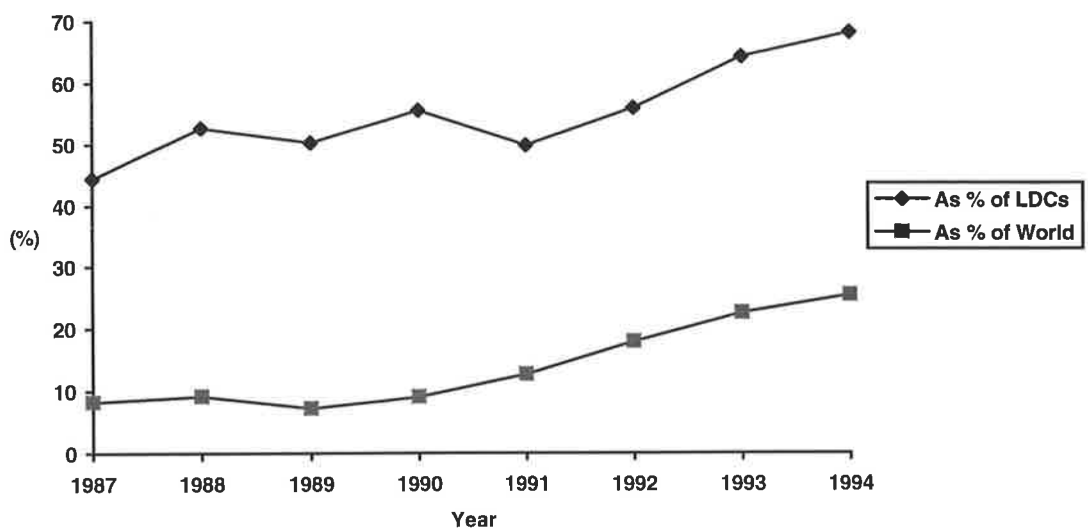
Table 3.3 Shares of East and South-East Asian countries in FDI inflows in the World and all LDCs, 1981-1994 (current prices)

Year	FDI inflows into East, South-East Asian countries (million US$)	East, South-East Asian countries as % of World (%)	East, South-East Asian countries as % of all LDCs (%)
1981-86 (annual average)	5033	9.1	37.9
1987	11231	8.3	44.4
1988	14642	9.2	52.7
1989	14406	7.2	50.3
1990	19234	9.1	55.5
1991	20217	12.7	49.4
1992	30670	18.0	56.0
1993	47132	22.6	64.3
1994	57541	25.5	68.2

Source: As Table 3.1.

Note: The shares are calculated from the above data.

Figure 3.4 FDI shares of East and South-East Asian countries in the World and all LDCs



Source: As Table 3.3.

Table 3.4 FDI inflows and shares of East and South-East Asian countries, 1987-1994 (millions of US dollars at current prices and percent)

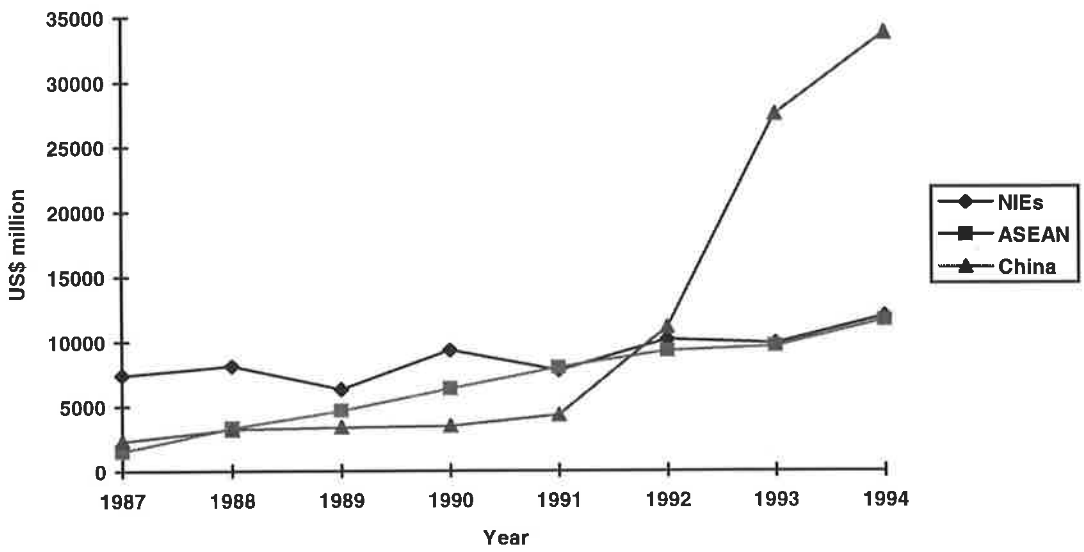
Year	East and South-East Asia	FDI inflows into China	FDI inflows into NIEs	FDI inflows into ASEAN	Share of China	Share of NIEs	Share of ASEAN
1987	11231	2314	7417	1500	20.60	66.04	13.36
1988	14642	3194	8112	3336	21.81	55.41	22.78
1989	14406	3393	6326	4687	23.55	43.91	32.54
1990	19234	3487	9348	6399	18.13	48.60	33.27
1991	20217	4366	7813	8038	21.60	38.65	39.75
1992	30670	11156	10210	9304	36.37	33.29	30.34
1993	47132	27515	9929	9688	58.38	21.07	20.55
1994	57541	33800	12041	11700	58.74	20.93	20.33

Source: As Table 3.3.

Notes: NIEs refers to Hong Kong, Singapore, South Korea and Taiwan.

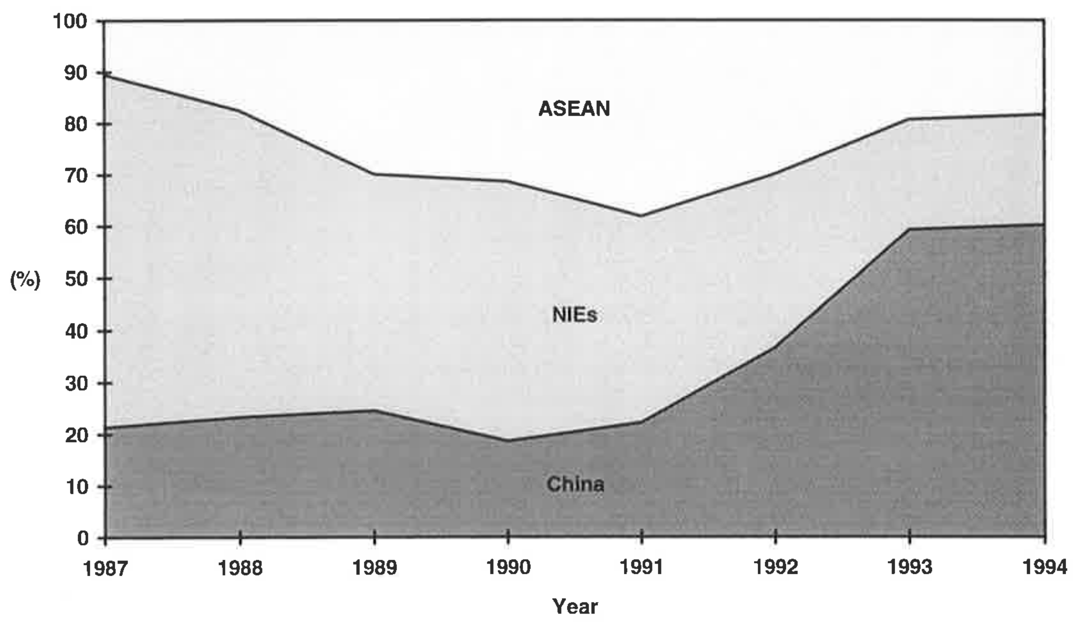
ASEAN refers to Malaysia, Indonesia, the Philippines and Thailand.

Figure 3.5 FDI inflows into NIEs, ASEAN and China (1987-94, current prices)



Source: As Table 3.4.

Figure 3.6 Shares of FDI inflows into East and South-East Asian countries



Source: As Table 3.4.

In accordance with this growth trend, the shares of FDI inflows of these countries in the total FDI inflows into the region changed dramatically. Figure 3.6 presents the changing pattern of shares of FDI inflows into China, the NIEs and ASEAN in the total FDI inflows into this country group. From 1987 to 1991, China's share was relatively stable around 20 percent. During the same period, the NIEs' share dominated this region but experienced a declining trend from a record high of 66.04 percent in 1987 to 38.65 percent in 1991. In contrast, ASEAN's share increased continuously from 13.36 percent in 1987 to a record high of 39.76 percent in 1991. In 1992, FDI inflows into China increased dramatically and exceeded both the inflows into the NIEs and ASEAN, and China's share in the total FDI inflows into this country group increased to 36.37

percent. In 1993, FDI inflows into China doubled the figure of 1992, and, as a result, China's share in FDI inflows into East and South-East Asia reached 58.38 percent. In 1994, China still accounted for 58.74 percent of the total FDI inflows into this region. During 1992-94, FDI inflows into the NIEs and ASEAN continued to increase in absolute terms. However, in contrast to the huge increase of FDI inflow into China, the shares of FDI inflows into the NIEs and ASEAN in the total FDI inflows into this country group experienced a relative decline.

3.3 The Problem

The above analysis raises the questions of why are there differences in the magnitude of FDI inflows among developing countries and what location factors affect FDI inflows into developing countries? In order to analyse these issues, we may describe the magnitude of the developing country distribution of FDI inflows as the entries in the cells of a matrix. The matrix [FDI_{ij}] has its typical element FDI_{ij} which is the FDI inflows from source country i into developing host country j.

$$\left[FDI_{ij}\right]=\begin{bmatrix} FDI_{11} & FDI_{12} & FDI_{13} & \dots & FDI_{1N} \\ FDI_{21} & FDI_{22} & FDI_{23} & \dots & FDI_{2N} \\ \dots & \dots & \dots & \dots & \dots \\ FDI_{M1} & FDI_{M2} & FDI_{M3} & \dots & FDI_{MN} \end{bmatrix}$$

$$\left[FDI_{*j}\right]=\left[FDI_{*1} \quad FDI_{*2} \quad FDI_{*3} \quad \dots \quad FDI_{*N}\right]$$

If we array the developing host countries along the columns and array the source countries along the rows, then summing down rows for each column, we get a row vector [FDI_{*j}] with its typical element FDI_{*j}. This is the total FDI inflows from all source countries into developing host country j, and is the dependent variable which we will study in this chapter.

Our analysis asks the questions: what location factors determine the magnitudes of a typical element FDI_{*j} which is the total FDI inflows from all source countries into developing host country j, and what is the relative performance of China and other developing host countries in attracting FDI inflows? The approach in the analysis of the questions is first to seek the determinants affecting the magnitudes of FDI inflows among developing countries, and then to examine the difference between actual FDI inflows and the model's predictions for China and other developing host countries in order to compare the relative performance of China in attracting FDI inflows with that of other developing countries in general and with that of its neighbouring Asian countries in particular.

As we discussed in Chapter 1, in the foreign direct investment literature the determinants of FDI can be classified into two groups, supply-side and demand-side factors. According to Dunning's "OLI" paradigm, the supply-side factors are ownership advantages and the internalisation advantages and the demand-side factors are location advantages. Empirically, both sets of determinants have been tested by scholars taking the two sets of determinants either together or separately (Dunning, 1993, pp. 148-179). Some empirical studies of demand-side factors, like Scaperlanda and Mauer (1969), Riedel (1975), Lim (1983), Nigh (1985), Torrisi (1985), Hultman and McGee (1988), Coughlin, Terza and Arromdee (1991), Wheeler and Mody (1992), Balasubramanyam and Greenaway (1994), Milner and Pentecost (1994), Zhang Leyin (1994) and Wei Shangjin (1995), have shown that given the ownership advantages of the source countries' enterprises and the incentive for them to internalise the use of their ownership advantages, the location determinants of host countries, such as market size, economic growth, labour costs, trade barriers, distance, government policy and political stability, are very important in affecting the distribution of FDI inflows into host countries.

Using the same methodology, this study will focus upon the demand-side factors to explore the location determinants of FDI inflows into developing countries. The following section will introduce the framework of analysis and derive the basic model.

3.4 Framework of Analysis and the Model

In introducing the problems under study we assert the usefulness of a "modified" gravity model. This section provides a description of the model, its theoretical underpinning, and its possible modifications.

The phrase "gravity model" is drawn from the concept of gravitational attraction over space. In its unmodified form, the gravity concept postulates that an attracting force of interaction between two areas is created by the population masses of the two areas while a friction or resistance to interaction is caused by the intervening space over which the interaction must take place. The magnitude or strength of the gravitational attraction between two areas varies directly with some function of the size of the two areas and inversely with some function of the distance between them.

The basic idea underlying the gravity model is that interaction between two areas is a function of the concentration of relevant variables in the two areas, and of the distance between them. The gravity model has been extensively used by economists in studies of international trade flows.[30] Tinbergen (1962) pioneered the use of the gravity model in the study of the levels of bilateral trade flows. Linnemann (1966) elaborated the Tinbergen model and his results implicitly suggested that the relative distance is important in the determination of trade levels. Leamer (1974) used the framework laid out in his earlier work with Stern to test the adequacy of traditional trade theory, alongside more recent theory which stresses the importance of scale economies. Some economists also used the gravity model in studies of regional trade blocs, regional trade bias and home country trade bias.[31]

The theoretical validity of the gravity model has been examined by Niedercorn and Bechdolt within the framework of utility theory (Niedercorn and Bechdolt, 1969, pp. 273-282). More recently, Deardorff (1995) demonstrated that the gravity model is

[30] For an earlier survey of the use of gravity models in the analysis of trade flows, see Leamer, E. L. and R. M. Stern (1970), *Quantitative International Economics*, Boston: Allyn and Bacon. For a recent discussion of the use of gravity models in the analysis of trade flows, see Drysdale, P. and R. Garnaut (1994), "Trade Intensities and the Analysis of Bilateral Trade Flows in A Many-country World: A Survey", in R. Garnaut and P. Drysdale (eds), *Asia Pacific Regionalism --- Readings in International Economic Relations*, Harper Educational Publishers, Australia.

[31] There are a lot of such studies, for example Wolf and Weinschrott (1973), Deardorff (1984), Frankel (1994), Wei Shangjin and Frankel (1994) and McCallum (1995).

compatible with the neo-classical models as well, and he also found that what matters for bilateral trade volume is not just the absolute distance between the two countries, but their geographic positions relative to all other countries in the world. The gravity model is also justified by some economists in an imperfect competition / differentiated product framework.[32]

Apart from being extensively used in studies of trade flows, the gravity model has also been used by some scholars, for example Nankani (1979) and Wei (1995), in studies of FDI flows. As we will argue below, the basic principle of using the gravity model in studies of FDI flows is the same as using the gravity model in studies of trade flows.

As elaborated by Dunning's "OLI" theory of FDI, many factors influence the flows of FDI. Since these factors are located in different areas, the general argument for the use of the gravity model in line with the "OLI" theory is that each factor may be categorised as a source country factor (the ownership advantages), a host country factor (the location advantages) or a linkage factor (the distance and other bilateral factors). Source country factors reflect the capacity of a source country to conduct FDI in all possible host countries, while host country factors are characteristics of the overall attractiveness of a host country to attract and locate FDI inflows from all source countries. Linkage factors take account of the relationships between a particular pair of source country and host country, or a host country / a source country and all the other countries in the world.

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[32] For more detailed discussion, see Anderson (1979), Helpman and Krugman (1985), and Bergstrand (1989).

We refer to our model as "modified" gravity model because first we use a large range of quantitative and qualitative factors in the model, and second, we use an improved linkage factor --- remoteness --- as a resistance factor affecting FDI flows. The remoteness factor is an index of a weighted average distance of a country to all the other countries in the world. The biggest advantage in using remoteness instead of the absolute distance as the distance factor is that first it takes account of a country's geographic position relative to the rest of the world. Second because we will examine the location determinants of FDI inflows from all source countries into developing host countries, remoteness provides us with a comparable distance factor for each of the developing host countries relative to all the other countries in the world.

In this study, in presenting the specified determinants of the country distribution of FDI inflows from all source countries into developing host countries, we shall therefore classify the determinants as: source country variables; host country variables; and linkage variables.

Based on the spirit of the gravity model and the discussion of the framework of analysis, the fundamental model used in this study can be written as:

$$FDI_{ij} = f\,(X_i\,,\, X_j\,,\, R_{ij}\,) \qquad (3.1)$$

$i = 1, 2, 3, \ldots I$

$j = 1, 2, 3, \ldots J$

where:

FDI_{ij} = the magnitude of FDI inflow from source country i into host country j

X_i = source country variables

X_j = host country variables

R_{ij} = linkage variables

As regard to the functional form of equation (3.1), we consider the use of the linear and log-linear forms.

First, the linear form of equation (3.1) can be written as:

$$FDI_{ij} = \alpha_0 + \alpha_1 X_i + \alpha_2 X_j + \alpha_3 R_{ij} \tag{3.2}$$

Since our interest is in examining the location determinants of FDI inflows from all source countries into developing host countries, therefore, to obtain the host country aggregate equation FDI_{*j}, the aggregate FDI inflows from all source countries into a developing host country j, we use the identity:

$$FDI_{*j} = \sum_{i=1}^{I} FDI_{ij} \tag{3.3}$$

Substituting (3.2) for (3.3),

$$FDI_{*j} = \sum_{i=1}^{I} (\alpha_0 + \alpha_1 X_i + \alpha_2 X_j + \alpha_3 R_{ij})$$

$$= I\alpha_0 + \alpha_1 \sum_{i=1}^{I} X_i + I\alpha_2 X_j + \alpha_3 \sum_{i=1}^{I} R_{ij}$$

$$= I\alpha_0 + \alpha_1 X_* + I\alpha_2 X_j + \alpha_3 R_{*j} \qquad (3.4)$$

Since a source country i's variables X_i which measure the overall outward investment potential of source country i are determined by its own technological and economic development levels, the key feature of these variables is that they are common to all outward FDI of source country i and are independent from and irrespective of destinations. Therefore, the source country variables X_* become a constant for each of the host countries. In the actual implementation, we use the intercept term to capture the effects of source country variables X_*. As a result, we have the following equation:

$$FDI_{*j} = \beta_0 + \beta_2 X_j + \beta_3 R_{*j} \qquad (3.5)$$

where:

$\beta_0 = I\alpha_0 + \alpha_1 X_*$

$\beta_2 = I\alpha_2$

$\beta_3 = \alpha_3$

Thus the equation for FDI_{*j} is a function of host country variables and linkage variables only. It states that, given the source country variables (supply-side factors), the host country variables (demand-side factors) and the linkage variables are the only things that matter to determine the distribution of FDI inflows from all source countries into each of the host countries. Therefore, we call equation (3.5) the host country aggregate FDI equation.

As is usual in the use of a gravity model in studies of international trade flows, we also adopt the log-linear form as the basic functional form to connect the magnitude of FDI inflows from all source countries to host country j to the relevant explanatory variables (host country variables and linkage variables). Therefore, equation (3.5) can be rewritten in log-linear form as:

$$\ln FDI_{*j} = \beta_0 + \beta_2 \ln X_j + \beta_3 \ln R_{*j} \qquad (3.6)$$

Thus based on the principle of gravity model, we have derived the basic equation. In equation (3.6) the estimated coefficients of the $\ln X_j$ and the $\ln R_{*j}$ variables will be elasticities.

Equation (3.6) is the form of a "modified" gravity model used to explain the magnitude of FDI inflows from all source countries into a host country j. In fact, almost all empirical studies of location determinants of FDI inflows or stocks have used the functional form of this "modified" gravity model without systematically conducting the derivation of the model. Since our interest is to investigate the location determinants of FDI inflows into developing countries, and in particular into China, equation (3.6) is the fundamental equation in this study. The following section will describe the location determinants and establish the independent variables.

3.5 The Hypotheses

As shown in many studies, the location factors determining FDI inflows into developing countries are mainly market size, economic growth, per capita income, labour costs adjusted for productivity, distance, resource endowments, political stability and investment incentives offered by the host country government.[33] In line with the framework adopted for our analysis, in the following we examine those location factors which we consider play an important role in determining the magnitude of FDI inflows into developing host countries.

(1) Market size and degree of development of host countries

In the previous studies, the argument for the importance of market size as a location factor in the determination of the inflows of FDI is primarily based on the theory of economies of scale. It argues that larger economies can provide more opportunities to realise and explore economies of scale, to realise the specialisation of productive factors and to absorb more efficiently the technology which the foreign investors desire to introduce. However, the significance of this argument is debatable in open economies. This is because in the open economies, enterprises and industries can realise and explore

[33] For a comprehensive survey of the studies of the location factors in determining FDI inflows into developing countries, see Dunning, J. (1993), *Multinational Enterprises and the Global Economy*, Addison-Wesley, Wokingham, England. Also see Helleiner (1973), Riedel (1975), Nankani (1979), Root and Ahmed (1979), Lim (1983), Schneider and Frey (1985), Hill (1988), Tsai Pan-Long (1991) and Zhang Leyin (1994). For more details on investment incentives influencing the location decision of FDI see Guisinger (1985).

economies of scale through international markets instead of only relying on the domestic market. Therefore, the importance of market size as a location factor in the determination of FDI inflows should be discussed within the situation of open economies.

There are three basic arguments for the importance of the market size as a location factor in attracting FDI inflows even within open economies. First, for domestic market-oriented FDI and FDI in non-tradeable sectors, especially FDI in the service sector, domestic market size is a very important determinant affecting the investment location decision. This kind of FDI in the world total FDI inflows and in the FDI inflows into developing countries has increased rapidly in recent years (United Nations, 1993). Second, for export-oriented FDI, as is the general case of most FDI projects in developing countries, particularly in East and South-East Asia, domestic market size can still be important because larger economies can provide more opportunities for industries and enterprises to benefit from external economies of scale and spill-over effects. This is especially important for high technology industries and those industries which have a relatively high requirement for well trained skilled and semi-skilled labourers. Third, larger economies not only can sustain more economic activities but also can provide more opportunities for economic diversification. This is very important for strategic-seeking, conglomeration and diversification FDI.

The above discussion leads us to expect that the magnitude of FDI inflow will be greater, the larger is the market size of the developing host country. The measure of market size used in this study is the Gross Domestic Product of the developing host country, denoted by GDP. The expected influence of this variable on the magnitude of FDI inflow is positive.

The degree of development of developing host countries is expected to be another important location determinant affecting FDI inflows. First, the supply of domestic entrepreneurship is generally assumed to be positively related to the degree of development of the country. This is important for attracting FDI inflows, particularly for FDI taking the form of joint ventures with local partners and for FDI with high technology and a high requirement for skilled labourers. Second, a higher degree of development also implies better conditions in local infrastructure, which is fundamental for attracting FDI inflows. In this study the Per Capita Gross National Income, denoted by PGNI, is used as a measure of degree of development of developing host countries. Of course, we expect that the influence of PGNI on the magnitude of FDI inflows into developing countries is positive.

(2) Economic growth in developing host countries

A high rate of economic growth is an indicator of development potential. In empirical studies, two measures of economic growth have been used (Scaperlanda and Mauer 1969, pp. 558-568). One is the growth rate of GDP, another is the absolute annual change of GDP. In this study, both the growth rate and absolute change of GDP, denoted by GGDP and DGDP respectively, are used as alternative measures of economic growth in the host country under study. Clearly markets that are expected to grow faster will tend to attract higher levels of inward FDI. Therefore, the hypothesis is that there is a positive relationship between inward FDI and economic growth in the developing host country.

(3) Factor costs in developing host countries

In the FDI literature, the most important factor cost in the determination of FDI flows is the wage rate, especially when FDI is export-oriented. Therefore, we take the relevant factor cost in the decision to locate FDI in the host country as that of labour costs. In particular, we expect lower labour costs to include higher levels of FDI inflows, especially for export-oriented FDI. However, we should argue that a lower wage rate may also be accompanied by lower productivity, and thus the efficiency wage may not be low. Therefore, the best measure of labour costs should be the "efficiency wage" rather than the absolute wage rate. Following this argument, in this study we use the efficiency wage as a measure of labour costs in each developing host country. The efficiency wage may be directly measured as:[34]

$$EW_j = \frac{W_j}{\Pi_j}$$

where EW_j is the average efficiency wage in developing host country j, W_j is the absolute wage rate in developing host country j, and Π_j is the average productivity of labour in developing host country j. The efficiency wage as a measure of labour costs has the

[34] A similar definition of efficiency wage was used by Nankani (1979) in a study of intercountry distribution of direct foreign investment in manufacturing in developing countries.

advantage of being unit free. It is expected to be negatively related to the level of FDI inflows.

There are two major problems involved in the international across country comparison of wage rates and labour productivity. One is the different price levels in different countries, and another is the different exchange rates, especially in the context of the developing countries. To avoid these problems, in this study we use the total manufacturing labour earnings as a percentage of total manufacturing value-added in each developing country as the corresponding measure of efficiency wage.[35] In fact, according to our above definition for the efficiency wage, the measure of manufacturing earnings as a percentage of manufacturing value-added is exactly the manufacturing efficiency wage.[36] Since the stock of manufacturing FDI accounts for around 50 percent

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[35] The World Bank in the World Tables 1995 also uses manufacturing earnings as a percentage of manufacturing value-added as a measure of manufacturing wage index. The data of manufacturing efficiency wages of developing countries used in this study are from the World Bank, *Socio-economic Time-series Access and Retrieval System: World Tables 1995,* The International Bank for Reconstruction and Development, World Bank, Washington D.C.. The calculation is based on local currency and current prices.

[36] The derivation of the manufacturing efficiency wage is as follows:

$$MEW = \frac{MW}{M\Pi} = \frac{(Y_m / L_m)}{(V_m / L_m)} = \frac{Y_m}{V_m}$$

Where: MEW = Manufacturing Efficiency Wage

MW = Manufacturing Wage Rate

MΠ = Manufacturing Labour Productivity

Y_m = Manufacturing Labour Earnings

V_m = Manufacturing Value-added

L_m = Manufacturing Labour

of the total FDI stock in developing countries, the manufacturing efficiency wage is acceptable as a proxy for the average efficiency wage in the developing host countries.[37]

(4) Remoteness of developing host countries

The use of remoteness instead of the absolute distance as the distance factor is mainly for two reasons. First, in this study since our interest lies in analysing the location determinants of aggregate FDI inflows from all source countries into developing host countries, remoteness as a linkage variable provides us with a standardised distance factor for each of the developing host countries with respect to all other countries in the world. Second, as Deardorff (1995) pointed out, what matters for bilateral export volumes is not just the absolute distance between the two countries, but their geographic position relative to all other countries. Though this point is derived from trade flows, we can argue that its basic principle is also valid in examining FDI flows. Our basic argument here is that in terms of the distance factor what matters for the magnitude of aggregate FDI inflows from all source countries into a developing host country is the developing host country's geographic position relative to the rest of the world.

The rationale for including the distance factor --- remoteness --- as one of the location determinants in affecting FDI inflows into developing host countries is that, first,

[37] The calculation is based on the following developing countries: Argentina, Brazil, Chile, China, Colombia, Hong Kong, Indonesia, Malaysia, Mexico, Nigeria, the Philippines, Korea, Singapore, Taiwan, Thailand and Venezuela. Together these countries accounted for 68 percent of total inward FDI in developing countries. The stock of manufacturing FDI in the total FDI stock was 54.6 percent, 49.6 percent and 48.6 percent in year 1980, 1985 and 1990 respectively (United Nations, 1993, p. 62).

remoteness is directly related to the level of transport costs. Therefore, on the one hand we expect that remoteness has a positive effect on FDI inflows if the nature of FDI is domestic market-oriented and FDI and trade are substitutes. On the other hand we expect that remoteness has a negative effect on FDI inflows if the nature of FDI is export-oriented. Second, remoteness is also closely related to the level of transaction cost in terms of information gathering and familiarity with local market conditions. Therefore, we expect remoteness to have a negative effect on FDI inflows. At this aggregate level of study of FDI inflows from all source countries into developing host countries, we expect that remoteness has a net negative effect on FDI inflows. This argument rests on the importance of transaction costs for FDI inflows.

In this study we define a host country j's remoteness as the weighted average distance to all the other countries in the world, and the weight is the share of country i's GDP in the world total GDP. The following formula expresses host country j's remoteness.

$$\text{Remoteness}_j = \sum_{i=1}^{I} w_i D_{ij}$$

where:

$$w_i = \frac{Y_i}{Y_w}$$

Y_i = country i's GDP

Y_w = world GDP

D_{ij} = direct distance between country i to country j.

According to the above definition, remoteness is a measure of the relative closeness of a country to the world economic centre. We expect that the closer a country is to "the world economic centre" the higher the level of FDI inflow into that country will be.

In this study we chose 35 countries as the 'other' countries in the world to calculate the weighted average distance of a given developing host country.[38] In fact, when we take a country's GDP share as the weight to calculate the weighted average distance of a given developing host country, it is not necessary to use all countries in the world in the calculation since most of the small countries' GDP shares in the world total GDP are very small and will make very little difference to the calculation of the weighted average distance of a given developing host country. The principle for choosing the countries in the calculation was based on their total outward FDI stock at the end of 1994. As long as a country's total outward FDI stock at the end of 1994 exceeded US$1 billion, it was chosen in the calculation. Thus we have 35 countries with combined total outward FDI stock of US$2,369.132 billion, accounting for 99.63 percent of the world total outward FDI stock at the end of 1994. In addition their combined GDP shares from 1986 to 1993 were around 85 precent of the world total GDP.

[38] The 35 countries are: Australia, Austria, Belgium, Brazil, Canada, Chile, China, Denmark, France, Finland, Germany, Hong Kong, Israel, Italy, Japan, Korea, Kuwait, Malaysia, Mexico, Netherlands, New Zealand, Norway, Panama, Portugal, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, United Kingdom, United States, Venezuela.

The distance between country j and the other countries is the physical distance between their capital cities.[39]

(5) The level of accumulated FDI stock in developing host countries

The level of accumulated FDI stock has been found to be an important explanatory factor of current FDI inflows in several previous studies (Petri, 1995; Dobson, 1993; Mody and Shrinivasan 1991). Based on the results of the previous studies, we argue that the level of accumulated FDI stock may have certain demonstration effects on the investment location decision of foreign investors. Consequently, our hypothesis is that a higher level of accumulated FDI stock indicates an overall better investment environment in developing host countries, which may generate demonstration effects and induce higher level of FDI inflows. We, therefore, expect that the level of accumulated FDI stock will have a positive effect on attracting FDI inflows.

In this study, the level of accumulated FDI stock, denoted as FDIS, is calculated by adding the annual FDI inflows to the 1985 FDI stock of host countries at constant 1987 US dollar prices.

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[39] The physical distance is measured from the 'Demonstration Map of the World Economic and Trade Relations', in the Editorial Board of the Almanac of China's Foreign Economic Relations and Trade, *Zhongguo Duiwai Jingji Maoyi Nianjian* [Almanac of China's Economic Relations and Trade], Zhongguo Shehui Chubanshe, Beijing.

(6) Openness of developing host countries

The trade (exports plus imports) to GDP ratio is usually used as an indicator for the degree of openness of an economy. However, openness as a location factor may have a different effect on the inflows of different kinds of FDI. On the one hand, as usually argued by the "protection jump" hypothesis some kinds of FDI, for example some market-oriented FDI, are induced by high trade barriers. If this is the case, then openness would have a negative effect on the inflows of this kind of FDI. On the other hand, a higher degree of openness of an economy not only indicates more economic linkages and activities with the rest of the world, but also indicates a more open and liberalised economic and trade regime. As a result, it is expected to attract more FDI inflows, particularly the inflows of export-oriented FDI. In this study we expect that a developing country's openness has a positive effect on FDI inflows.

The above has outlined the host country factors that are expected to be the most important in the determination of the magnitude of FDI inflows into developing host countries. Other location factors, such as resource endowments, trade barriers, political stability, investment incentives and legal framework, will not be tested in this study. This is mainly because of the data limitations and the difficulties in quantifying some of the variables. However, we acknowledge that these variables may have impacts on FDI flows even though we do not put them into our empirical tests. The following section presents the econometric analysis and the regression results.

3.6 Econometric Analysis and Regression Results

3.6.1 Method and variable specification

The research methodology is to use regression analysis to test the hypotheses set out above. The basic principle in choosing the samples of developing host countries is the data availability. We tried to choose as many samples as possible. However, because of data limitations we chose thirty-three developing countries over 8 years from 1987 to 1994. The thirty-three developing countries used in this study are: Argentina, Barbados, Bolivia, Brazil, Central Africa, Chile, China, Colombia, Costa Rica, Egypt, Ghana, Guatemala, Honduras, Hong Kong, India, Indonesia, Kenya, Korea, Madagascar, Malawi, Malaysia, Mexico, Morocco, Nigeria, Pakistan, Paraguay, the Philippines, Singapore, Sri Lanka, Taiwan, Thailand, Togo, and Venezuela.

The relationship between the inflow of FDI and the location variables in the developing host countries is investigated over time and across countries. The Kmenta Model, a special approach (Pool) designed particularly for pooled time-series and cross-section data in the SHAZAM econometrics computer programme is used. As this method applies the Generalised Least Square (GLS) technique to pooled data, taking time-wise autocorrelation and cross-sectional heteroskedasticity into account, it will produce a more efficient regression estimation than that obtained by other methods. Furthermore, with the pooled data, the observations are much larger than would be the case if just time-series or cross-sectional data were employed. Consequently, the reliability of the estimates of the regression parameters can be greatly increased.

The dependent variable, denoted as $FDI_{*j,t}$, is the aggregate inflows of realised FDI from all source countries into developing host country j in year t. The value of FDI, as of all the relevant following variables, is measured in constant 1987 US dollar prices. There are eight independent variables, which are summarised in Table 3.5.

Table 3.5 Variable list of the location determinants of FDI inflows into developing host countries

Variable Name	Specification of variables	Source
Dependent Variable		
$FDI_{*j,t}$	Total FDI inflows from all source countries into developing host country j in year t. Millions of US dollars at 1987 prices.	*World Investment Report* 1993, 1994, 1995.
Independent Variables		
$GDP_{j,t}$	Gross Domestic Product of developing host country j in year t. Millions of US dollars at 1987 prices.	World Bank, *Socio-economic Time-series Access and Retrieval System: World Tables 1995.*
$DGDP_{j,t}$	Absolute annual change in GDP of developing host country j in year t. Millions of US dollars at 1987 prices.	Same as above.

Table 3.5 (continued)

Variable Name	Specification of variables	Source
Independent Variables		
$GGDP_{j,t}$	Annual growth rate of GDP of developing host country j in year t. Percent (%).	Same as above.
$PGNI_{j,t}$	Per capita Gross National Income of developing host country j in year t. US dollars per capita per year at 1987 prices.	Same as above.
$MEW_{j,t}$	Manufacturing Efficiency Wage of developing host country j in year t. Percent (%).	Same as above.
$RMT_{j,t}$	Remoteness of developing host country j in year t. Index of weighted average distance to the rest of the world.	Countries' and world GDPs are from various issues of the *World Development Report* and the distances are measured from the map on the *Almanac of China's Economic Relations and Trade.*
$FDIS_{j,t}$	Inward FDI stock of developing host country j in year t. Millions of US dollars at 1987 prices.	*World Investment Report* 1993, 1994, 1995.
$OP_{j,t}$	Openness (trade to GDP ratio) of developing host country j in year t. Percent (%).	World Bank, *Socio-economic Time-series Access and Retrieval System: World Tables 1995.*

3.6.2 The model and regression results

Using the basic model (3.6) derived in section 3 and the hypotheses discussed above, we establish the following equation to represent the relationship between the aggregate FDI inflows into developing host countries and the location determinants of FDI.

$$\begin{aligned} \ln FDI_{*j,t} = \beta_0 &+ \beta_1 \ln GDP_{j,t-k} + \beta_2 \ln DGDP_{j,t-k} + \beta_3 \ln GGDP_{j,t-k} \\ &+ \beta_4 \ln PGNI_{j,t-k} + \beta_5 \ln MEW_{j,t-k} + \beta_6 \ln RMT_{j,t-k} \\ &+ \beta_7 \ln FDIS_{j,t-k} + \beta_8 \ln OP_{j,t-k} + \varepsilon_{j,t} \end{aligned} \qquad (3.7)$$

Where $\varepsilon_{j,t}$ is stochastic disturbance, the βs are the regression parameters to be estimated, and the variables are as defined above.

The independent variables are all lagged k years. This model assumes that the effect of the independent variables at time t-k appears only within period t and is fully completed within that period. The relationship shown in equation (3.7) will be examined for k=1, the most likely appropriate lag. In addition, another possibly appropriate lag (k=2) will be investigated. The estimated coefficients of $\ln GDP_{j,t-k}$, $\ln DGDP_{j,t-k}$, $\ln GGDP_{j,t-k}$, $\ln PGNI_{j,t-k}$, $\ln MEW_{j,t-k}$, $\ln RMT_{j,t-k}$, $\ln FDIS_{j,t-k}$, and $\ln OP_{j,t-k}$ variables are elasticities.

The regression results of equation (3.7) are reported in Table 3.6 with the explanatory variables lagged 1 year (k=1) for the thirty-three developing host countries for the period 1987-94.

Table 3.6 Regression results of aggregate FDI inflows into developing host countries, 1987-94 (with lag k=1)

Variables	Model 1	Model 2
Constant	8.9256	7.6724
	(2.350)**	(1.998)**
LGDP	0.38716	0.4001
	(6.018)***	(6.332)***
LDGDP	0.0368	
	(3.232)***	
LGGDP		0.084773
		(3.824)***
LPGNI	0.13932	0.15352
	(2.147)**	(2.316)**
LMEW	-0.69487	-0.61497
	(-6.203)***	(-5.803)***
LRMT	-2.3370	-2.1075
	(-3.154)***	(-2.839)***
LFDIS	0.47391	0.48799
	(13.82)***	(15.60)***
LOP	0.34508	0.27801
	(3.171)***	(2.586)***
Buse - R^2	0.54	0.61
DF	256	256
F - statistics	42.51	55.90

Note: t-statistics are in parentheses.

** Statistically significant at 0.05 level (two-tail test).

*** Statistically significant at 0.01 level (two-tail test).

Since we have two alternative measures of economic growth DGDP and GGDP, we conducted two regressions. For Model 1 the absolute change in GDP is used as the market growth independent variable. The regression performed very well. We find that all of the independent variables have the expected signs in affecting the magnitude of FDI inflows into developing host countries. The coefficients of GDP ($\hat{\beta}_1$), DGDP ($\hat{\beta}_2$), MEW ($\hat{\beta}_5$), RMT ($\hat{\beta}_6$), FDIS ($\hat{\beta}_7$), and OP ($\hat{\beta}_8$) are statistically significant at the 0.01 level, and the coefficients of PGNI ($\hat{\beta}_4$) and the constant term ($\hat{\beta}_0$) are statistically significant at the 0.05 level.

For Model 2, the growth rate of GDP is used as the market growth independent variable. The regression also performed very well. All of the independent variables have the expected signs in affecting the magnitude of FDI inflows into developing host countries. The coefficients of GDP ($\hat{\beta}_1$), GGDP ($\hat{\beta}_3$), MEW ($\hat{\beta}_5$), RMT ($\hat{\beta}_6$), FDIS ($\hat{\beta}_7$), and OP ($\hat{\beta}_8$) are statistically significant at the 0.01 level, and the coefficients of PGNI ($\hat{\beta}_4$) and the constant term ($\hat{\beta}_0$) are statistically significant at the 0.05 level.

Although the 1 year lag was considered a priori to be the most likely appropriate lag, another possibly appropriate lag k=2 was investigated. As shown in Table 3.7, no superior results were obtained with the 2 year lag models. However, except for the market growth variables DGDP and GGDP, the regression results of the 2 year lag models do provide support for the acceptance of the other hypotheses as important location determinants affecting FDI inflows into developing countries.

Table 3.7 Regression results of aggregate FDI inflows into developing host countries, 1987-94 (with lag k=2)

Variables	Model 1	Model 2
Constant	10.706 (2.505)**	11.251 (2.786)***
LGDP	0.59197 (8.397)***	0.59698 (8.892)***
LDGDP	0.00083726 (0.08198)	
LGGDP		-0.0040889 (-0.2102)
LPGNI	0.16686 (2.095)**	0.19237 (2.397)**
LMEW	-0.76415 (-6.157)***	-0.73902 (-6.081)***
LRMT	-3.0445 (-3.645)***	-3.1982 (-4.121)***
LFDIS	0.30852 (7.274)***	0.30821 (7.284)***
LOP	0.60849 (4.638)***	0.57416 (4.438)***
Buse - R^2	0.20	0.20
DF	256	256
F - statistics	9.08	9.07

Note: t-statistics are in parentheses.

** Statistically significant at 0.05 level (two-tail test).

*** Statistically significant at 0.01 level (two-tail test).

3.6.3 Basic findings and explanations

In line with our hypotheses and the regression results, we can now give some basic findings concerning the location determinants of FDI inflows into developing countries.

The market size (GDP) and the degree of development (PGNI) of developing host country are positive and statistically significant location determinants affecting the magnitude of FDI inflows. The regression results, therefore, support the hypothesis that the larger and higher degree of development of an economy, the larger the magnitude of FDI inflow will be.

In the 1 year lag models, the market growth variables of the absolute change and the annual growth rate of GDP (DGDP and GGDP) are positive and statistically significant in affecting the magnitude of FDI inflows into developing host countries. The results demonstrate that the higher and faster the growth of an economy, the higher the level of FDI inflow will be. However, in the case of the 2 years lag models, both the absolute change and the annual growth rate of GDP are statistically insignificant. This may be because the variable of market growth rate has a more short term impact on FDI inflows.

Manufacturing efficiency wage (MEW), the proxy for labor cost, is a negative, statistically significant location determinant affecting the magnitude of FDI inflows into developing host countries. The results show that a higher efficiency wage in developing host countries deters FDI inflows. This indicates that FDI is responsive to the differences in efficiency wages across developing countries. It also reveals that taking advantage of developing countries' cheap labour is one of the main motives of foreign investors in developing countries.

In most other studies, as surveyed by Dunning (1993), the labour cost variables either have the wrong signs (positive) or are not statistically significant even though having negative signs. Apart from the statistical problems, the main reason for the above results is the use of the absolute wage rates rather than the efficiency wage in these studies. As we argued in section 3.5, a lower absolute wage rate may also be accompanied by lower productivity. Thus the efficiency wage may not be low. In other words, a higher absolute wage rate may be associated with higher productivity, thus the efficiency wage may not be high. Therefore, the analysis presented here shows that the best measure of labour costs should be the "efficiency wage" rather than the absolute wage rates.

Remoteness (RMT), the proxy for the relative distance of a developing country to the rest of the world, is a negative and statistically significant location determinant. The results show that the more 'remote' a developing host country is from the rest of the world, the smaller the magnitude of FDI inflow into that developing host country will be. The negative estimated coefficient of remoteness reveals an important point that transaction costs in terms of information gathering and familiarity with local market conditions are very important factors affecting the investment location decision of foreign investors.

The level of accumulated FDI stock (FDIS) is a positive and statistically significant factor affecting FDI inflows into developing host countries. The regression results show that a high level of accumulated FDI stock will attract more FDI inflows. This reveals the importance of the demonstration effect on the investment location decision of foreign investors.

Finally, openness (OP) is a positive and statistically significant location determinant affecting the magnitude of FDI inflows into developing countries. The regression results indicate that the more open an economy the more FDI inflows will go into that economy. Therefore, a more liberalised trade regime rather than imposing high trade barriers is important for developing countries to attract more FDI inflows to accelerate economic development.

To summarise, the main findings for the location determinants of FDI inflows into developing countries are: countries with a larger market size, faster economic growth, higher per capita income, a higher level of existing FDI stock and a more liberalised trade regime represented by the higher degree of openness will attract relatively more FDI inflows, while higher efficiency wages and more remoteness from the rest of the world will deter foreign direct investment.

3.7 The Relative Performance of China and Other Developing Countries in Attracting FDI Inflows

The statistical model in section 3.6 has effectively established a norm of the magnitude of aggregate FDI inflows from all source countries into a developing host country. According to the model, the magnitude of aggregate FDI inflows from all source countries into developing host countries is a function of a developing host country's market size, economic growth, per capita income, efficiency wages, remoteness from the rest of the world, level of FDI stock, and degree of openness. Against the empirical norm, we can now examine the relative performance of China and other developing countries in attracting FDI inflows and determine the relative performance of China in attracting FDI inflow as compared with other developing countries in general and as compared with its Asian neighbouring countries in particular.

To examine the relative performance of developing host countries in attracting FDI inflows, we define the relative performance of a developing host country in attracting FDI inflow as the percentage ratio of the difference between the actual FDI inflow and the FDI inflow predicted by the model.[40] The precise calculation of the relative performance in attracting FDI inflow is based on the following equation:

$$RFDI_j = (\frac{AFDI_j - PFDI_j}{PFDI_j}) \times 100\%$$

[40] This measure of the difference between actual and potential flows includes the error term $\varepsilon_{j,t}$ but this treatment is not expected to affect the analysis that follows.

where:

$RFDI_j$ = relative performance of host country j in attracting FDI inflow

$AFDI_j$ = actual FDI inflow into host country j

$PFDI_j$ = model predicted FDI inflow into host country j

According to the equation, a positive figure for RFDI indicates that a developing host country's actual FDI inflow is more than the model's prediction, and the larger the figure the better the relative performance of that developing host country in attracting FDI inflow. In contrast, a negative figure for RFDI indicates that a developing host country's actual FDI inflow is less than it could receive based on its location variables, and the smaller the figure the poorer the relative performance of that developing host country in attracting FDI inflow. If a developing host country's RFDI is zero, then this developing host country's relative performance in attracting FDI inflow is at the average of all developing host countries.

Let us first examine the aggregate relative performance of the thirty-three developing host countries in the sample in attracting FDI inflows during the whole period of 1987 to 1994. Table 3.8 reports the 1987-94 aggregate relative performance of these countries in attracting FDI inflows in terms of the total actual FDI inflows and the total predicted FDI inflows into each of these countries during the period of 1987 to 1994. Among the thirty-three developing host countries, eighteen countries attracted more FDI inflows than the model predicted FDI inflows, in contrast, fifteen countries received less FDI inflows than they could receive based on their location variables. At one extreme, Malaysia, Argentina, Madagascar, Paraguay, and Singapore all attracted over 50 percent more FDI inflows than the model's predictions, indicating the outstanding performance of these countries in attracting FDI inflows into their economies during the whole period of 1987 to 1994. At the other extreme, Taiwan and Korea each received over 50 percent less FDI inflows than they might have received based on their economic and geographical characteristics.

Table 3.8 1987-94 aggregate relative performance of developing host countries in attracting FDI inflows

Rank	Country	%	Rank	Country	%	Rank	Country	%
1	Malaysia	85.24	12	Indonesia	33.96	23	Kenya	-11.53
2	Argentina	76.98	13	Barbados	30.23	24	India	-13.06
3	Madagascar	75.12	14	Chile	21.05	25	Pakistan	-22.88
4	Paraguay	72.94	15	Mexico	14.42	26	Hong Kong	-23.46
5	Singapore	56.09	16	Nigeria	6.70	27	Togo	-26.00
6	Morocco	48.95	17	Colombia	5.59	28	Thailand	-29.01
7	Egypt	47.51	18	Bolivia	1.82	29	Central Africa	-29.55
8	Malawi	39.92	19	Venezuela	-1.09	30	Sri Lanka	-30.38
9	China	39.68	20	Honduras	-1.50	31	Ghana	-40.19
10	Costa Rica	37.57	21	Brazil	-3.19	32	Taiwan	-52.86
11	Philippines	36.88	22	Guatemala	-7.41	33	Korea	-65.75

$$\ln FDI_{*j,t} = \beta_0 + \beta_1 \ln GDP_{j,t-k} + \beta_3 \ln GGDP_{j,t-k} + \beta_4 \ln PGNI_{j,t-k} + \beta_5 \ln MEW_{j,t-k} + \beta_6 \ln RMT_{j,t-k} + \beta_7 \ln FDIS_{j,t-k} + \beta_8 \ln OP_{j,t-k} + \varepsilon_{j,t} \qquad \text{(with lag k = 1)}$$

For the East and South-East Asian countries, during the whole period of 1987 to 1994, five countries, Malaysia, Singapore, China, the Philippines and Indonesia, received more FDI inflows and four countries, Hong Kong, Thailand, Taiwan and Korea, received less FDI inflows than they might have received based on each of their economic and geographical characteristics. Therefore, for each individual country the relative performance of the East and South-East Asian countries in attracting FDI inflows presented very large differences. However, as a group the East and South-East Asian countries attracted more than half of the total FDI inflows into developing countries from 1987 to 1994. After controlling for their location variables, the relative performance of East and South-East Asian countries in attracting FDI inflows is only marginally above the average. This implies that as a group the East and South-East Asian countries has received only marginally above their normal share in the total FDI inflows into developing countries.

As for China, during the period 1987 to 1994 in total it attracted 39.68 percent more FDI inflow than expected based on its economic and geographical characteristics. This makes China rank number nine in terms of its relative performance in attracting FDI inflows among the thirty-three developing host countries. Undoubtedly, China's relative performance in attracting FDI inflow is much better than most developing host countries. However, China's relative performance in attracting FDI inflow is only 63 percent of the average relative performance of the eight more outstanding developing host countries. Therefore, though China has a better performance in attracting FDI inflows, it is far from the best among the thirty-three developing host countries.

Compared with the East and South-East Asian countries, China's relative performance in attracting FDI inflow ranked number three, which is much better than that of Hong Kong, Thailand, Taiwan and Korea, but similar to that of the Philippines and Indonesia and much lower than that of Malaysia and Singapore. Therefore, though China is the largest FDI recipient among the developing countries and attracted 40 percent of the total FDI inflows into developing countries and nearly 60 percent of total FDI inflows into the East and South-East Asian countries in 1994, after controlling for its huge market size, fast economic growth, low labour costs and other economic and geographical characteristics, China's relative performance in attracting FDI inflow is only at a level moderately above average both among the developing countries and among the East and South-East Asian countries.

In the above we examined the aggregate relative performance of China and other developing host countries in terms of the total actual FDI inflows relative to the total predicted FDI inflows into each of the developing host countries for the whole period 1987 to 1994. It is also very interesting to examine the relative performance of developing host countries in attracting FDI inflows from a dynamic point of view. We do this by examining the annual relative performance of China, India and the other East and South-East Asian countries in attracting FDI inflows from 1987 to 1994. The computed annual relative performance in attracting FDI inflows of these countries is reported in Table 3.9.

As shown in Table 3.9, China attracted 53.06 percent and 21.18 percent more FDI inflow than the model's prediction in 1987 and 1988 respectively. However, from

1989 to 1991 China received 11 percent to 22 percent less FDI inflow than it might have received based on its economic and geographical characteristics. China's poor relative performance in attracting FDI inflows during 1989 to 1991 was largely due to foreign countries' reaction to the Tiananmen Square Incident. Starting from 1992 FDI inflow into China surged at an unprecedented pace and, as a result, China received 28.68 percent, 81.84 percent and 57.45 percent more FDI inflow than its potential in 1992, 1993 and 1994 respectively, indicating China's much improved investment environment and increasing overall attractiveness to foreign investors.

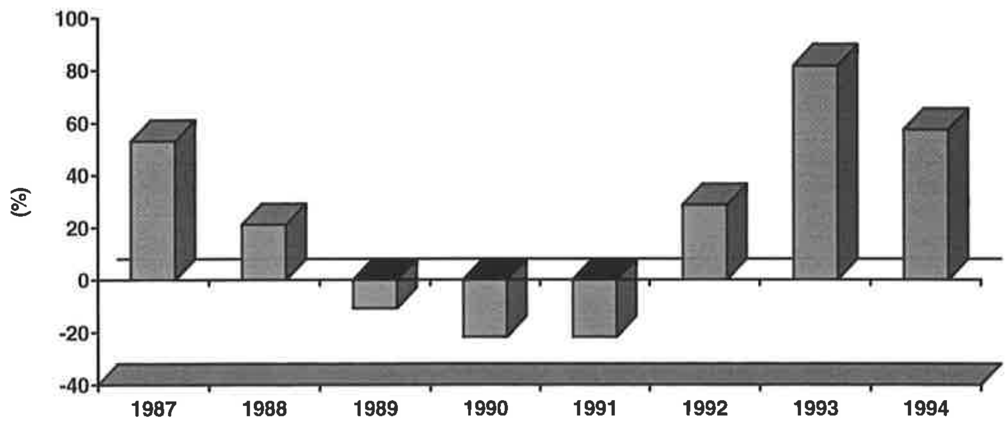
Table 3.9 1987-94 annual relative performance of China and other Asian developing host countries in attracting FDI inflows (%)

Country	1987	1988	1989	1990	1991	1992	1993	1994
China	53.06	21.18	-10.77	-21.82	-21.68	28.68	81.84	57.45
India	79.12	-43.58	-8.59	-31.24	-63.25	-42.71	-6.01	28.19
Singapore	315.66	154.96	36.95	104.47	49.55	63.69	41.36	-12.27
Hong Kong	263.56	76.36	-42.32	-15.81	-78.11	-37.64	-57.46	-56.97
Taiwan	7.43	-25.55	-20.83	-45.47	-51.33	-71.63	-73.64	-67.13
Korea	-12.56	-28.34	-55.00	-60.73	-54.72	-81.83	-83.77	-79.22
Malaysia	107.35	77.41	114.22	98.31	135.24	123.93	80.53	23.25
Indonesia	91.06	59.88	36.76	47.07	49.21	38.52	23.56	10.89
Philippines	95.73	185.50	22.34	0.52	-5.62	-40.83	63.54	40.30
Thailand	49.23	89.63	42.99	20.95	-17.00	-38.87	-55.43	-83.83

$$\ln FDI_{*j,t} = \beta_0 + \beta_1 \ln GDP_{j,t-k} + \beta_3 \ln GGDP_{j,t-k} + \beta_4 \ln PGNI_{j,t-k} + \beta_5 \ln MEW_{j,t-k} + \beta_6 \ln RMT_{j,t-k} + \beta_7 \ln FDIS_{j,t-k} + \beta_8 \ln OP_{j,t-k} + \varepsilon_{j,t} \qquad \text{(with lag k = 1)}$$

In general, as shown in Figure 3.7, the estimations show that from 1987 to 1994 China's annual relative performance in attracting FDI inflows presented a flat "U" shaped pattern. The pattern started with an above average but declining trend in 1987 and 1988, followed by a period of very poor performance from 1989 to 1991, then gradually began to recover in 1992, and finally presented a good performance in 1993 and 1994. Thus it is clear that only after 1992 has China attracted relatively more FDI inflows than expected based on its economic and geographical characteristics.

Figure 3.7 Annual relative performance of China in attracting FDI inflow (1987-94)



Source: As Table 3.9.

Comparing China to some of its neighbouring Asian countries some interesting results emerge. India has many similarities with China in terms of economic size, level of development, and abundant supply of cheap labour, as well as history of policy towards FDI. After an outstanding performance in 1987, India attracted limited FDI inflows from

1988 to 1992. But India has been gradually catching up since 1993, attracting 28.19 percent more FDI inflow than its potential in 1994.

For the NIEs, Singapore's annual relative performance in attracting FDI inflow has been outstanding except in 1994. In contrast, the annual relative performance in attracting FDI inflows of Taiwan and Korea has been very poor. Both received much less FDI inflows from the world than their potential. Hong Kong's annual relative performance in attracting FDI inflows was in between the two extremes. It received much more FDI inflows in 1987 and 1988 but received much less FDI inflows than its potential from 1989 to 1994. However, for the NIEs one common characteristic is that their relative performance in attracting FDI inflows has been declining over time, particularly since 1992. This phenomenon is consistent with their declining share in the total FDI inflows into this region. One possible explanation for the NIEs' declining performance is that the fast rising labour costs in the NIEs have discouraged labour-intensive FDI in these economies in recent years. As pointed out by the *World Investment Report* (1994, p. 67), the loss of cost advantages of these economies (NIEs) has caused not only foreign investors, but also domestic investors to shift labour-intensive production abroad and thus has led to the process of industrial upgrading at home.

For the four ASEAN countries, Malaysia and Indonesia have been the most outstanding countries not only in ASEAN but also in the region in terms of annual relative performance in attracting FDI inflows. Each year from 1987 to 1994 they both attracted much more FDI inflows than they should have based on their economic and geographical characteristics. The Philippines' annual relative performance in attracting FDI inflows has been relatively good. Except the years from 1990 to 1992, the Philippines' annual reception of FDI inflows exceeded its potential by a considerable margin. Thailand's annual relative performance in attracting FDI inflows is interesting. From 1987 to 1990 Thailand had a very good performance in attracting FDI inflows. However, from 1991 to 1994 its performance became poorer and poorer. For example, its FDI inflows fell short of its potential by 17 percent in 1991 and further by 84 percent in 1994.

Comparing China with its neighbouring Asian countries, we found that in general China's annual relative performance in attracting FDI inflows was less than that of Singapore, Malaysia, and Indonesia, but better than that of India, Hong Kong, Taiwan, Korea, and Thailand, and was roughly similar to that of the Philippines.

3.8 Conclusion

What are the location determinants of FDI inflows into developing countries? What is the relative performance of China in attracting FDI inflow as compared with other developing countries in general and as compared with its Asian neighbouring countries in particular? This chapter has offered answers to these questions by using an econometric regression analysis to test the hypotheses based on the location advantages of the theory of FDI and has, therefore, established a "norm" of the magnitude of aggregate FDI inflows from all source countries into a developing host country. The study has provided the following main findings.

First, the empirical study of the distribution of FDI inflows into developing countries by focusing on the host country location factors has demonstrated that given the ownership advantages and the internalisation advantages of the source countries, the location advantages of host countries are very important in determining the distribution of the magnitude of FDI inflows.

Second, for the location determinants of FDI inflows into developing countries, the regression results provided strong support for the acceptance of our hypotheses. The main findings are: countries with larger market size, faster economic growth, higher per capita income, a higher level of FDI stock and more liberalised trade policies represented by a higher degree of openness attracted relatively more FDI inflows, while higher efficiency wages and greater remoteness from the rest of the world deterred FDI inflows.

Third, in the FDI literature the most important factor cost in the determination of FDI flows is the labour cost. However, in most of the previous studies the labour cost variables either have the wrong signs (positive) or are not statistically significant, even though having the negative signs. The main reason for the above results is the use of absolute wage rates rather than the efficiency wage, since a lower absolute wage rate may also be accompanied by lower productivity. Thus the efficiency wage may not be low. In other words, a higher absolute wage rate may be associated with higher productivity, and thus the efficiency wage may not be high. Therefore, the best measure of labour costs should be the efficiency wage rather than the absolute wage rates. Based on the above argument, in this study the efficiency wage rather than the absolute wage rates was used as the labour costs variable. According to our regression results it is a negative and statistically significant location factor affecting FDI inflows into developing countries. Therefore, this study has made some improvement in the use of labour cost variables in the empirical study of location determinants of FDI inflows.

Fourth, the use of remoteness instead of the absolute distance as the distance factor in this study is another improvement in the empirical study of the location determinants of FDI inflows. The basic argument for the use of remoteness as the distance factor is that what matters for the magnitude of aggregate FDI inflows from all source countries into a developing host country is the developing host country's geographic position relative to the rest of the world. Therefore, remoteness provides a standardised distance factor for each of the developing host countries with respect to all other countries in the world. According to the regression results, the large and negative estimated coefficient of remoteness reveals that transaction costs in terms of information gathering and familiarity with local market conditions are very important factors affecting the investment location decision of foreign investors.

Fifth, by using the statistical model as an empirical norm, our analysis of the relative performance of China and other developing countries in attracting FDI inflows shows that there is no obvious evidence to conclude that China's participation in attracting FDI inflow has caused a diversion of world FDI away from other developing countries towards China. We found that China's relative performance in attracting FDI inflow was only at a level moderately above average both among the developing countries and among the East and South-East Asian countries. Therefore, despite the fact that China is the largest FDI recipient among the developing countries and has attracted a large amount of FDI inflow in absolute dollars, in terms of its huge market size, fast economic growth, low labour costs and other economic and geographical characteristics, China received only its fair share of FDI inflows into developing countries, or at most marginally more than its potential from 1987 to 1994.

This chapter has focused on the location determinants affecting FDI inflows at the national level. However, since China is large, with considerable regional differences, it is necessary to examine the situation of FDI distribution within China. In the next chapter, using the same analytical method, we will analyse FDI inflows into China at the provincial level in order to examine the provincial characteristics and the FDI location decision within China.

Chapter 4

Provincial Characteristics and the Foreign Direct Investment Location Decision within China

4.1 Introduction

In the previous chapters, we have examined the growth pattern of FDI inflow into China during the past 16 years and compared China with other developing countries in attracting FDI inflows for the period 1987 to 1994. We found that despite the partially liberalised economic and FDI regime, FDI inflow into China has grown at rapid rates both in terms of the aggregate magnitude and in terms of the shares in the world and in East and South-East Asia. However, among China's thirty provinces, the magnitude of FDI inflow into each individual province differs greatly. Consequently, the provincial distribution of FDI inflows into China has been very uneven, with the coastal provinces accounting for nearly 90 percent of the total. This raises the questions of what are the causes of the uneven provincial distribution of FDI inflows into China and what provincial characteristics determine the FDI location decision within China?

This chapter investigates the causes of the differences in the aggregate magnitude of FDI inflows from all source countries into each of China's provinces. Using the same analytical framework established in Chapter 3, we argue that facing the same set of source countries in the world, the provincial differences in receiving the aggregate magnitude of FDI inflows from the world are determined by the differences in location factors of each individual province. Consequently, at this level of analysis we take each individual province as the basic potential destination for hosting FDI inflows from all source countries in the world in order to find out what provincial location factors determine the provincial distribution of FDI inflows. This topic is particularly interesting in light of the increasing efforts of each individual province to attract FDI inflows to boost local economic development.

This chapter is structured as follows. In section 4.2 we examine the provincial differences in the distribution of FDI inflows during 1983 to 1995. Section 4.3 discusses the hypotheses of provincial location factors affecting the FDI location decision. Section 4.4 conducts the empirical tests for the hypotheses. The final section summarises the basic findings.

4.2 Provincial Distribution of FDI Inflows

As shown in Chapter 1, at the national level the aggregate inflow of realised FDI into China grew steadily from 1979 to 1991, but increased very rapidly from 1992 to 1995 when there was an unprecedented surge. However, what has been the provincial distribution of FDI inflows? This section will analyse this question.

To facilitate the analysis of the provincial distribution of FDI inflows, following the commonly used method of regional division in China and also according to the economic development levels and the geographical locations of provinces, we group China's thirty provinces into three regions namely the east region, the central region and the west region.[41] The reason for the division into regions is primarily for comparing the regional differences and dynamic changes in attracting FDI inflows. In addition, we also will analyse the performance of individual provinces in attracting FDI inflows within each region.

The following tables and figures provide the basic statistics and information of realised FDI distribution among China's thirty provinces and three regions from 1983 to 1995. The tables and figures reveal several important characteristics.

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[41] The east region includes 12 relatively developed and opened coastal provinces which are Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, Guangxi, and Hainan.

The central region includes 9 central and intermediate developed provinces which are Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, Hunan, and Sichuan.

The west region includes 9 west and less developed provinces which are Inner Mongolia, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang.

Table 4.1 FDI inflows into China's host provinces 1983-1995

(millions of US dollars at 1980 constant prices)

Province	1983-86	1987	1988	1989	1990	1991	1992	1993	1994	1995
Beijing	68	77	350	213	176	148	205	380	762	584
Tianjin	23	97	43	21	23	80	63	299	564	822
Hebei	5	7	13	29	28	34	66	226	291	296
Shanxi	0.1	4	5	7	2	2	32	49	18	35
Inner Mongolia	3	4	4	3	7	1	3	49	22	31
Liaoning	17	66	91	84	162	219	303	729	800	770
Jilin	5	5	7	7	11	19	44	157	134	221
Heilongjiang	6	10	48	38	18	13	42	132	193	279
Shanghai	59	155	162	280	110	88	290	1801	1374	1564
Jiangsu	19	63	87	84	84	133	859	1621	2091	2806
Zhejiang	12	26	30	36	31	56	141	588	639	680
Anhui	7	2	19	6	9	6	32	147	206	261
Fujian	48	40	101	231	202	285	836	1635	2063	2186
Jiangxi	5	4	6	6	5	12	59	119	145	156
Shandong	21	47	62	109	117	131	589	1068	1418	1454
Henan	4	10	45	31	7	23	31	174	215	259
Hubei	4	19	16	19	20	28	119	308	334	338
Hunan	8	2	9	15	9	15	78	249	184	274
Guangdong	499	534	871	879	998	1175	2173	4308	5257	5546
Guangxi	21	33	15	35	22	19	107	504	465	364
Hainan	12	44	82	71	65	107	266	403	510	574
Sichuan	17	18	28	9	15	49	66	326	512	293
Guizhou	4	1	7	8	7	9	12	24	35	31
Yunnan	1	5	6	5	5	2	17	55	36	53
Tibet	0	0	2	0	0	0	0	0	0	0
Shaanxi	12	53	78	65	30	19	27	134	133	175
Gansu	3	0.2	2	0	1	3	0.2	7	49	35
Qinghai	0.2	0	2	0	0	0	0.4	2	1.3	0.9
Ningxia	0.1	0.02	0.2	0.7	0.2	0.1	2	7	4	2.1
Xinjiang	5	13	4	0.6	3	0.1	0	30	27	30
By Regions:										
East Region	804	1189	1909	2073	2019	2475	5899	13564	16233	17644
Central Region	56	74	182	137	96	168	503	1661	1941	2115
West Region	28	75	102	82	52	34	61	308	307	357
National Total	**888**	**1337**	**2193**	**2292**	**2167**	**2677**	**6463**	**15533**	**18482**	**20116**

Sources: Data for 1983-91 are calculated from the State Statistical Bureau (1992), *Zhongguo Duiwai Jingji Tongji Daquan 1979-1991* [China Foreign Economic Statistics 1979-1991], China Statistical Information & Consultancy Service Centre, Beijing.

Data for 1992-93 are calculated from the State Statistical Bureau (1995), *Zhongguo Duiwai Jingji Tongji Nianjian 1994* [China Foreign Economic Statistical Yearbook 1994], Zhongguo Tongji Chubanshe, Beijing.

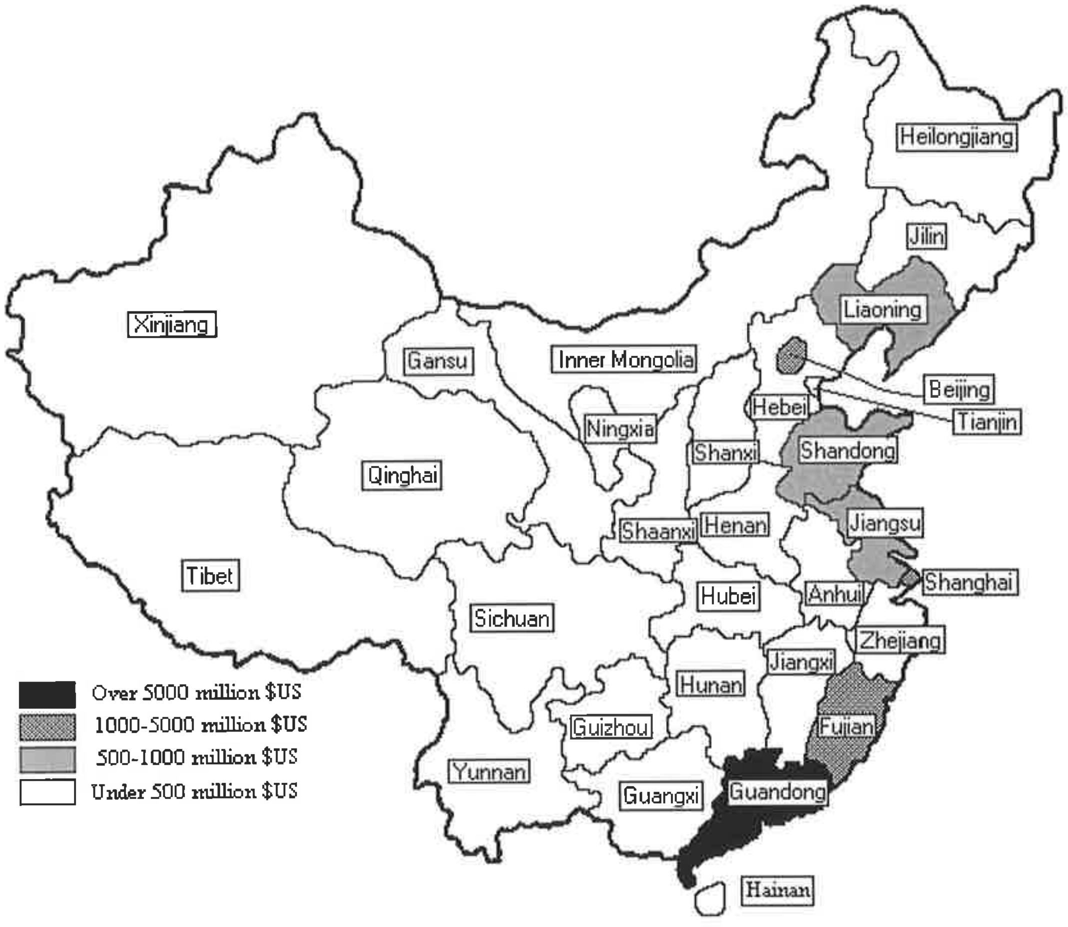
Data for 1994 and 1995 are from the State Statistical Bureau (1996), *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996], Zhongguo Tongji Chubanshe, Beijing.

First, as shown in Table 4.1, FDI inflows into China in the early period were overwhelmingly concentrated in the four special economic zones (SEZs). This was shown by the huge FDI inflows into Guangdong and Fujian provinces whose combined share of annual FDI inflows was more than 60 percent of the national total from 1983 to 1986.

Second, with the development of overall economic reform, from 1984 to 1990 China gradually opened more and more areas to foreign investment. As we already discussed in Chapter 2, this included the opening up of the fourteen coastal cities and Hainan Island in 1984, the three "development triangles" in 1985, and the entire coastal areas in 1988. Furthermore, in the early 1990s the Chinese government moved the implementation of the open policies to FDI toward a more level playing field throughout China. This major policy move was especially enhanced by Deng Xiaoping's call for deeper, faster and wider economic reform and liberalisation in early 1992. Assisted by these policy changes from the mid 1980s to the early 1990s, FDI inflows into China gradually spread from the initial concentrated areas to other provinces. Increasingly the most important areas for hosting FDI are the Yangzi River Delta including Jiangsu, Shanghai, and Zhejiang and the Bohai Gulf including Shandong, Hebei, Tianjin, and Liaoning. Several provinces, such as Hubei, Hunan, Henan, and Sichuan in the central region of China, also witnessed relatively large increases in FDI inflows from 1993 to 1995. Therefore, FDI inflows in the early 1990s have diffused from the initially concentrated southern coastal areas towards the south-eastern and eastern coastal areas as well as towards inland areas. The wide distribution of FDI inflows is illustrated in Figure 4.1 and Figure 4.2.

Figure 4.1 Provincial distribution of accumulated FDI in China

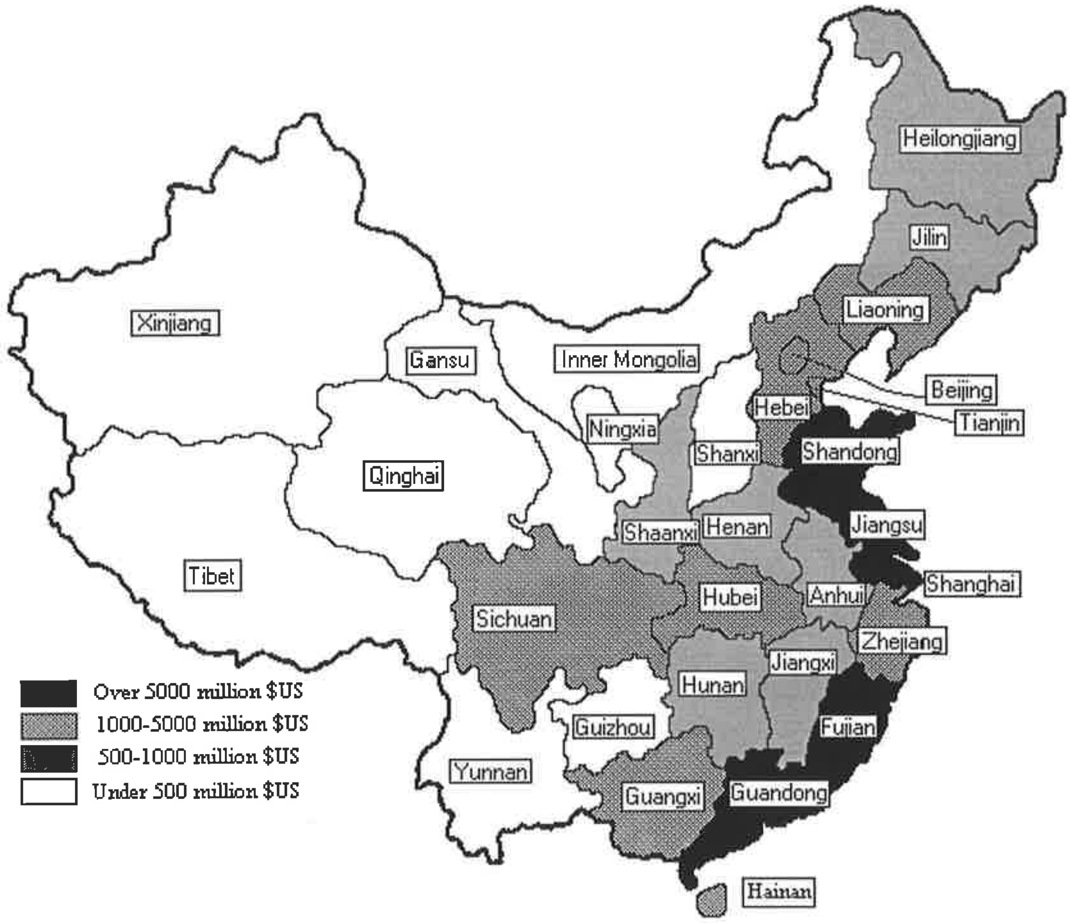
(1980 constant US dollar prices, end 1991)



Source: As Table 4.1.

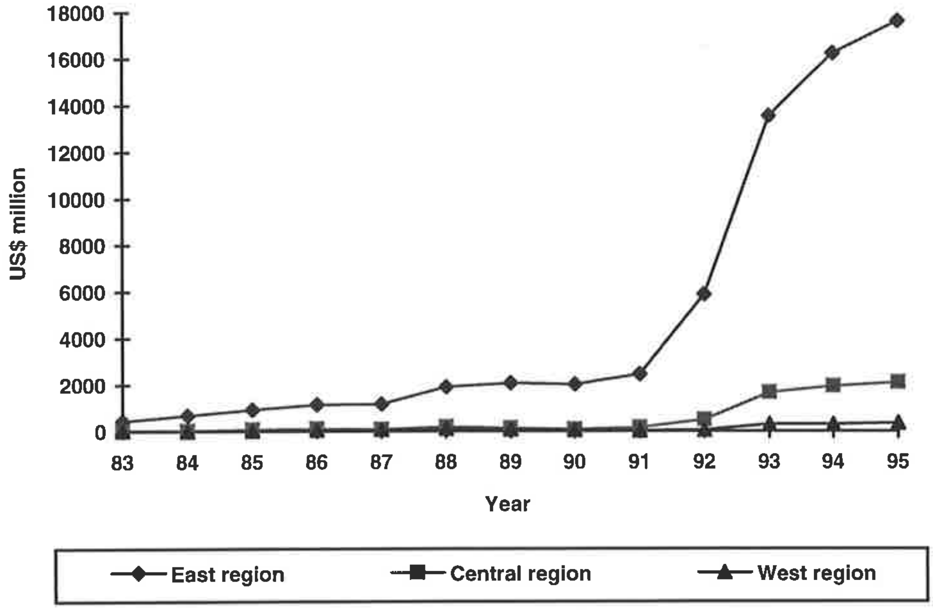
Figure 4.2 Provincial distribution of accumulated FDI in China

(1980 constant US dollar prices, end 1995)



Source: As Table 4.1.

Figure 4.3 FDI inflows into China by regions 1983-95
(1980 constant US$ prices)



Source: As Table 4.1.

Third, as compared with the 1980s, the aggregate annual FDI inflows in the early 1990s have increased remarkably, and particularly since 1992. However, comparing the three provincial groups of the east, central and west regions, as shown in Figure 4.3, each has experienced different growth patterns. For the east region provinces FDI inflow has been increasing steadily with a remarkably high growth rate, particularly during 1992 to 1995. For the other two provincial groups, the inflows of FDI have been much less, especially for the west region provinces. As a result, the gap between the east region and the central and west regions in terms of the absolute magnitude of annual FDI inflows has actually enlarged since 1992.

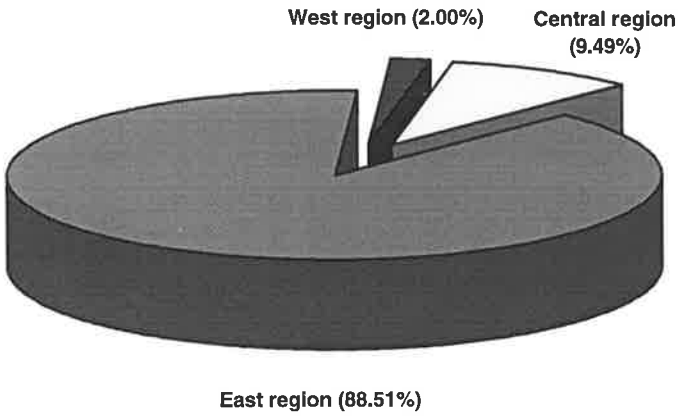
Table 4.2 Accumulated FDI stock in China's provinces 1983-1995

(1980 constant US dollar prices)

Province	Year 1983 - 1991		Year 1992 - 1995		Year 1983 - 1995	
	FDI stock (million US$)	Share (%)	FDI stock (million US$)	Share (%)	FDI stock (million US$)	Share (%)
Beijing	1236	8.69	1931	3.19	3167	4.23
Tianjin	357	2.51	1748	2.88	2105	2.81
Hebei	132	0.93	879	1.45	1011	1.35
Shanxi	20	0.14	133	0.22	153	0.20
Inner Mongolia	29	0.20	105	0.17	134	0.18
Liaoning	690	4.85	2603	4.30	3293	4.40
Jilin	71	0.50	556	0.92	627	0.84
Heilongjiang	150	1.06	647	1.07	797	1.07
Shanghai	1033	7.27	5029	8.30	6062	8.10
Jiangsu	526	3.70	7377	12.17	7903	10.56
Zhejiang	227	1.59	2048	3.38	2275	3.04
Anhui	71	0.50	645	1.07	717	0.96
Fujian	1051	7.39	6720	11.09	7771	10.39
Jiangxi	53	0.37	479	0.79	532	0.71
Shandong	549	3.86	4529	7.47	5078	6.79
Henan	130	0.91	679	1.12	808	1.08
Hubei	117	0.82	1100	1.81	1217	1.63
Hunan	83	0.58	786	1.30	869	1.16
Guangdong	6454	45.38	17285	28.52	23739	31.73
Guangxi	208	1.46	1439	2.38	1647	2.20
Hainan	418	2.94	1753	2.89	2171	2.90
Sichuan	187	1.31	1196	1.97	1383	1.85
Guizhou	48	0.34	102	0.17	150	0.20
Yunnan	27	0.19	161	0.27	188	0.25
Tibet	2	0.00	0	0.00	2	0.00
Shaanxi	291	2.05	468	0.77	759	1.02
Gansu	18	0.12	90	0.15	108	0.14
Qinghai	3	0.02	5	0.01	8	0.01
Ningxia	2	0.01	15	0.02	17	0.02
Xinjiang	44	0.31	87	0.14	131	0.18
By Regions:						
East Region	12880	90.56	53341	88.03	66220	88.51
Central Region	881	6.19	6221	10.27	7102	9.49
West Region	462	3.25	1033	1.70	1495	2.00
National Total	**14223**	**100**	**60595**	**100**	**74817**	**100**

Source: As Table 4.1.

Figure 4.4 Shares of accumulated FDI in China by regions (1983-95)



Source: As Table 4.2.

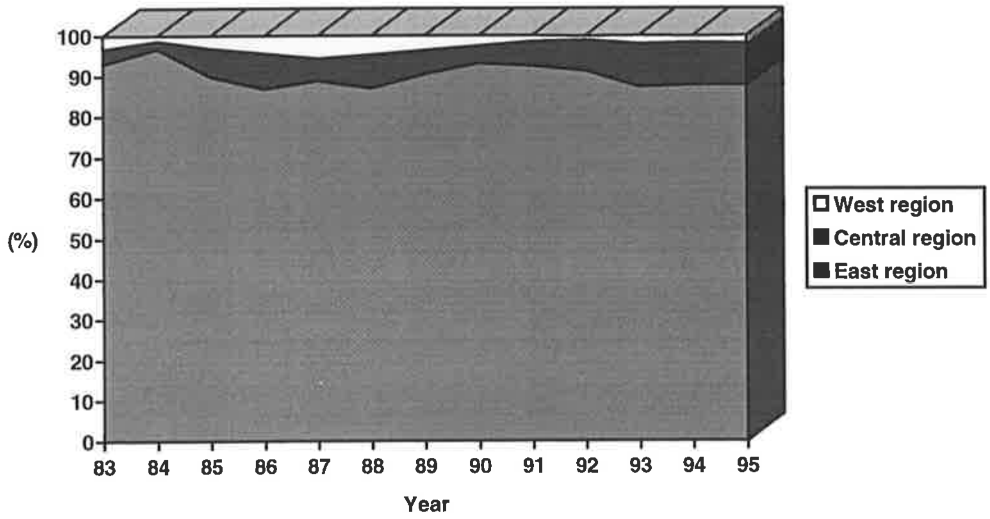
Fourth, as a group the east region provinces have overwhelmingly dominated the other two province groups for the entire period under study. Table 4.2 and Figure 4.4 present the realised FDI stock (at 1980 US dollar constant prices) accumulated from 1983 to 1995. As the table and figure indicate, the distribution of FDI among regions and provinces has been very uneven. The figures highlight the importance of the east region provinces as the main recipients of FDI in China. The percentage shares in the national total of realised FDI stock were 88.51 percent for the east region provinces, 9.49 percent for the central region provinces, and only 2 percent for the west region provinces.

Among the east region provinces, Guangdong's performance in attracting FDI has been very impressive. Its share of accumulated FDI stock from 1983 to 1995 was one third of the national total, far exceeding all other provinces including Jiangsu, Fujian, and Shanghai, each of which possessed around 10 percent of the national total, and ranked second, third and fourth among China's thirty provinces.

Finally, let us examine the share changes of annual FDI inflows into the three regions. As demonstrated in Figure 4.5, the shares of FDI inflows for the three regions were roughly stable from 1983 to 1995, with minor fluctuations. The combined share of the east region provinces in the national total annual FDI inflow has been around 90 percent, with a slightly declining trend since 1991. However, if we analyse this province group one step further, we find that among them, the shares of each province have gradually changed. Two obvious changes can be found. First, the share of Guangdong has declined both at the national level and at the group level. In contrast, the shares of other coastal provinces opened later, such as Jiangsu, Shanghai, Zhejiang, Shandong, and Hebei, have increased steadily. Second, there is a gradual but obvious expansion of FDI inflows from the south coastal provinces towards the south-east and east coastal provinces. The direct beneficiaries are Jiangsu, Shanghai, Zhejiang, Shandong, and Hebei provinces, whose shares both in the group and in the national FDI stock have increased dramatically.

The share of the central provinces in the national annual FDI inflows has increased gradually from round 6 percent in the 1980s to more than 10 percent in the 1990s, particularly during 1993 and 1995. The main contributors are Sichuan, Hubei, and Hunan provinces, and their shares of FDI inflows in the national total doubled from 1980s to the 1990s. This situation suggests that the provincial distribution of FDI inflows has spread from the opened coastal provinces into the inland provinces.

Figure 4.5 Shares of FDI inflows into China by regions (1983-95)



Source: As Table 4.1.

The western less developed provinces received a very small amount of FDI inflows. Their share in the national annual FDI inflows has been declining from around 4 percent in the 1980s to less than 2 percent in the 1990s. However, Shaanxi and Xinjiang attracted relatively more FDI inflows than the other provinces in this group. But in Tibet there was only US$20,000 (at constant 1980 prices) invested in 1988.

In general, the above brief description of the provincial distribution of FDI has clearly revealed the uneven FDI distribution among China's provinces. This raises the questions of what are the location determinants affecting FDI distribution across provinces in China and why FDI has been mainly concentrated in the east region provinces? The following sections will examine and answer these questions.

4.3 Location Determinants of FDI Distribution within China --- The Hypotheses

Building on the FDI literature, our general hypothesis is that facing the same set of source countries in the world, the provincial differences in FDI inflows are caused by the differences in location factors of each province. Therefore, in line with the hypotheses on the location determinants of FDI inflows into developing countries in Chapter 3, we take the following location factors as important in determining the magnitude of FDI inflows into each of China's host provinces.

(1) Market size of host province

The provincial market size is a very important indicator of the overall capacity of the economic activities of a host province. We expect the level of economic activities to be greater the larger is the market of the host province. Consequently, we may hypothesise that the level of FDI inflow will be greater the larger is the market of the host province. However, one point needs to be justified with respect to using provincial market size as a location factor determining the provincial distribution of FDI inflows within China. We argue that the provincial market size can be justified as important for FDI for both export-oriented FDI or FDI aimed at serving the whole national market. This is because larger economies can provide more opportunities for industries and enterprises to benefit from external economies of scale and spill-over effects. In these circumstances, the influence of provincial market size will still be positive on the inward FDI to host provinces. The measure of market size used in this study is the Gross Domestic Product of the host province, denoted by GDP. The value of GDP for each of the host provinces is from 1986 to 1993 at 1980 constant *Renminbi* prices.

(2) The level of economic development of host province

The level of economic development is a comprehensive economic and social indicator of a province. A higher economic development level not only indicates good overall economic performance and higher purchasing power but also implies higher productivity associated with good labour quality and advanced technology, better local infrastructure, and an overall better investment environment. Since the economic development levels of China's provinces are very different, we expect that the provincial economic development level has a positive impact on the provincial distribution of FDI inflows into China. In this study per capita GDP, denoted as PGDP, is used as a proxy for provincial economic development level. The value of PGDP for each province is from 1986 to 1993 at 1980 constant *Renminbi* prices.

(3) Labour costs in host province

In accordance with the argument for the use of efficiency wage in Chapter 3, we use the efficiency wage as a measure of labour costs in each of the host provinces. The expected impact of a high efficiency wage on FDI inflows into each of the host provinces is negative. Because of the constraints of the Chinese statistical methods and the data limitation, in this study we use the average wage rate of all employees in host province j as W_j, and the overall industrial labor productivity of the corresponding host province as Π_j. The value of both measures is at 1980 constant prices. However, two points should be noted here. First, though we use the average wage rate of all employees, the differences between the average wage rate of all employees and the average wage rate of industrial workers are very small for all provinces, and they do change in the same direction. Second, the calculation of overall industrial labour productivity in Chinese statistics is the total industrial output value divided by the total number of workers, rather than the conventional measure which is the ratio of total value added in industry to the total number of workers. However, since we use the same measure for all host provinces for all the periods under study, there should not be a major problem.

(4) The level of accumulated FDI

Following the same argument in Chapter 3, we expect the level of provincial accumulated FDI stock to have a positive effect on attracting FDI inflows. The accumulated FDI, denoted as FDIS, is the FDI inflows accumulated since 1983 of each host province at 1980 US dollar prices.

(5) Intensity of transport infrastructure in host province

The level of transport infrastructure in each host province might be another important consideration for foreign investors. Consequently, we assume that more highways, more railways and more interior transport waterways, adjusted for the size of host province, are positively related to FDI inflows. The proxy for the intensity of transport infrastructure used in this study is the ratio of the sum of the kilometres of highways, railways and interior transport waterways divided by the size of the corresponding host province, denoted as TI. The unit of the intensity of transport infrastructure is kilometres per 100 square kilometres of the host province land area.

(6) Policy dummy

As discussed in Chapter 2, since China opened its door to the world economy an evolving series of policies towards FDI has been implemented. Have these policies had any significant impact on provincial distribution of FDI inflow? In this study we do not intend to test all of the policies during the entire period. However, among the FDI policies we do want to test are the impact of the uneven regional open policies and the set of FDI policies implemented since 1992.

The uneven regional open policies for FDI were implemented from the establishment of four SEZs in 1979, to the opening up of fourteen coastal cities in 1984, and then to the expansion of open policies to the eleven coastal provinces in 1988. In the early 1990s the Chinese government has gradually moved toward a more level playing field throughout China. This major policy move was especially enhanced by Deng Xiaoping's call for deeper, faster and wider economic reform and liberalisation in early 1992 during his famous visit to the south. Deng Xiaoping's landmark visit set the scene for China's move from the uneven regional priority toward a more nationwide implementation of open policies for FDI.[42] Therefore, since 1992 open polices have been implemented throughout China.

These changes not only improved the existing unfair competition between the coastal and inland regions, but also offered more preferential treatment to foreign investors. First, the application of preferential policies gradually shifted from regional priority to accommodating national and local industrial development policies. For example, any FDI project, as long as it is in line with state or local industrial policy and involves high or new technology, is entitled to preferential treatment, regardless of its location. Second, fifty-two cities, including all the inland provincial capitals (except Lhasa in Tibet and Urumqi in Xinjiang), and the areas along the Yangzi River were granted the preferential policies given to the fourteen coastal cities. Third, more than fifteen border cities and counties in the south-west, north-west, north and north-east of China were declared open border cities. Fourth, FDI was allowed in some service industries, such as aviation, telecommunication, banking and retail trade. Fifth, to develop foreign trade and processing industries in the coastal areas further, more bonded zones were to be established. Sixth, the government allowed foreign business people, either those with an intention to set up FDI firms in a later stage or land developers, to buy land use rights for building infrastructure facilities, including residential, commercial, industrial, and recreational real estate (Liu Xiangdong et al., 1993, pp. 868-870; United Nations 1994, p. 68; and Wei Jia 1994, p. 67).

[42] More detailed discussion of the uneven regional open policies to FDI is provided in Chapter 2.

Therefore, two dummy variables, denoted as OP and GP, for the regional open policy and policy changes in the early 1990s are used to test their impact on the inflow of FDI. For the dummy variable OP, we give a value of one for the eleven coastal provinces from 1987 to 1994,[43] and a value of zero from 1987 to 1991 and of one from 1992 to 1994 for other provinces. For the dummy variable GP, we give a value of zero for the years from 1987 to 1991 and a value of one for the years from 1992 to 1994.

4.4 Location Determinants of FDI Distribution within China --- An Empirical Analysis

In this section we conduct an empirical analysis of the location determinants of provincial distribution of FDI inflows within China.

4.4.1 Variable specification and the model

The relationship between FDI inflows and the location variables in China's provinces is investigated over time and across provinces. Twenty-nine provinces from 1987 to 1994 are included.[44] In this study, the dependent variable, denoted as $FDI_{*j,t}$, is the aggregate inflow of realised FDI from all source countries into China's host province j in year t.

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[43] The eleven coastal provinces are Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, Guangxi, and Hainan.

[44] Tibet is excluded because of missing data.

The value of FDI is at constant 1980 US dollar prices. There are seven independent variables which are summarised in Table 4.3.

Table 4.3 List of variables of provincial aggregate FDI inflows

Variable name	Specification of variables	Source
Dependent variable		
$FDI*_{j,t}$	Aggregate FDI inflows from all source countries into province j in year t. Ten thousand US dollars at 1980 constant prices.	*China Foreign Economic Statistics 1979-1991*, *China Foreign Economic Statistical Yearbook 1994*, and *Almanac of China's Economic Relations and Trade 1995/96.*
Independent variables		
$GDP_{j,t}$	Gross Domestic Product of province j in year t. *Renminbi* billion yuan at 1980 constant prices.	Various issues of State Statistical Bureau, *Zhongguo Tongji Nianjian*, [China Statistical Yearbook].
$PGDP_{j,t}$	Per capita GDP of province j in year t. *Renminbi* yuan per capita at 1980 constant prices.	Same as above
$EW_{j,t}$	Efficiency wage of province j in year t.	Same as above
$FDIS_{j,t}$	Accumulated FDI of province j in the end of year t. Ten thousand US dollars at 1980 constant prices.	*China Foreign Economic Statistics 1979-1991* and *China Foreign Economic Statistical Yearbook 1994.*
$TI_{j,t}$	Transport intensity index of province j in year t. Kilometres per 100 square kilometres.	Various issues of State Statistical Bureau, *Zhongguo Tongji Nianjian*, [China Statistical Yearbook].
$OP_{j,t}$	Regional open policy dummy variable. One for the eleven coastal provinces from 1987 to 1994, and zero from 1987 to 1991 and one from 1992 to 1994 for other provinces.	
GP_t	Policy dummy variable. Zero for the years 1987 to 1991, and one for the years 1992 to 1994.	

Based on the modified gravity model (equation 3.6) developed in Chapter 3, incorporating the variables discussed above, we establish the following equation to test the location determinants of provincial distribution of FDI inflows into China.

$$lnFDI_{*j,t} = \beta_0 + \beta_1 lnGDP_{j,t-k} + \beta_2 lnPGDP_{j,t-k} + \beta_3 lnEW_{j,t-k} + \beta_4 lnFDIS_{j,t-k}$$

$$+ \beta_5 lnTI_{j,t-k} + \beta_6 OP_{j,t} + \beta_7 GP_t + \varepsilon_{j,t} \quad (4.1)$$

where $\varepsilon_{j,t}$ is stochastic disturbance, the βs are the regression parameters to be estimated, and the variables are as defined above. The estimated coefficients of lnGDP, lnPGDP, lnEW, lnFDIS, and lnTI variables will be elasticities.

The independent variables, except for the dummy variable OP and GP, are all lagged k years. As the case of the developing country aggregate FDI equation in Chapter 3, this model also assumes that the effect of the independent variables at time t-k appears only within period t and is fully completed within that period. The relationship shown in equation (4.1) will be examined for k=1, the most likely appropriate lag. In addition, another possibly appropriate lag (k=2) will be investigated.

4.4.2 Regression results and explanations

Table 4.4 shows the regression results of the provincial aggregate FDI inflow equation with the explanatory variables, except for the dummy variables, lagged 1 year (k=1) for 29 provinces for the period 1987 to 1994.

Table 4.4 Regression results of provincial aggregate FDI inflow equation, 1987-94 (with lag k=1)

Variables	Model 1	Model 2	Model 3
Constant	4.6425	3.1907	-5.4874
	(3.554)***	(2.954)***	(-5.275)***
LGDP	0.51619	0.56316	1.2979
	(5.642)***	(5.667)***	(10.99)***
LPGDP	-0.23773		0.97786
	(-1.668)		(5.524)***
LEW	-1.6558	-1.5537	
	(-5.639)***	(-5.354)***	
LFDIS	0.50046	0.46443	
	(8.580)***	(7.732)***	
LTI	0.41467	0.35660	0.50768
	(2.553)***	(2.248)**	(2.910)***
OP	0.50517	0.49329	0.86600
	(4.433)***	(4.324)***	(5.808)***
GP	0.58308	0.59282	0.86793
	(6.150)***	(6.215)***	(8.455)***
BUSE-R^2	0.81	0.79	0.70
DF	224	225	226
F-statistics	134.20	141.27	104.64

Note: t-statistics are in parentheses.

** Statistically significant at 0.05 level.

*** Statistically significant at 0.01 level.

Table 4.5 Regression results of provincial aggregate FDI inflow equation, 1987-94 (with lag k=2)

Variables	Model 1	Model 2	Model 3
Constant	1.4842	0.65050	-4.5633
	(0.9285)	(0.5751)	(-4.143)***
LGDP	0.57760	0.59867	1.2538
	(4.805)***	(4.777)***	(9.900)***
LPGDP	-0.10965		0.85871
	(-0.5987)		(4.581)***
LEW	-0.75561	-0.66919	
	(-2.528)**	(-2.365)**	
LFDIS	0.49644	0.48004	
	(7.482)***	(7.130)***	
LTI	0.60725	0.60118	0.56219
	(3.249)***	(3.301)***	(3.094)***
OP	0.56288	0.57890	0.85392
	(3.839)***	(3.980)***	(5.121)***
GP	0.87551	0.87340	0.98403
	(7.695)***	(7.685)***	(8.432)***
BUSE-R^2	0.66	0.66	0.64
DF	224	225	226
F-statistics	62.70	72.02	79.60

Note: t-statistics are in parentheses.

** Statistically significant at 0.05 level.

*** Statistically significant at 0.01 level.

For model 1, we include all the independent variables. We find that the variables GDP, EW, FDIS, TI, OP and GP have the expected signs and the coefficients are statistically significant at the 0.01 level. However, the coefficient of variable PGDP not only is not significantly different from zero at the conventional statistical level but also has the wrong sign.

Since there are seven independent variables in the regression, the insignificance and wrong sign of the variable PGDP might be caused by the problem of high collinearity between PGDP and other independent variables. If this is the case, the effect of variable PGDP on FDI inflows may be captured by other variables, if we regress all of the independent variables in the same equation.

We examined the correlation coefficients between the independent variables. We found that the correlation coefficients between PGDP and EW, and PGDP and FDIS were -0.51 and 0.57 respectively. The relatively high correlation between PGDP and EW, and PGDP and FDIS may be the cause of the insignificance and wrong sign of PGDP in the regression.

One way to solve the collinearity problem between PGDP and EW, and PGDP and FDIS is to enter the variable PGDP into the regression equation separately from the variables EW and FDIS. Therefore, we run another two separate regressions Model 2 and Model 3, each with a different set of explanatory variables. The regression results are presented in Table 4.4. The two models performed very well. Both regressions have relatively high explanatory power and all the independent variables have the expected signs and are statistically significant.

Another possibly appropriate lag k=2 was also investigated. As shown in Table 4.5, the regression results of the 2 year lag models also provide support for the acceptance of the hypotheses although the models have relatively lower overall explanatory power as compared to the 1 year lag models.

Thus, the regression results have shown that the provincial differences in FDI inflows can be explained by the differences in provincial location factors. The provincial market size (GDP), the level of economic development (PGDP), the level of accumulated FDI stock (FDIS) and the intensity of transport infrastructure (TI) are positive and statistically significant location determinants of the provincial distribution of FDI, while the provincial efficiency wage (EW), the proxy for labour costs adjusted for productivity, is a negative and statistically significant location determinant. This shows that not only higher efficiency wages deter FDI inflows but also foreign investors are very responsive to the differences in labour costs across provinces. In addition, the regional differentiation in the timing of implementing the open policies (OP) has had a strong impact on the provincial distribution of FDI inflows into China. This shows that, apart from the economic factors, the huge FDI inflows into the east region provinces was enhanced by the implementation of open policies during the 1980s. The gradual but obvious diffusion of FDI inflows into the inland provinces after 1992 is also partially due to the nationwide spread of open policies. Finally, the policy measures (GP) implemented in the early 1990s had strong positive effects on attracting the inflow of FDI into China across all provinces. Therefore, the sharp increase in the inflow of FDI into China between 1992 and 1994 could be explained partially by the major policy changes in the early 1990s.

4.5 Conclusion

This chapter has investigated empirically the provincial distribution of FDI inflows into China during the past 16 years, particularly for the period of the late 1980s to the early 1990s. We found that associated with the huge amount of FDI inflows into China, the provincial distribution has been very uneven. As a group the east region provinces received 88.51 percent and as a single province Guangdong attracted 31.73 percent of the total FDI inflows respectively during the period 1983 to 1995. The causes of this uneven provincial distribution were then subjected to empirical investigation and regression analysis.

First, using Dunning's "OLI" explanation of the causes of FDI by focusing on the location advantages, the empirical analysis of this chapter has shown that given the ownership advantages of source countries and the incentives for their multinational enterprises (MNEs) to internalise their ownership advantages in order to reduce transaction costs, the location advantages or the location determinants of host provinces are crucial in attracting FDI inflows. In other words, facing the same set of source countries, provincial differences in the magnitude of FDI inflows received from the same set of source countries are determined by the differences in location advantages of host provinces. Therefore, the uneven provincial distribution of FDI inflows into China is caused by the differences in provincial characteristics and location factors of each individual province.

Second, what are the location factors affecting the provincial distribution of FDI inflows? The empirical regression analysis provided strong support for the acceptance of the hypotheses set out in Section 4.3. To summarise, the provinces with higher GDP, higher per capita income, higher level of accumulated FDI stock, and more intensive transport infrastructure attracted relatively more FDI inflows, while higher efficiency wages deterred FDI inflows. In addition, the regional differentiation in the timing of implementing the open policies for FDI had a strong impact on the provincial distribution of FDI inflows. Finally the implementation of a series of policy measures in the early 1990s had a very strong positive effect on attracting FDI inflows into China across all provinces.

Third, why have FDI inflows been mainly concentrated into the east region provinces? As shown in Table 4.6, taking 1993 as an example, among the three regions, the east region provinces have the largest aggregate GDP, the highest per capita income, the overwhelming amount of accumulated FDI stock, the best transport infrastructure, and the lowest average efficiency wage. It is not surprising therefore that FDI has been mainly concentrated in the east region provinces.

Table 4.6 Comparison of location factors of the three regions (1993)

Regions	Total GDP (Billion yuan)	PGDP (yuan/person)	Average EW (%)	Total FDIS (million US$)	TI ($Km/100Km^2$)
East region	890	1861	4.16	32343	45
Central region	485	946	7.27	3046	25
West region	153	846	8.49	800	10

Source: Same as Table 4.3.

Note: The figures are in 1980 constant *Renminbi* and US dollar prices respectively.

Finally, this chapter is an initial exploration of a topic that is of increasing importance to China in general and is of direct relevance to the economic development efforts of each individual province in particular. Two important implications for the provincial distribution of FDI in China can be drawn from this study. First, among other location factors, since the main determinants of FDI location decisions within China are the provincial GDP, PGDP, EW, and TI, it is essential for each of the provinces to increase per capita income, to raise labor productivity, and to improve transport infrastructure in order to attract more FDI inflows. Though this is not easy for all of the provinces, particularly for economically backward provinces in the west region, it is the fundamental way to attract more FDI to accelerate economic development. Second, since China launched the overall economic reform in the late 1979, the economic growth rates of the east region provinces, which benefited from the regionally biased special policies, have been much faster than those of the inland and west less developed provinces. This unbalanced economic growth between the coastal provinces and the inland and western provinces has led to uneven economic development and an increase in income gaps between them. Though the open policies to FDI have been applied throughout China since 1992, the differences between the east region provinces and the central and west region provinces in the levels of economic development resulting from the time lag of the implementation of open policies cannot be reduced in the near future. All of these have had a very strong and direct impact on the location factors attracting FDI inflows. With continued faster economic growth in the coastal provinces, it is likely that uneven provincial distribution of FDI inflows into China will remain in the near future.

Chapter 5

Comparison of Investment Behaviour of Source Countries in China

5.1 Introduction

In the preceding chapters our studies of FDI in China have mainly focused on the analysis of location advantages of host countries and of host provinces of China. However, what is the composition of the source countries of FDI in China? Do the source countries differ in their investment behaviour? This chapter will discuss and answer these questions.

There are two basic reasons for the study of the sources of foreign direct investment. First, from the host country's point of view, a diversity of the sources of foreign direct investment can provide more opportunities for the host country to obtain and to absorb diversified information, technology, management skills and access to international markets, thus enhancing the gains to the host country government and enterprises. This reason has special implications for China. As we will see in the following section, there has been an overwhelming dominance of Hong Kong investment in China, and its pattern of investment to a certain extent has determined the general pattern of FDI in China. Second, since the source countries are different in economic and technological development levels, the enterprises funded by different source countries should have differences in their behaviour, such as the propensity to enter into joint ventures or to set up wholly foreign-owned enterprises, the propensity to export, the type of production technology, and the propensity to transfer and modify technology. Foreign direct investment in China provides a very valuable case study of the differences between developing country investors and developed country investors.

This chapter is structured as follows. In section 5.2 we analyse the source country composition and identify the major investors in China. From section 5.3 to section 5.7, we compare and analyse the differences between the major investors in terms of regional investment bias, patterns of investment, type of entry, market orientation, factor intensity and factor productivity. Finally, section 5.8 summarises the main findings and concludes the chapter.

5.2 Who Are the Major Investors in China

Since 1979 more than 100 countries have invested in China. However, who are the major investors? In this section we will address this question from two aspects. First, we compare the annual realised FDI flows into China from various source countries and economic groupings, and second, we compare the accumulated realised FDI in China by various source countries and economic groupings for the period 1983 to 1995. Because FDI inflows into China increased dramatically after 1992, we will also compare the share changes of various source countries and economic groupings in terms of the accumulated FDI for the two sub-periods of 1983-91 and 1992-95.

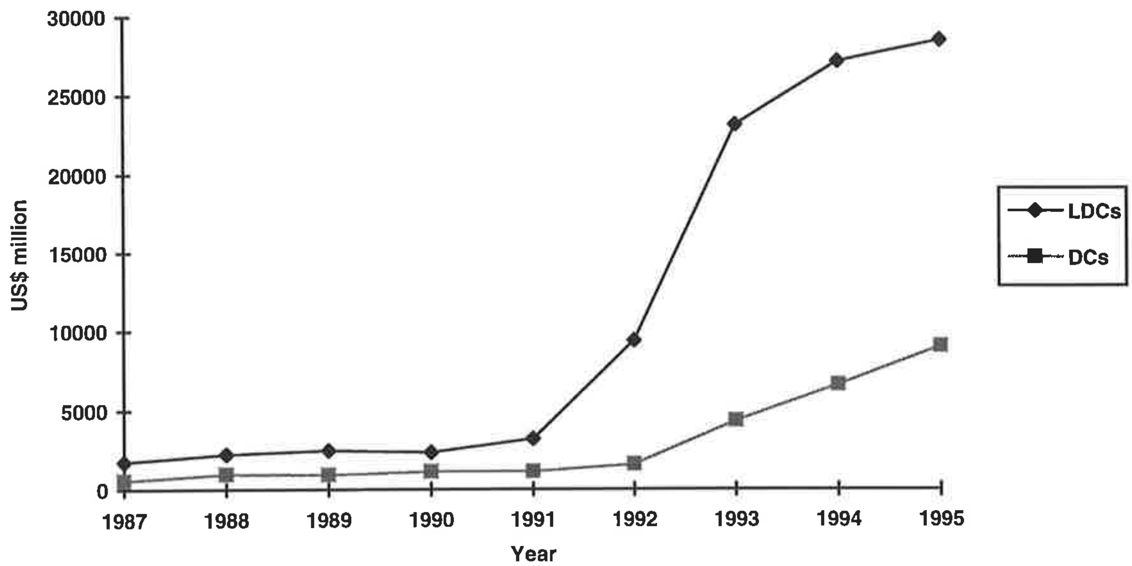
First, Table 5.1 shows the annual realised FDI flows into China from various source countries and economic groupings. The table reveals several important characteristics. First, since 1983 Hong Kong has been the single largest and the most important investor in China among all sources, both in terms of the annual amount and in terms of the growth rate of FDI. Second, Taiwan started to invest in mainland China relatively late compared with other major investors, however, its annual FDI outflow to mainland China increased very rapidly and has exceeded both that of the United States and Japan since 1992. Third, the United States and Japan have been by far the largest foreign investors among the developed source countries investing in China. The annual FDI outflow of the United States and Japan to China far exceeded that of any other developed source countries and ranked the third and the fourth places after Hong Kong and Taiwan. However, the United States and Japan have both increased their investments in China substantially since 1993, compared to their annual investments in China from

Table 5.1 FDI inflows into China by source country and economy 1983-1995 (millions of US dollars at current prices)

Source country	1983-86	1987	1988	1989	1990	1991	1992	1993	1994	1995
NIEs	**883**	**1610**	**2095**	**2121**	**2153**	**2961**	**8799**	**21277**	**24959**	**26258**
Hong Kong	876	1588	2068	2037	1880	2437	7507	17275	19665	20185
Taiwan	0	0	0	0	222	466	1051	3139	3391	3165
Singapore	7	22	28	84	50	58	122	490	1180	1861
South Korea	0	0	0	0	0	0	119	374	723	1047
ASEAN	**8**	**15**	**11**	**16**	**10**	**30**	**144**	**513**	**692**	**765**
Thailand	6	11	6	13	7	20	83	233	235	288
Philippines	2	4	4	2	2	6	16	123	140	106
Malaysia	0	0	1	0	1	2	25	91	201	259
Indonesia	0	0	0	1	1	2	20	66	116	112
Japan	**247**	**220**	**515**	**356**	**503**	**533**	**710**	**1324**	**2075**	**3212**
USA	**256**	**263**	**236**	**284**	**456**	**323**	**511**	**2063**	**2491**	**3084**
West Europe	**151**	**55**	**195**	**218**	**151**	**264**	**277**	**714**	**1634**	**2233**
UK	54	5	34	28	13	35	38	221	689	915
Germany	19	3	15	81	64	161	89	56	259	391
France	33	16	23	5	21	10	45	141	192	287
Italy	20	16	31	30	4	28	21	100	206	270
Other WE	26	15	93	73	48	29	85	196	288	370
Other DCs	**29**	**20**	**10**	**61**	**42**	**26**	**96**	**256**	**413**	**511**
Australia	25	5	4	44	25	15	35	110	188	233
Canada	4	10	6	17	8	11	58	137	216	257
New Zealand	0	5	0	0	9	1	3	9	9	21
Other Asia	**0**	**10**	**31**	**41**	**58**	**50**	**229**	**718**	**627**	**513**
East Europe	**1**	**21**	**1**	**0**	**0**	**1**	**21**	**54**	**49**	**27**
Latin America	**3**	**2**	**0**	**1**	**7**	**4**	**24**	**59**	**165**	**336**
Africa	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**38**	**14**	**15**
Others	**55**	**98**	**96**	**293**	**107**	**174**	**193**	**499**	**648**	**567**
All LDCs	**950**	**1756**	**2237**	**2473**	**2335**	**3220**	**9413**	**23158**	**27153**	**28481**
All DCs	**684**	**558**	**957**	**920**	**1152**	**1146**	**1595**	**4357**	**6614**	**9040**
Total	**1634**	**2314**	**3194**	**3393**	**3487**	**4366**	**11008**	**27515**	**33767**	**37521**

Sources: Various issues of the Editorial Board of the Almanac of China's Foreign Economic Relations and Trade, *Zhongguo Duiwai Jingji Maoyi Nianjian* [Almanac of China's Economic Relations and Trade], Zhongguo Shehui Chubanshe, Beijing.

Figure 5.1 FDI inflows into China by developing and developed source countries (1983-1995)



Source: As Table 5.1.

1983 to 1992. Fourth, as compared with the 1980s, the annual FDI flows into China from all source countries and economic groupings in the early 1990s have increased remarkably. However, comparing the two groups of developing and developed source countries, as shown in Figure 5.1, the surge of FDI flows into China from developing source countries started in 1992 with a very high growth rate, and the surge of FDI flows into China from developed source countries actually occurred in 1993, with a relatively mild growth rate as compared with that of the developing source countries. As a result, the gap in the annual FDI outflows to China between the developing and developed source countries has enlarged.

Second, in terms of the accumulated FDI (at 1980 constant US dollar prices) by source countries and economic groupings, as shown in Table 5.2 and Figure 5.2, during the period from 1983 to 1995, as a group the NIEs has been the largest investor, accounting for 71.55 percent of the total. Within the NIEs, Hong Kong has held the dominant position, accounting for 58.78 percent of the total, followed by Taiwan, accounting for 8.31 percent, Singapore, accounting for 2.84 percent and South Korea, accounting for 1.62 percent respectively. Even if we subtract Hong Kong from the NIEs' total accumulated FDI, the remaining economies still account for 12.77 percent of the total accumulated FDI in China.

The FDI inflows into China from ASEAN countries are also very impressive compared with these countries' economic size and their ability to invest abroad. As a group the four ASEAN countries accounted for 1.62 percent of the total accumulated FDI inflows into China.

Among the developed countries, the United States and Japan are the most important investors in China, accounting for 8.21 percent and 8.06 percent of the total accumulated FDI inflows into China respectively, while the combined share of the other developed countries is only 6 percent. Apart from the UK, whose share is 1.64 percent, no other individual developed country has contributed more than 1 percent of the total accumulated FDI inflows into China. This is particularly apparent for the Western European countries, though they are the main source countries for FDI in the world.

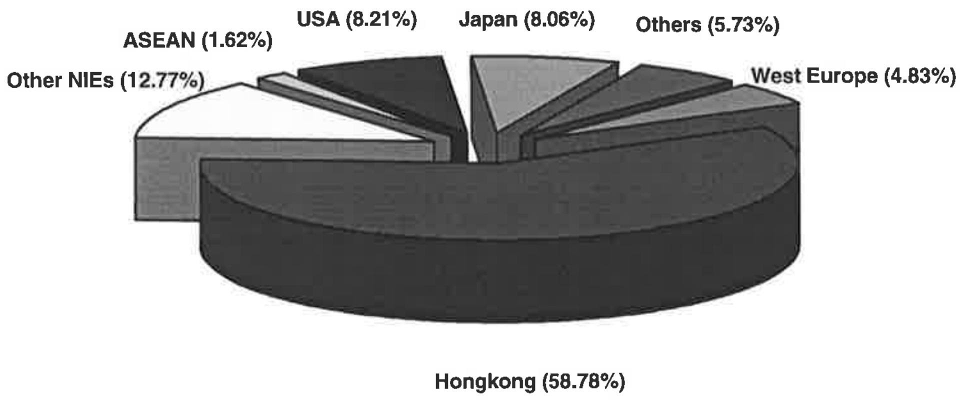
Investments by other countries in China are very small: 1.67 percent for other Asian countries, 0.14 percent for Eastern European countries, 0.44 percent for Latin American countries, and 0.05 percent for African countries.

Table 5.2 Accumulated FDI stock in China by source countries 1983-1995 (1980 constant US dollar prices)

Source Countries	Year 1983-91		Year 1992-95		Year 1983-95	
	US$ (million)	(%)	US$ (million)	(%)	US$ (million)	(%)
NIEs	**9920**	**61.75**	**45372**	**74.12**	**55292**	**71.55**
Hong Kong	9319	58.01	36105	58.98	45424	58.78
Taiwan	422	2.62	6003	9.81	6425	8.31
Singapore	179	1.12	2013	3.29	2193	2.84
South Korea	0	0	1251	2.04	1251	1.62
ASEAN	**79**	**0.49**	**1175**	**1.92**	**1254**	**1.62**
Thailand	54	0.34	468	0.76	522	0.68
Philippines	19	0.12	215	0.35	234	0.30
Malaysia	3	0.02	318	0.52	322	0.42
Indonesia	3	0.02	174	0.28	177	0.23
Japan	**2166**	**13.48**	**4062**	**6.64**	**6228**	**8.06**
USA	**1817**	**11.31**	**4529**	**7.40**	**6346**	**8.21**
West Europe	**1047**	**6.51**	**2686**	**4.39**	**3732**	**4.83**
UK	243	1.51	1026	1.68	1269	1.64
Germany	263	1.64	440	0.72	702	0.91
France	153	0.95	369	0.60	522	0.68
Italy	134	0.83	330	0.54	464	0.60
Other WE	253	1.57	522	0.85	774	1.00
Other DCs	**193**	**1.20**	**708**	**1.16**	**901**	**1.17**
Australia	136	0.84	314	0.51	449	0.58
Canada	47	0.29	371	0.61	418	0.54
New Zealand	11	0.07	23	0.04	35	0.04
Other Asia	**124**	**0.77**	**1170**	**1.91**	**1293**	**1.67**
East Europe	**21**	**0.13**	**85**	**0.14**	**106**	**0.14**
Latin America	**17**	**0.11**	**321**	**0.52**	**338**	**0.44**
Africa	**2**	**0.01**	**39**	**0.06**	**41**	**0.05**
Others	**676**	**4.21**	**1065**	**1.74**	**1741**	**2.25**
All LDCs	**10840**	**67.48**	**49227**	**80.42**	**60067**	**77.73**
All DCs	**5223**	**32.52**	**11986**	**19.58**	**17209**	**22.27**
Total	**16063**	**100**	**61213**	**100**	**77276**	**100**

Source: As Table 5.1.

Figure 5.2 Shares of accumulated FDI by source countries in China (1983-1995)



Source: As Table 5.2.

Comparing the two sub-periods of 1983-91 and 1992-95, the shares of FDI in China from various source countries and economies changed greatly. The share of investment from the NIEs increased substantially from 61.75 percent to 74.12 percent. This large increase of the share of the NIEs' investment in China was mainly caused by the growth of investment from Taiwan and South Korea. Taiwan's direct investment in mainland China started in the early 1980s but could not be listed in China's official statistics till 1990. For the two years from 1990 to 1991, Taiwan's share accounted for only 2.63 percent of the total accumulated FDI in China. However, in the period 1992-95, the share of Taiwan's direct investment in mainland China surged to 9.81 percent. This exceeded both the United States and Japan, and made Taiwan the second largest investor among all the source countries investing in China. For South Korea, direct investment in China was first listed in the Chinese official statistics in 1992. In the four years 1992 to 1995, South Korea's accumulated FDI in China reached US$1,251 million, accounting for 1.62 percent of China's total accumulated FDI inflows from 1983 to 1995.

Another significant increase in the share of accumulated FDI in China was made by the ASEAN countries. Their combined share increased from 0.49 percent in 1983-91 to 1.92 percent in 1992-95. Among the ASEAN countries, Thailand has taken the leading position in investment in China, followed by Malaysia, the Philippines and Indonesia.

In contrast, except the UK and Canada, the shares of accumulated FDI in China for all other developed source countries declined. From the period 1983-91 to the period 1992-95, the Japanese share declined from 13.48 percent to 6.64 percent, the United States' share declined from 11.31 percent to 7.40 percent, and Western European countries declined from 6.52 percent to 4.39 percent.

The reasons for the decline of the shares of accumulated FDI in China for the developed source countries are twofold. First, though the developed source countries increased their investment in China in the early 1990s, particularly in 1993-95, the growth rate of their investment has been lower than that of the developing source countries. Second, since the early 1990s and especially since 1992 a lot of previously non-participant developing countries have begun to invest in China, which undoubtedly would tend to reduce the share of accumulated FDI of the developed source countries. Consequently, the share of accumulated FDI in China for the developing source countries increased from 67.48 percent at the year end of 1991 to 77.73 percent at the year end 1995. In contrast, the share of accumulated FDI in China for the developed source countries declined from 32.52 percent at the year end of 1991 to 22.27 percent at the year end of 1995.

Obviously, foreign direct investment in China by country of origin, on the one hand, presents significant diversification in terms of the total number of investing countries; on the other hand, it also reveals great concentration in terms of the magnitudes invested by the source countries. However, analysis of source countries in China's FDI requires caution. This is especially important in explaining the dominance of Hong Kong in China's FDI, because of the "round-tripping" and "two-stage" investment flows.

We have discussed the problem of round-tripping in Chapter 2. According to the estimation of Harrold and Lall (1993), round-tripping inward FDI accounted for 25 percent of China's FDI inflows in 1992. Recent studies such as Lever-Tracy, Ip and Tracy (1996) and EAAU (1995) suggest that a large volume of the inflows from Hong Kong and Taiwan are due to round-tripping incentives. The round-tripping not only inflated China's total FDI inflows but also inflated the FDI inflows from some source countries especially from Hong Kong, Taiwan and also some South-East Asian developing countries.

"Two-stage" investment happens when some of the investment is undertaken by subsidiaries of multinational corporations. This problem is caused by recording the source country as being that of the country where the subsidiary is located rather than the head office country. In the case of China this problem is most likely to happen when FDI is carried out by the developed countries' multinational corporations' subsidiaries based in developing countries, particularly in Hong Kong. This will tend to increase the share of developing countries in China's total FDI inflows.

However, it also should be noted that these problems have been reduced in recent years. First, China has gradually applied national treatment for foreign affiliates in order to establish a level-playing field for both domestic and foreign firms. This policy reform has substantially reduced the incentive for round-tripping. Second, China has been improving its overall investment environment, particularly its legal framework governing FDI, which will reduce the transactions costs to conduct FDI in China. This will greatly help to solve the problem of two-stage investment.

Therefore, when we interpret the composition of source country investment in China, we should acknowledge the data problems. However, since Hong Kong's investment is so dominant, even when we deduct the estimated 25 percent from Hong Kong's investment, it is still as high as 51 percent of the adjusted total FDI stock, far ahead of any other source country. As a result, we argue that despite the above problems, the general findings of FDI in China by country of origin are still valid.

Now we can answer the question raised in the beginning of this section. The largest single investor in China is Hong Kong followed by Taiwan, the United States and Japan. As a group the Newly Industrialising Economies (NIEs) are the largest investor in

China followed by the group of Western European Countries (WECs) and the ASEAN group (Indonesia, Malaysia, the Philippines and Thailand).

5.3 Regional Bias of the Major Investors

In Chapter 4 we discussed the provincial distribution and the location determinants of FDI inflows into China from all source countries. However, is there any regional preference or bias when each of the major foreign investors makes investments in China? This section will investigate and answer this question. Table 5.3 shows the provincial distribution of FDI made by the major investors. Data on contracted FDI are only available for Hong Kong & Macau, Taiwan, Japan and the United States from 1987 to 1993. The information provided by the data, however, is enough for us to paint a picture of the regional investment location of the major investors and to make some comparisons. When comparing the changes in the major investors' investment location within China over time, the data are divided into the two sub-periods of 1987-91 and 1992-93.

For the period 1987-91, the top three host provinces for the major investors were Guangdong, Fujian and Jiangsu for Hong Kong and Macau; Fujian, Guangdong and Jiangsu for Taiwan; Liaoning, Guangdong and Shanghai for Japan; and Guangdong, Shanghai and Beijing for the United States. The shares of the top three host provinces in the total investments of the major investors were 68 percent for Hong Kong and Macau, 67 percent for Taiwan, 55 percent for Japan and 56 percent for the United States. It is clear that in this period the investments of the major investors in China not only had strong regional biases but also had a very high degree of regional concentration.

Table 5.3 Shares of FDI by major investors by provinces (%)

Province	Hong Kong & Macau		Taiwan		Japan		USA	
	87-91	92-93	87-91	92-93	87-91	92-93	87-91	92-93
Beijing	2.44	4.24	2.81	4.59	9.75	6.03	9.54	9.75
Tianjin	1.27	1.45	1.40	2.48	3.80	4.03	3.15	5.60
Hebei	1.81	1.44	1.66	1.91	1.27	8.06	3.13	2.63
Shanxi	0.28	0.40	0.09	0.48	0.01	0.30	0.27	0.57
Inner Mongolia	0.24	0.25	0.13	0.35	0.03	0.32	0.78	0.65
Liaoning	3.68	2.58	1.92	2.97	28.95	13.02	5.42	6.30
Jilin	0.26	0.53	0.49	0.57	0.61	1.09	0.72	1.22
Heilongjiang	1.07	0.76	0.63	1.06	0.48	1.44	0.78	1.10
Shanghai	3.35	5.47	5.31	5.12	11.61	12.9	14.93	10.51
Jiangsu	4.38	8.46	6.27	20.31	8.16	15.76	7.72	16.25
Zhejiang	2.02	3.92	3.41	5.45	1.99	2.80	4.66	3.86
Anhui	0.23	0.74	0.47	0.76	0.32	0.22	0.18	1.29
Fujian	10.89	10.88	36.93	15.99	3.33	3.62	2.87	3.48
Jiangxi	0.41	0.99	0.93	0.95	0.07	0.33	0.45	0.55
Shandong	3.62	5.09	5.05	8.70	5.83	9.97	7.73	11.31
Henan	1.23	0.47	0.69	1.75	0.37	1.39	0.46	1.06
Hubei	0.97	1.89	1.14	2.45	0.10	1.03	0.44	1.13
Hunan	0.40	0.98	0.30	1.35	0.15	0.37	0.53	0.58
Guangdong	52.97	39.7	23.73	11.82	14.37	10.08	31.58	13.13
Guangxi	1.58	3.37	1.29	2.58	1.42	1.20	0.47	1.75
Hainan	4.00	3.40	3.07	4.46	5.92	3.38	2.34	4.06
Sichuan	1.05	0.74	1.09	1.32	0.30	0.78	1.00	0.88
Guizhou	0.22	0.49	0.37	0.50	0.01	0.06	0.33	0.50
Yunnan	0.04	0.36	0.39	0.70	0.06	0.09	0.14	0.38
Tibet	0	0	0	0	0	0	0	0
Shaanxi	1.35	0.86	0.13	0.99	0.22	1.36	0.13	0.86
Gansu	0.13	0.24	0.10	0.25	0.58	0.24	0.03	0.26
Qinghai	0	0.01	0	0.03	0	0.01	0	0.02
Ningxia	0.05	0.06	0	0.03	0	0.09	0.05	0.09
Xinjiang	0.08	0.22	0.19	0.07	0.27	0.04	0.15	0.24
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Sources: Data for 1987-91 are calculated from the State Statistical Bureau (1992), *Zhongguo Duiwai Jingji Tongji Daquan 1979-1991* [China Foreign Economic Statistics 1979-1991], China Statistical Information & Consultancy Service Centre, Beijing.

Data for 1992-93 are calculated from the State Statistical Bureau (1995), *Zhongguo Duiwai Jingji Tongji Nianjian 1994* [China Foreign Economic Statistical Yearbook 1994], Zhongguo Tongji Chubanshe, Beijing.

Note: The shares are calculated at 1980 constant US dollar prices.

Since 1992 all the major investors have spread investments from their initial concentrated provinces to other regions of China. The new and increasingly important host regions for all the major investors are the "Yangzi River Delta", comprising Shanghai, Jiangsu and Zhejiang, and the "Bo Hai Gulf" including Shandong, Hebei, Tianjin, and Liaoning. Consequently, the order of the top three host provinces for the major investors have changed. For Hong Kong and Macau, Guangdong is still the top host province, but its share has declined from 53 percent to 40 percent. In contrast, Jiangsu's share nearly doubled from 4.4 percent up to 8.5 percent. For Taiwan, the shares of Guangdong and Fujian have both declined by more than twofold, while Jiangsu's share increased by more than three times from 6.3 percent up to 20.3 percent, making it the top place for hosting Taiwan's investment. Jiangsu also has become the top host province for the investments of Japan and the United States. Guangdong has dropped out of the top three host provinces for Japan's investment and fallen to the second place for hosting the investment of the United States. Another change has been the decline of the extent of investment concentration. The shares of the top three host provinces in the total investment of the major investors in the second period had dropped to 59 percent for Hong Kong and Macau, 48 percent for Taiwan, 42 percent for Japan and 41 percent for the United States.

The above analyses have revealed that the investment of the major investors in China do have regional biases. These investment biases are presented in two ways. First, all major investors have invested the bulk of their capital in a small number of provinces, which is reflected by the large shares of the top three host provinces. However, since 1992 this kind of regional investment bias has gradually reduced as the major investors have extended their investments to other regions of China, which is also reflected by the decline of the investment shares of the top three host provinces.

Second, in addition to the common regional investment bias, each of the major investors also presented a different specific regional investment preference or bias. This bias was particularly prominent for the major investors in the period 1987-91. The evidence for this regional investment bias was found by the high concentration of Hong Kong and Macau's investments in Guangdong, Taiwan's investment in Fujian, and Japan's investment in Liaoning. The explanation for this regional investment bias of the investors is the level of "economic proximity" between the host provinces and the investors. Economic proximity is a comprehensive conceptual measure of the overall similarities among countries in the world. The factors affecting economic proximity include the geographic distance, cultural difference, and regulatory barriers. Economic proximity is higher the lower the costs arising from geographic distance (mainly transport and communication costs), cultural difference (differences in culture, language, business practices etc.) and regulatory barriers (both border and non-border measures) that hamper the international movements of goods, services and factors of production (Braga and Bannister, 1994). Economic proximity works to facilitate investment and tends to reduce the transaction costs of investment. As Caves said (1982, p. 64): "Casual evidence ... confirms the general impression that the bulk of their [source countries] foreign investments go where the transactional and information-cost disadvantages are least." Obviously, Hong Kong and Macau with Guangdong, and Taiwan with Fujian have more economic proximity, and Japan is relatively more close and familiar with Liaoning compared with other regions of China. Therefore, in addition to the general location factors affecting the FDI inflows into China, economic proximity is an important factor affecting the investors' investment location decision.

Finally we should acknowledge that because the contracted FDI data are used in the above analyses, the interpretation of the results should be made with caution. However, since the FDI shares of the top three host provinces are so dominant, ranging from 41 percent to 59 percent, in the total FDI inflows into China from each of the major investors, the fundamental result of the regional bias of the major investors revealed by the above analysis is still valid.

5.4 The Investment Patterns of the Major Investors in Manufacturing

The analysis of the pattern of investment in manufacturing in China by the major investors requires more complete data by source of origin and by manufacturing sectors. Unfortunately, data for all FDI in manufacturing in China by country of origin and by manufacturing sectors are not available. However, for the purpose of a general understanding of the pattern of investment in manufacturing in China by the major investors, we can use data for China's 3000 largest foreign-funded enterprises (Huang Zhengshen, Xie Wenxia and Chen Xianjing, 1994). Foreign-Funded Enterprises (FFEs) are Contractual Joint Ventures, Equity Joint Ventures and Wholly Foreign-Owned Enterprises. The data included in the 3000 largest FFEs are mainly enterprises with total investment at or above US$10 million and some with total investment between US$5-10 million. It should be noted that since the data are for the 3000 largest FFEs which are more capital intensive than small enterprises, the interpretation of the findings based on this biased information requires caution.

Among the 3000 largest FFEs, there are 1,940 manufacturing enterprises owned by the major investors. According to the Chinese industrial classification, the 1,940 manufacturing enterprises can first be classified into 29 manufacturing sectors. We can then classify them into three groups - namely labour intensive (L), capital intensive (K), and technology intensive (T) manufacturing sectors.[45]

According to Dunning's "OLI" theory of FDI, the investment patterns of foreign investors are mainly decided by their specific ownership advantages, and further the specific ownership advantages are very much influenced by the economic and technological development levels of source countries. Therefore, for comparison, we

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[45] Labour-intensive sectors include Food processing, Food manufacturing, Textiles, Clothing & other fibre products, Leather & Fur products, Timber processing, Furniture, Paper & Paper products, Printing, Cultural, Education & Sports goods, Rubber products, Plastic products, Non-metal mineral products, Metal products, and Others.

Capital-intensive sectors include Beverage manufacturing, Tobacco processing, Petroleum refining & Coking, Chemical materials & products, Chemical fibres, Ferrous metal smelting & pressing, Non-ferrous metal smelting & pressing, and Transport equipment.

Technology intensive sectors include Medical & Pharmaceutical products, General machinery, Special machinery, Electrical machinery & equipment, Electronics & Telecommunication equipment, and Instruments & Meters.

Details for the classification of China's industries into labour intensive, capital intensive, and technology intensive categories are in Zhang Xiaohe (1993), *Economic Liberalisation, Dualism and the International Trade Pattern of China: Theory and Evidence*, Ph.D Thesis, The University of Adelaide.

grouped the major investors into the NIEs (Hong Kong, Taiwan, Singapore, South Korea), ASEAN (Thailand, the Philippines, Malaysia, Indonesia), WECs (Western European Countries), Japan, and the United States according to their economic and technological development levels.

To avoid problems associated with differences in valuations by the date of the investment, we use the number of enterprises instead of the reported value of the capital invested.

Table 5.4 provides us the information of the largest FFEs in manufacturing by the major investors and by manufacturing sectors. First let us examine the general pattern of investment in manufacturing in China by all of the major investors. As shown in column 1 and 2 in Table 5.4 and especially in Figure 5.3, the shares of investment in manufacturing by all of the major investors are 51.81 percent in labour intensive sectors, 25 percent in capital intensive sectors and 23.19 percent in technology intensive sectors. It is very clear that, even using the information on the largest FFEs which might be expected to be biased towards more capital-intensive sectors, foreign direct investment in China's manufacturing is concentrated in labour-intensive sectors. Taking advantage of China's cheap labour is one of the main motives of foreign investors in China.

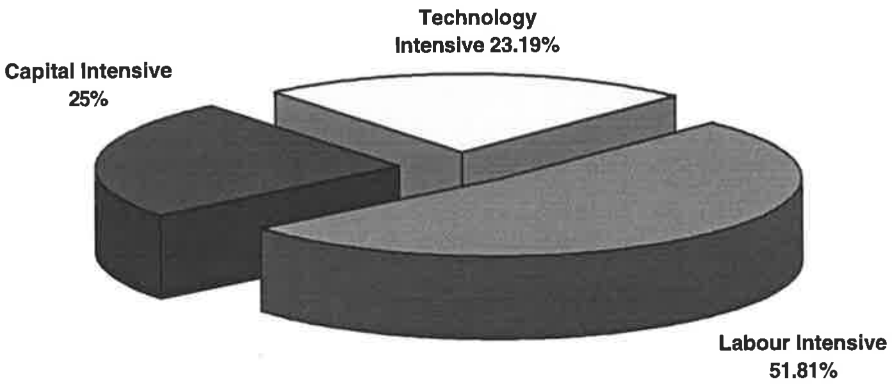
What is the aggregate investment composition of the major investors in manufacturing? As shown in the last row in Table 5.4 and in Figure 5.4, the shares of the major investors in manufacturing based on the 3000 largest FFEs are broadly similar to

Table 5.4 Composition of the major investors by manufacturing sectors (end 1993)

Manufacturing sectors	Sector shares %	Percentage composition of the top 5 major investors in that manufacturing sector				
Textiles	13.14	Hong Kong (76.1)	Taiwan (7.1)	USA (4.7)	WECs (3.9)	Japan (3.1)
Non-metal mineral products	9.28	Hong Kong (68.9)	USA (7.8)	WECs (6.7)	Taiwan (6.1)	Japan (3.3)
Electronics & Telecom. equipment	8.81	Hong Kong (62.6)	Japan (11.1)	USA (9.9)	Taiwan (7.0)	WECs (3.5)
Chemical materials & products	6.44	Hong Kong (64.0)	USA (12.8)	Taiwan (8.8)	WECs (8.0)	Japan (3.2)
Plastic products	6.19	Hong Kong (71.7)	Taiwan (13.3)	ASEAN (3.3)	WECs (3.3)	USA (3.3)
Electrical machinery & equipment	5.57	Hong Kong (56.5)	Japan (11.1)	Taiwan (10.2)	USA (9.3)	WECs (4.6)
Transport equipment	5.36	Hong Kong (57.7)	USA (13.5)	WECs (8.7)	Taiwan (8.7)	Japan (4.8)
Metal products	5.00	Hong Kong (50.5)	Taiwan (14.4)	USA (11.3)	WECs (10.3)	Japan (5.2)
Food manufacturing	4.02	Hong Kong (46.2)	Taiwan (17.9)	USA (12.8)	WECs (9.0)	Singapore (5.1)
Chemical fibres	3.61	Hong Kong (74.3)	Taiwan (7.1)	WECs (5.7)	ASEAN (4.3)	USA (2.9)
Ferrous metal smelting & pressing	3.20	Hong Kong (74.2)	USA (11.3)	Taiwan (6.5)	Singapore (3.2)	Japan (1.6)
Special equipment	2.99	Hong Kong (53.4)	Taiwan (12.1)	Japan (10.3)	WECs (6.9)	USA (3.4)
Non-ferrous metal smelting & pressing	2.89	Hong Kong (82.1)	Taiwan (10.7)	WECs (1.8)	Japan (1.8)	USA (1.8)
General machinery	2.63	Hong Kong (60.8)	USA (13.7)	WECs (5.9)	Japan (5.9)	Taiwan (5.9)
Food & Feed processing	2.53	Hong Kong (40.8)	ASEAN (32.7)	Singapore (14.3)	Japan (8.2)	USA (4.1)
Beverage manufacturing	2.47	Hong Kong (54.2)	USA (16.7)	Taiwan (10.4)	Singapore (4.2)	WECs (4.2)
Paper & Paper products	2.22	Hong Kong (79.1)	USA (7.0)	ASEAN (4.7)	WECs (2.3)	Taiwan (2.3)
Medical & Pharmaceutical products	2.16	Hong Kong (52.4)	USA (19.0)	WECs (11.9)	ASEAN (7.1)	Taiwan (4.8)
Clothing & other fibre products	1.80	Hong Kong (54.3)	Taiwan (22.9)	USA (8.6)	Japan (5.7)	ASEAN (2.9)
Cultural, Education & Sports goods	1.44	Hong Kong (75.0)	USA (10.7)	Taiwan (7.1)	WECs (3.6)	---
Printing	1.44	Hong Kong (64.3)	Japan (17.9)	Taiwan (14.3)	ASEAN (3.6)	---
Leather & Fur products	1.24	Hong Kong (70.8)	Taiwan (16.7)	WECs (8.3)	USA (4.2)	---
Timber	1.13	Hong Kong (50.0)	Singapore (22.7)	WECs (13.6)	Taiwan (9.1)	ASEAN (4.5)
Rubber products	1.13	Hong Kong (72.7)	Taiwan (13.6)	ASEAN (4.5)	USA (4.5)	---
Instruments & Meters	1.03	Hong Kong (55.0)	USA (25.0)	WECs (10.0)	Japan (5.0)	Taiwan (5.0)
Petroleum refining & Coking	0.72	Hong Kong (78.6)	WECs (14.3)	Taiwan (7.1)	---	---
Furniture manufacturing	0.67	Taiwan (38.5)	Hong Kong (30.8)	Singapore (7.7)	WECs (7.7)	Japan (7.7)
Others	0.57	Hong Kong (81.8)	Taiwan (18.2)	---	---	---
Tobacco processing	0.31	Hong Kong (50.0)	USA (33.3)	WECs (16.7)	---	---
Total	**100.00**	**Hong Kong (64.2)**	**Taiwan (9.3)**	**USA (8.5)**	**WECs (5.4)**	**Japan (4.5)**

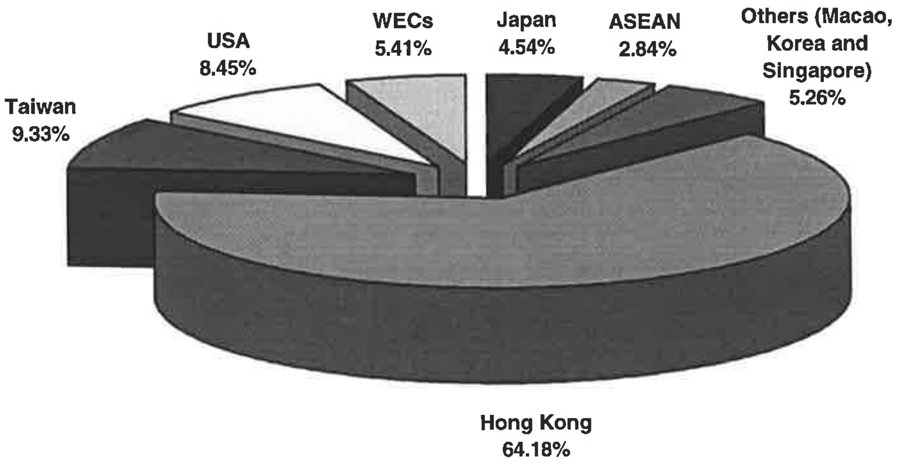
Source: Calculated from Huang Zhengshen, Xie Wenxia and Chen Xianjing (1994), *China 3000 Largest Foreign-Funded Enterprises 1994*, China Reform Publishing House, Beijing.

Figure 5.3 Sectoral composition of the largest FFEs in China's manufactirng (end 1993)



Source: As Table 5.4.

Figure 5.4 Composition of the largest FFEs in manufacturing by the major investors (end 1993)



Source: As Table 5.4.

those in aggregate FDI. Hong Kong still dominates investment in manufacturing with a share as high as 64.2 percent, followed by Taiwan with 9.3 percent, the United States with 8.5 percent, the WECs with 5.4 percent, Japan with 4.5 percent and ASEAN with 2.8 percent. The only exception as compared with the source country composition in aggregate FDI is that Japan's position drops to fifth place while that of the WECs rises to fourth place. This may imply that the WECs invested more in large scale projects in manufacturing in China compared with Japan, such as the several large scale investments in automobiles by Germany and France.

Is the high share of Hong Kong's investments explained by concentration in several large sectors, or does it reflect dominance across all manufacturing sectors? Table 5.4 shows the sectoral composition of the major investors in each of the 29 manufacturing sectors. It is very clear that Hong Kong's dominant position is across all manufacturing sectors. In fact, with the exceptions of furniture-making in which Taiwan holds the largest share of 38.5 percent, and food-manufacturing and food and feed-processing in which Hong Kong's shares are below 50 percent, there is hardly a manufacturing sector in which Hong Kong has not been the largest investor and its shares are above 50 percent and mostly above 60 percent. This is not surprising given Hong Kong's total dominance in FDI in China.

Another way to look at the investor and sector breakdown is to determine the five largest sectors of manufacturing investments of the major investors. Table 5.5 shows the composition of the five largest manufacturing sectors by the major investors. The

Table 5.5 Composition of the five largest manufacturing sectors by the major investors (end 1993)

Country	Composition of the five largest manufacturing sectors (%)				
Hong Kong	Textiles (15.6)	Non-metal mineral products (9.5)	Electronics & Telecom. equipment (8.3)	Plastic products (7.1)	Chemical materials & products (6.2)
Taiwan	Textiles (9.9)	Plastic products (8.8)	Food manufacturing (7.7)	Metal products (7.7)	Electronics & Telecom. equipment (6.6)
Singapore	Food & Feed processing (16.3)	Timber (11.6)	Non-metal mineral products (11.6)	Food manufacturing (9.3)	Electronics & Telecom. equipment (9.3)
ASEAN	Food & Feed processing (29.1)	Food manufacturing (7.3)	Plastic products (7.3)	Electric machinery & equipment (7.3)	Non-metal mineral products (5.5)
WECs	Non-metal mineral products (11.4)	Chemical materials & products (9.5)	Metal products (9.5)	Textiles (9.5)	Transport equipment (8.6)
Japan	Electronic & Telecom. equipment (21.6)	Electric machinery & equipment (13.6)	Textiles (9.1)	Special equipment (6.8)	Non-metal mineral products (6.8)
USA	Electronic & Telecom. equipment (10.3)	Chemical materials & products (9.7)	Transport equipment (8.5)	Non-metal mineral products (8.5)	Textiles (7.3)
LDCs	Textiles (14.2)	Non-metal mineral products (9.3)	Electronics & Telecom. equipment (8.1)	Plastic Products (7.1)	Chemical materials & products (6.0)
DCs	Electronics & Telecom. equipment (11.8)	Non-metal mineral products (9.0)	Chemical materials & products (8.4)	Textiles (8.4)	Transport equipment (7.8)

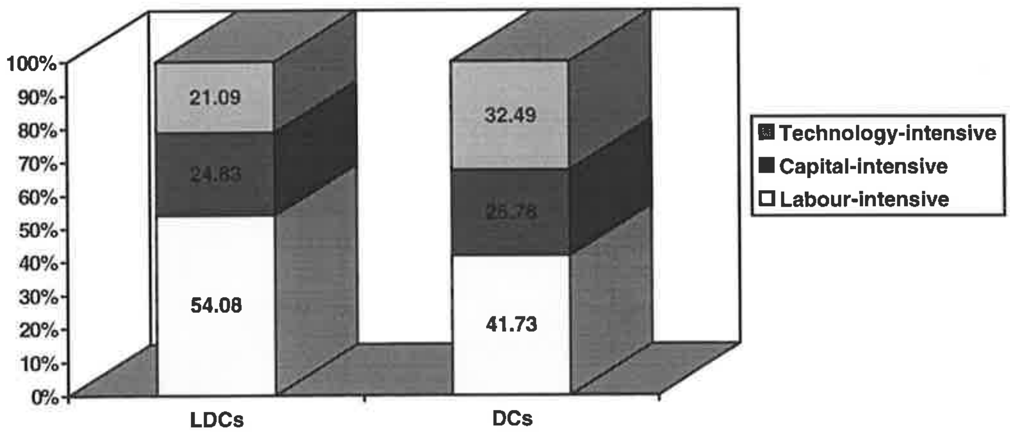
Source: Calculated from Huang Zhengshen, Xie Wenxia and Chen Xianjing (1994), *China 3000 Largest Foreign-Funded Enterprises 1994*, China Reform Publishing House, Beijing.

table indicates that except for ASEAN in food and feed-processing and Japan in electronics and telecommunication equipment in which the sectors' shares in the countries' total investments in manufacturing are above 20 percent, there is no obvious sectoral specialisation or concentration of investments for any of the major investors. However, if we group the five largest sectors for each major investor into labour-intensive and capital-intensive (including technology intensive) sectors and then compare the investment pattern of the major investors, we can find that for Hong Kong the first two largest sectors and three out of the five largest sectors are labour-intensive, for Taiwan, Singapore and ASEAN the first three largest sectors and four out of the five largest sectors are labour-intensive, for the WECs the largest sector is labour-intensive and the second largest sector is capital-intensive, for Japan the first two largest sectors are capital intensive, and finally for the United States the three largest sectors are all capital-intensive sectors. The above comparison reveals that the patterns of investment in China's manufacturing of the developing country investors are relatively more concentrated in labour-intensive sectors, while those of the developed country investors are relatively biased to capital-intensive sectors.

The differences in the patterns of investment in China's manufacturing between the developing country investors and the developed country investors are illustrated in Figure 5.5 and Figure 5.6.

Figure 5.5 illustrates the composition of the three manufacturing sectors of the developing country investors and the developed country investors. For the developing country investors, investments are 54 percent in labour-intensive sectors, 25 percent in capital-intensive sectors and 21 percent in technology-intensive sectors. While for the developed country investors, investments are 42 percent in labour-intensive sectors, 26 percent in capital-intensive sectors and 32 percent in technology-intensive sectors. In other words, more than half (58 percent) of the total investments in China's manufacturing from the developed source countries are in capital-intensive and technology-intensive sectors, and more than half (54 percent) of the total investments in China's manufacturing from the developing source countries are in labour-intensive sectors.

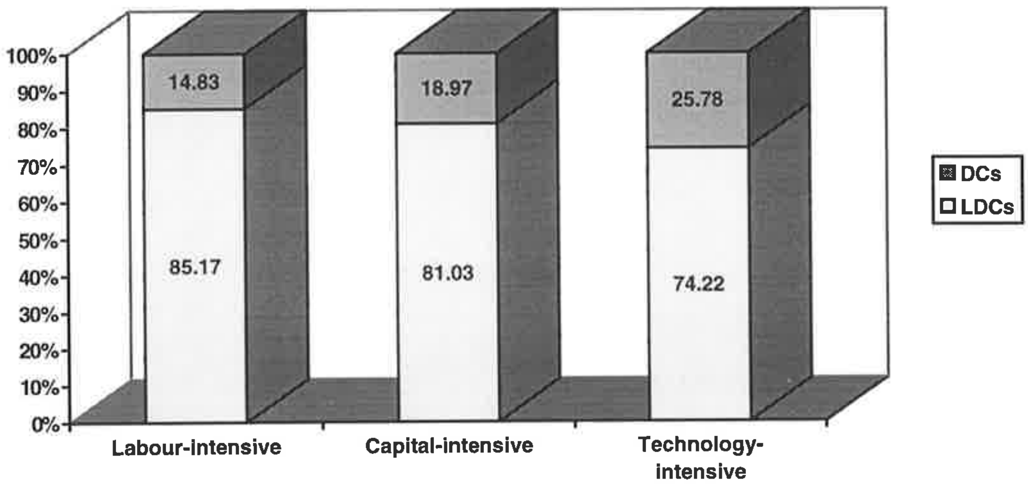
Figure 5.5 Sectoral composition of the largest FFEs in manufacturing by developing and developed source countries (end 1993)



Source: Calculated from Huang Zhengshen, Xie Wenxia and Chen Xianjing (1994), *China 3000 Largest Foreign-Funded Enterprises 1994*, China Reform Publishing House, Beijing.

Another way to look at the difference in the patterns of investment between the developing country investors and the developed country investors is to compare the source country composition by the three manufacturing sectors. Figure 5.6 shows the composition of the developing source countries and the developed source countries in the three manufacturing sectors. It is very clear that, although the developing source countries account for the majority shares of investments in all three manufacturing sectors, with the change of the factor intensity in the three manufacturing sectors from labour-intensive to capital-intensive and to technology-intensive, the share of the developing source countries declines from 85 percent to 81 percent and to 74 percent, while the share of the developed source countries increases from 15 percent to 19 percent and to 26 percent.

Figure 5.6 Composition of developed and developing source countries in the largest FFEs in manufacturing by sectors (end 1993)



Source: Calculated from Huang Zhengshen, Xie Wenxia and Chen Xianjing (1994), *China 3000 Largest Foreign-Funded Enterprises 1994*, China Reform Publishing House, Beijing.

We shall further examine the pattern and determinants of foreign direct investment in China's manufacturing in Chapter 7, but already some points are fairly clear from the analyses above. In general, investments in China's manufacturing from the developing source countries are mainly concentrated in labour-intensive manufacturing sectors, such as textiles, clothing, non-metal mineral products, food and feed processing, food manufacturing, plastic products and metal products. We argue that this might be even more obvious if smaller investments were included. Hong Kong and Taiwan have dominated all other foreign investors in the textile industry. This is not surprising. On the one hand they both have well developed textile industries at home and large established international export markets for this kind of exported-oriented direct investments. On the other hand Hong Kong and Taiwan as well as the other NIEs are losing their comparative advantages in the labour-intensive end of the industry as they are upgrading their industrial structures at home. ASEAN countries' investments in China's manufacturing are concentrated in the sectors of food and feed processing and food manufacturing. This is mainly attributed to the large investments in feed processing of the Chia Tai Group of Thailand.

Investments in China's manufacturing from developed source countries are relatively concentrated in capital and technology intensive sectors, such as electronics and telecommunication equipment, chemical materials and products, electrical machinery and equipment and transport equipment industries. Japan's concentration in electronics not only reflects the advanced technology owned by Japanese firms in that sector but also is consistent with the high reputation and high acceptance of Japanese electronic appliances by Chinese consumers. The largest share of investment in China's manufacturing of the United States is in the electronic and telecommunication equipment sector. This is well explained by the ownership advantages possessed by the firms of the United States, since they have the most superior technology in this industry in the world. In chemicals, high quality international brand name products based on high technology from the United States and Europe lead to the high shares of the United States and WECs in their investments in this sector.

Finally let us examine the patterns of investment in China's manufacturing of the major investors by using the indicators of relative sector investment intensity indexes. The index measures the relative importance of sector j as a host for country i's investment as compared to all manufacturing sectors. If the index is above 100 percent, it indicates that country i's investment in sector j is more than the amount of its share of investment in all manufacturing sectors.

The relative sector investment intensity is defined as follows:

$$SII_{ij} = \left(\frac{I_{ij}}{I_{*j}} \Big/ \frac{I_{i*}}{I_{**}} \right) \times 100$$

where:

SII_{ij} = relative sector investment intensity of source country i in sector j

I_{ij} = investment from source country i in sector j

I_{i*} = investment from source country i in all manufacturing sectors

I_{*j} = investment from all source countries in sector j

I_{**} = investment from all source countries in all manufacturing sectors

Table 5.6 and Table 5.7 present the relative sector investment intensity of the major investors and the developing and the developed source countries in the three manufacturing sectors

Table 5.6 Relative sector investment intensity by source countries (%)

Sectors	ASEAN	NIEs	WECs	Japan	USA
Labour Intensive	130	104	94	72	76
Capital Intensive	59	101	110	60	122
Technology Intensive	78	91	103	205	128

Source: Calculated from Huang Zhengshen, Xie Wenxia and Chen Xianjing (1994), *China 3000 Largest Foreign-Funded Enterprises 1994*, China Reform Publishing House, Beijing.

Note: To avoid problems associated with differences in valuations by the date of the investment, we use the number of enterprises instead of the reported value of the capital invested in the calculations.

Table 5.7 Relative sector investment intensity by LDCs and DCs (%)

Sectors	LDCs	DCs
Labour Intensive	105	80
Capital Intensive	99	104
Technology Intensive	91	140

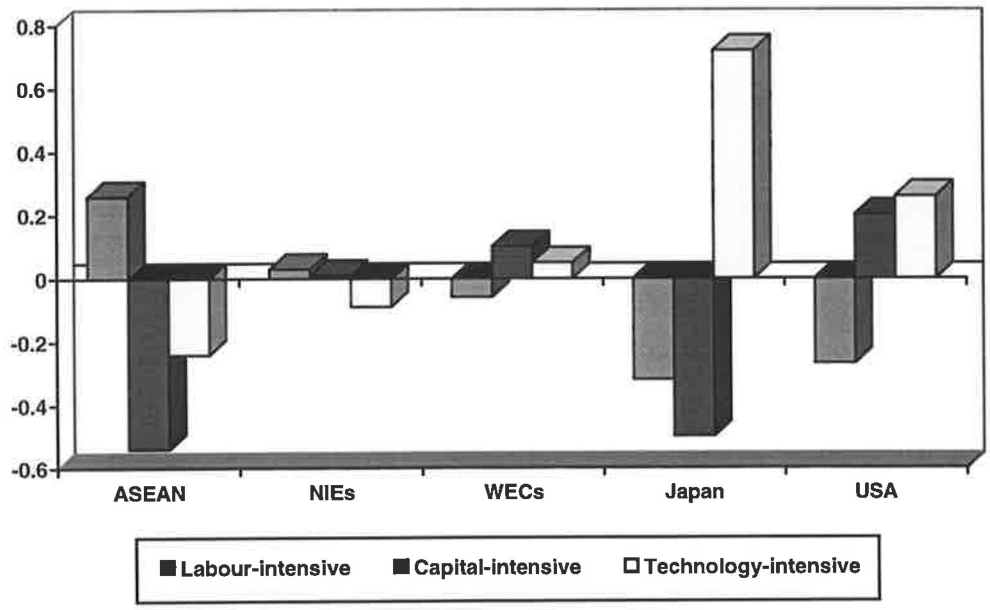
Source: As Table 5.6.

Figure 5.7 and Figure 5.8 are the logarithmic measures of the relative sector investment intensity of the major source countries. The logarithmic transformation is defined as:

$$LSII_{ij} = \ln (SII_{ij})$$

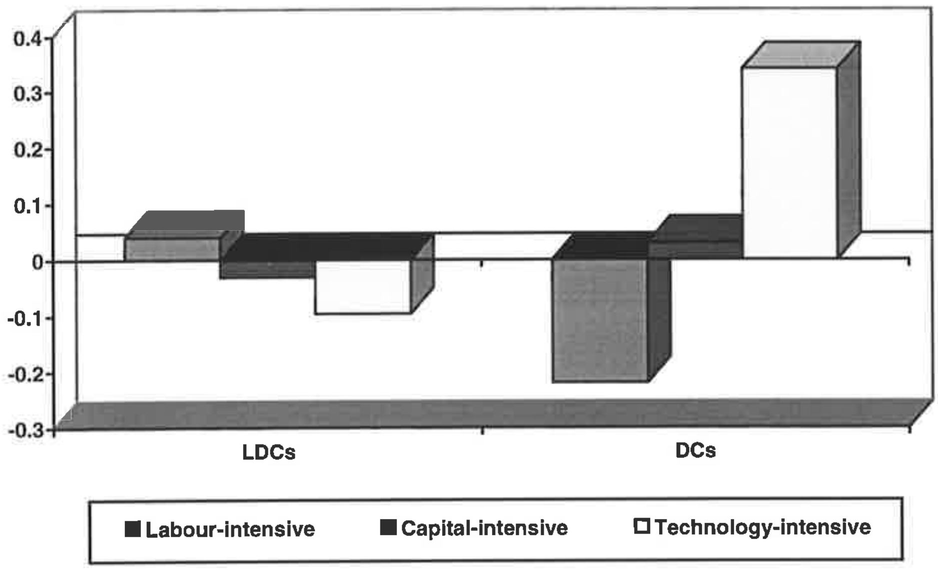
Where $LSII_{ij}$ is the logarithmic measure of the relative sector investment intensity of source country i in sector j.

Figure 5.7 Relative sector investment intensity of source countries (logarithmic measure)



Source: As Table 5.6.

Figure 5.8 Relative sector investment intensity of developing and developed source countries (logarithmic measure)



Source: As Table 5.7.

The tables and the figures illustrate several points. First, following the evolution of the economic and technological development level of various source countries, the relative sector investment intensity changes from the labour-intensive sectors (L) to capital-intensive sectors (K) and to technology-intensive sectors (T), indicating the investment sequence as countries change their proportion of factor endowments and their economic and technological structures. Second, among the major foreign investors, ASEAN countries are at the lowest level of economic and technological development. Their investments are mainly concentrated in the labour intensive sectors. The NIEs' economic and technological development level is in between the ASEAN countries and the developed countries. They are more capital rich than the ASEAN countries, but less endowed with human capital and technology. Therefore, their investment pattern in manufacturing in China is shared between labour and capital intensive sectors, which lies in between the investment pattern of ASEAN countries and that of the developed countries. The investment pattern of the developed countries of WECs, Japan and the United States reflects their comparative advantages in human capital and technology intensive sectors. Third, since the investments from ASEAN and the NIEs are mainly in labour intensive sectors, in which China has comparative advantages, therefore, we can say that the investments of ASEAN and the NIEs in China are mainly export oriented. On the other hand, since the investments from the developed countries are mainly in capital and technology intensive sectors, in which China has comparative disadvantages, therefore, the investments of developed countries in China are mainly domestic market oriented.

5.5 Type of Entry of the Major Investors

Foreign direct investment in China can take four forms, namely contractual-joint ventures, equity-joint ventures, wholly foreign-owned enterprises and joint exploration. However, the term "*Sanzi Qiye*" or "Foreign-Funded Enterprises" (FFEs) only refers to the first three types of enterprises since they are "legal entities" and joint exploration is not included. To compare the type of entry of the major investors, our concern here is to compare the investment choice between joint ventures and wholly foreign-owned enterprises by the major investors.

Do the major investors differ in the investment choice between joint ventures and wholly foreign-owned enterprises? Table 5.8 provides us with the information of the shares of wholly foreign-owned enterprises by the major investors and by the three manufacturing sectors based on the 3000 largest foreign-funded enterprises in China's manufacturing.

Table 5.8 Shares of wholly foreign owned enterprises of the major investors by manufacturing sectors (%)

Source Country	Labour intensive	Capital intensive	Technology intensive	All manufacturing
ASEAN	5.26	11.11	0.00	5.45
Taiwan	17.54	21.43	32.00	20.44
Hong Kong	11.11	11.97	12.64	11.57
WECs	6.90	8.00	27.27	11.43
Japan	21.43	28.57	33.33	26.14
USA	8.11	15.69	23.08	14.02
LDCs	12.34	12.65	14.81	12.76
DCs	10.92	17.31	26.58	16.25
All countries	12.11	13.56	17.97	13.40

Source: Calculated from Huang Zhengshen, Xie Wenxia and Chen Xianjing (1994), *China 3000 Largest Foreign-Funded Enterprises 1994*, China Reform Publishing House, Beijing.

First let us examine the shares of wholly foreign-owned enterprises by the three manufacturing sectors for each of the major investors and investor groups. It is very clear that, apart from ASEAN countries, the shares of wholly foreign-owned enterprises for all other major investors and investor groups show a continuously increasing trend from labour-intensive to capital-intensive and to technology-intensive sectors, and this increasing trend is especially significant for the developed source countries. In other words, the more technology intensive an enterprise is, the more likely it is to be wholly foreign-owned.

Second let us examine the shares of wholly foreign-owned enterprises by the major investors in each of the three manufacturing sectors. Among the major investors Japan has the highest shares and Taiwan has the second highest shares of wholly foreign-owned enterprises in each of the three manufacturing sectors. Following Japan and Taiwan, Hong Kong holds the third place in labour-intensive sectors, the United States holds the third place in capital intensive sectors, and the WECs holds the third place in technology intensive sectors. On average Japan has the highest share of wholly foreign-owned enterprises, followed by Taiwan and the United States. Comparing the two groups of developing and developed source countries, the shares of wholly foreign-owned enterprises of developed source countries are lower in labour-intensive sectors but are much higher in capital-intensive especially in technology-intensive sectors than those of the developing source countries. On average developed source countries have a higher propensity to set up wholly foreign-owned enterprises than developing source countries.

From the above analyses we can draw two main findings. First for a single source country or for the source country groups at the same economic and technological development level, the shares of wholly foreign-owned enterprises in different manufacturing sectors tend to increase with the level of the capital and technology intensity in the manufacturing sector. Second in the same manufacturing sector the shares of wholly foreign-owned enterprises for the various source countries and source country groups tend to increase with the increase of the economic and technological development level of the source countries and the source country groups.

Are these findings valid or consistent with the results based on other information? Table 5.9 provides us with the information of the equity share holdings of the developing and developed source countries based on the 999 approvals of foreign-funded enterprises in 1994.[46] The table reveals that compared with the developing source countries, the developed source countries not only have a higher propensity to hold majority equity shares in joint ventures, but also have a higher propensity to set up wholly foreign-owned enterprises. Thus the basic findings drawn from the two sources are consistent.

Table 5.9 Composition of FFEs of developing and developed source countries by equity share holdings (based on the approvals of 1994)

Equity share of FFEs	Developing country FFEs (%)	Developed country FFEs (%)
under 25%	0.92	0.00
25-<50%	33.80	24.64
50-<75%	39.84	42.32
75-<100%	12.23	15.36
100%	13.21	17.68
Total	**100**	**100**

Source: Calculated from the Editorial Board of the Almanac of China's Foreign Economic Relations and Trade (1995), *Zhongguo Duiwai Jingji Maoyi Nianjian 1995/96* [Almanac of China's Economic Relations and Trade 1995/96], Zhongguo Shehui Chubanshe, Beijing.

[46] The main purpose of the analysis here is to reveal the preference or propensity of foreign investors to control FDI projects through ownership. Therefore, using the information on FDI project approvals is acceptable.

What explains the foreign investors' choices between entering into joint ventures with local partners versus setting up wholly foreign-owned enterprises? The biggest advantage of entering into joint ventures for the multinational enterprises is to reduce the costs of doing business abroad. This is especially important for the multinational enterprises when they enter a new and unfamiliar foreign market. However, entering into joint ventures also incurs various transaction costs, especially when the multinational enterprises possess more advanced and high technology-intensive intangible assets as their ownership advantages. Therefore, the choice of multinational enterprises between entering into joint ventures and setting up wholly foreign-owned enterprises depends on the valuation and judgement of each of the individual multinational enterprises on the benefits and costs between the two modes of entry.

Blomstrom and Zejan (1991, pp. 53-56) in their studies on joint ventures found that multinational firms are less likely to seek a foreign partner when their firms' intangible assets are important. According to Morck and Yeung (1991, pp. 165-187), a firm's intangible assets are roughly the firm's market value less the value of tangible assets such as plant and equipment. These assets can generally be characterised as "knowledge capital" ranging from proprietary product or process know-how to reputations and trademarks (Markusen 1995, pp. 169-189). Since these knowledge-based intangible assets involve very high transaction costs due to market failure and are most likely to produce spill-over effects and externalities due to their nature as public goods, the multinational enterprises are most likely to set up wholly foreign-owned enterprises rather than entering into joint ventures whenever they value the costs of protecting their new and high technology and proprietary products higher than the benefits gained from entering into joint ventures. Therefore, the more the high-technology intensity of the intangible assets, the more important it is for the multinational enterprises to protect such assets, and the more likely it is for the multinational enterprises to set up wholly foreign-owned enterprises rather than to enter into joint ventures with local partners.

We would expect that multinational enterprises from different source countries and in different industries are likely to possess different specific intangible assets. It is reasonable to assume that multinational enterprises from developed source countries possess more new and high technological intangible assets than multinational enterprises from developing source countries, and multinational enterprises in the technology intensive sectors possess more new and high technological intangible assets than multinational enterprises in the labour-intensive sectors. That being the case, it is not very difficult to explain why the shares of wholly foreign-owned enterprises in China's manufacturing are higher in technology intensive sectors than those in labour intensive sectors for all the major investors, and why the shares of wholly foreign-owned enterprises in China's manufacturing are higher for the developed source countries than those for the developing source countries.

5.6 Market Orientation of the Major Investors

In the above analyses we have found that investments in China's manufacturing from the developing source countries are mainly concentrated in labour-intensive sectors and those from the developed source countries are biased towards capital-intensive sectors and technology-intensive sectors. Consequently, we also have inferred that since China has comparative advantages in labour-intensive manufacturing sectors and has comparative disadvantages in capital-intensive and technology-intensive manufacturing sectors, the investments of the developing source countries are mainly export-oriented while the investments of the developed source countries are relatively more domestic market-oriented. Are the affiliates of the developing source countries more export-oriented than the affiliates of the developed source countries?

Unfortunately detailed data for exports and sales of foreign-funded enterprises by source countries are not available. Imai (1995), from the list of the "Largest 500 Foreign-Funded Industrial Enterprises in China in 1993", identified the top 100 foreign-funded industrial enterprises by grouping them into overseas-Chinese affiliates, Western affiliates, Japanese affiliates and the others whose source countries could not be identified. Based on the work of Imai, Table 5.10 shows the total sales, total exports and exports to sales ratios of the affiliates of developing and developed source countries in China in 1993.

The findings from the table are also basically consistent with the findings obtained from the previous analyses. First, the overseas Chinese-affiliates do have higher exports to sales ratios than the developed country affiliates. Second, the very low exports to sales ratio of the developed countries' affiliates does confirm that the developed countries have invested in China mainly for the purpose of targeting the Chinese domestic market.

Table 5.10 Comparison of market orientation of developing and developed country affiliates (1993)

	Overseas Chinese Affiliates	Developed Country Affiliates	Other Affiliates	Total
Number of enterprise (unit)	45	42	13	100
Sales (million yuan)	37944	52530	11526	102000
Exports (million yuan)	8679	7721	4000	20400
Exports to sales ratio (%)	22.87	14.70	34.70	20.00

Source: Calculated from Satoshi Imai (1995), "Comparison of Western, Overseas Chinese, and Japanese Ventures", *JETRO China Newsletter,* No. 119, pp. 15-24.

However, one point needs to be mentioned here. Though the exports to sales ratio of the overseas Chinese affiliates is higher than that of the developed country affiliates, it is not as high as expected. This is mainly because that the samples are not only too small but also strongly biased to the largest foreign-funded enterprises. A relatively large survey (600 firms) of overseas Chinese-funded enterprises in China's three provinces of Guangdong, Fujian and Jiangsu, conducted in 1993 by the East Asia Analytical Unit of the Department of Foreign Affairs and Trade of Australia (EAAU, 1995, pp. 194-234), revealed the strong export preference of the overseas Chinese-funded enterprises and the important role they played in promoting exports in the three provinces. According to the survey, among the 600 overseas Chinese-funded enterprises 67 percent exported more than half of their output. Therefore, the exports to sales ratios of the overseas Chinese affiliates should be much higher if we examine them with larger samples.

5.7 Factor Intensity and Relative Factor Productivity of the Major Investors

Does the production technology differ among the enterprises funded by different source countries? To answer this question we compare the factor intensities and the factor productivity of the overseas non-Chinese-funded enterprises and the overseas Chinese-funded enterprises. The overseas non-Chinese-funded enterprises are the enterprises funded by foreign investors other than overseas Chinese investors.

Table 5.11 shows the factor intensities of Overseas Non-Chinese-Funded Enterprises (ONCEs), Overseas Chinese-Funded Enterprises (OCEs) and the Chinese Domestic Enterprises (DOEs) in industry in 1994. First, both ONCEs and OCEs are larger in the average size of enterprise and have higher average capital-labour ratios or are more capital intensive than China's domestic enterprises. Second, between the two groups of foreign investors, ONCEs have much larger average scale of enterprise and have much higher average capital-labour ratio than OCEs. The above findings have revealed that the production technology and the factor intensity do differ not only between foreign enterprises and China's domestic enterprises, but also between overseas non-Chinese-funded enterprises and the overseas Chinese-funded enterprises.

Table 5.11 Comparison of factor intensity of Overseas Non-Chinese-Funded Enterprises, Overseas Chinese-Funded Enterprises and China's Domestic Enterprises (1994)

Type of enterprises	Number of enterprise	Total capital (million yuan)	Total labour (million)	Average size of enterprise (million yuan)	Average capital/labour ratio (yuan)
ONCEs	12713	359727	2.2387	28.30	160686
OCEs	16388	290836	2.594	17.75	112119
DOEs	436138	5428170	78.4627	12.45	69182

Sources: Calculated from the State Statistical Bureau (1995), *Zhongguo Tongji Nianjian 1995* [China Statistical Yearbook 1995], Zhongguo Tongji Chubanshe, Beijing, and the State Statistical Bureau (1996), *Zhongguo Gongye Jingji Tongji Nianjian 1995* [China Industrial Economic Statistical Yearbook 1995], Zhongguo Tongji Chubanshe, Beijing.

Notes: ONCEs --- Overseas Non-Chinese-Funded Enterprises.
OCEs --- Overseas Chinese-Funded Enterprises
DOEs --- China's Domestic Enterprises

In order to have a further understanding of the difference between the two source country groups, we constructed Table 5.12 to compare their relative factor productivity. The first step is to compare the overseas non-Chinese funded enterprises and the overseas Chinese funded enterprises with the Chinese domestic enterprises, and the second step is to compare overseas non-Chinese funded enterprises with overseas Chinese funded enterprises.

Table 5.12 Relative factor productivity of Overseas Non-Chinese-Funded Enterprises, Overseas Chinese-Funded Enterprises and China's Domestic Enterprises (1994)

	K/N	K/L	V/K	V/L	W/(V/L)
ONCEs/DOEs	2.27	2.32	1.06	2.45	0.56
OCEs/DOEs	1.43	1.62	1.04	1.68	0.79
ONCEs/OCEs	1.59	1.43	1.02	1.46	0.70

Source: As Table 5.11.

Notes: K/N --- Average size of enterprise

K/L --- Average capital to labour ratio

V/K --- Average capital productivity (total value-added over total capital)

V/L --- Average labour productivity (total value-added over total labour)

W/(V/L) --- Efficiency wage (average wage rate over average labour productivity)

The indexes of relative factor productivity in Table 5.12 used to compare these enterprises are:

- average capital productivity measured by total value-added over total capital;
- average labour productivity measured by total value-added over total labour;
- average efficiency wage measured by average wage rate over average labour productivity.

In each case a ratio equal to one implies that the productivity of the relevant enterprises are equal. Higher numbers imply that the enterprise that is on the numerator is more productive, and similarly a lower number implies a less productive organisational form. The one exception is the index of the efficiency wage which should be explained in the opposite way.

In addition, we also provide the indexes of the relative size of enterprise and the relative capital-labour ratio of these enterprises.

When we compare the ONCEs and OCEs with the Chinese domestic enterprises we find that both the ONCEs and OCEs are more capital intensive, have higher capital and labour productivity and have a lower efficiency wage of labour. These results are not surprising, since they confirm the generally accepted theoretical predictions that foreign enterprises, possessing a firm specific advantage, are usually more productive than domestic enterprises.

The interesting part of the comparison is between the ONCEs and OCEs. In terms of labour productivity, ONCEs are around 1.5 times as high as OCEs. Although the ONCEs' absolute wage rate is higher than that of the OCEs, the ONCEs' efficiency wage is considerably lower than that of OCEs, owing to the much higher labour productivity in ONCEs. The possible explanation of this result lies in the much higher capital intensity of ONCEs as compared with OCEs. In fact, the comparison between the capital-labour ratio yields, a figure of 1.43, indicates that the ONCEs are considerably more capital intensive than the OCEs. This makes sense to some extent, since we pointed out earlier that most of the investments from Hong Kong and Taiwan have been in the labour-intensive sector.

5.8 Conclusion

In this chapter we compared the differences among the major source countries with respect to their investments in China. Several main findings are worth emphasising.

First, FDI in China by country of origin, on the one hand, shows significant diversification in terms of the total number of source countries, and on the other hand, it also reveals great concentration in terms of the magnitudes invested by the source countries. In general, Hong Kong as a single investor and the NIEs as a group have been the largest investors among all the source countries and source country groups. The ASEAN countries as a group have increased their investments in China rapidly since the early 1990s. Among the developed source countries, the United States and Japan have been the most important investors in China. They have both shown their growing interest in investment in China since 1993 as they substantially increased their investments in China during 1993 to 1995 compared with their investments in China in the past. The other developed countries have invested very small amounts in China, both in terms of their shares in China's total FDI inflows and in terms of their total investments in the world.

Second, between the two major groups of investors, developing country investors and developed country investors, the developing country investors tend to invest in more labour-intensive industries while the developed country investors relatively tend to invest in more capital and technology intensive industries. This is clearly revealed by the relative sector investment intensity indexes. For the developing country investors, only the labour intensive sector index is above 100 percent, indicating that developing countries' investments in the labour-intensive sector are more than the amount of their share of investments in China's all manufacturing sectors. In other words, the labour-intensive sector is more important as a host sector for developing countries' investments as compared to the capital-intensive and technology-intensive sectors in China's manufacturing. In contrast, for the developed country investors, the relative sector investment intensity indexes are above 100 percent both for the capital-intensive sector and the technology-intensive sector, indicating that the capital-intensive and technology-intensive sectors are more important as host sectors for developed countries' investments as compared to the labour-intensive sector.

Third, the developed country investors tend to have stronger incentives to secure control over the business than the developing country investors. This is reflected by the higher propensity to hold the majority shares in the joint ventures and to set up wholly foreign-owned enterprises of the developed country investors.

Fourth, developing countries' affiliates have a higher export propensity than the developed countries' affiliates. This is consistent with the investment patterns of the source countries, and this also implies that the developed countries have invested in China mainly for the purpose of targeting the Chinese domestic market.

Fifth, the developing country investors in China tend to adopt more labour-intensive technologies than the developed country investors. As revealed by the factor intensities and the factor productivity, the enterprises funded by the developing country investors not only have lower capital to labour ratios but also are much smaller than the enterprises funded by the developed country investors. As a result, the enterprises funded by the developing country investors have lower productivity both in capital productivity and particularly in labour productivity than the enterprises funded by the developed country investors.

However, several questions still need to be considered. Why do investments from developing source countries dominate FDI in China? Why did the developed source countries, particularly the West European Countries, invest very small amounts in China, even though they are the major investors for FDI in the world? We will analyse these questions in the next chapter.

Chapter 6

The Determinants of Investment Intensity of Source Countries in China

6.1 Introduction

In the previous chapter we have identified the major investors in China. In terms of the single investors, Hong Kong, both in aggregate investment and in manufacturing investment, is the largest single investor, followed by Taiwan, the United States, Japan, Singapore, the United Kingdom, and South Korea. In terms of source country groups, the NIEs are the largest investors, followed by the developed country investors, ASEAN investors, and the other developing country investors.

Comparing the two groups of developing source countries and developed source countries, at the year end of 1995, investments from developing source countries accounted for 77.73 percent of China's total inward FDI stock, while investments from developed source countries only accounted for 22.27 percent of China's total inward FDI stock.

Why has China been so successful in attracting FDI inflows from developing countries, especially from Hong Kong and Taiwan, but failed to attract FDI inflows from developed countries, especially from the West European Countries, even though they are the major investors for world FDI? In other words, what factors explain the investment relations between countries in the world?

The structure of this chapter is as follows. In section 6.2 we analyse the investment intensity of source countries in China. The investment intensity index reveals the relative importance of a country as a host for a source country's investment as compared to the rest of the world as a host for the same source country's investment. This index is usually used as an indicator of investment relations between countries. In section 6.3 we put forward some hypotheses and discuss the factors which are thought to be important in determining the investment intensity of source countries in China. In section 6.4 we use regression analysis to test the hypotheses. Section 6.5 concludes this chapter.

6.2 Investment Intensity of Source Countries in China

One way to compare a country' relative importance for its source countries' investments is to calculate the source countries' indexes of investment intensity. The concept of investment intensity originated from the concept of trade intensity. As discussed by Drysdale and Garnaut (1994), the trade intensity analysis was pioneered by Brown (1949) and developed and popularised by Kojima (1964). It uses an intensity of trade index which concentrates attention on variations in bilateral trade levels that result from differential resistances, by abstracting from the effects of the size of the exporting and importing countries. As Drysdale and Garnaut (1994) pointed out, because the trade intensity index is based on the aggregate level of countries' foreign trade, it is a crude index of relative resistances.

Based on the concept of trade intensity index, the equation of investment intensity index is as follows:

$$III_{ij} = \left(\frac{I_{ij}}{I_{*j}} \Big/ \frac{I_{i*}}{I_{**}} \right) \times 100$$

where:

III_{ij} = investment intensity index of i's investment in j

I_{ij} = investment by i (source country) in j (host country)

I_{*j} = investment from the world in j

I_{i*} = investment from i in the world

I_{**} = total investment in the world

The index measures the relative importance of country j as a host for country i's investment as compared to the rest of the world. It can be interpreted as a measure of the relative resistances to FDI flows between countries reflected by the variations in the investment intensity index. If the index is above 100 percent, it indicates that country i's investment in country j is more than the amount of its share of investment in the world. This implies that the relative resistance to FDI flows between country i and country j is lower than those between country i and the rest of the world.

For the case of China, we calculated the investment intensity index between China and the major source countries. First, as shown in Table 6.1, the investment intensity index for the major investors varies enormously. For the period of 1988 to 1994, the investment intensity indexes for Hong Kong, Taiwan, Singapore, South Korea, Thailand, Malaysia, Indonesia, and the Philippines are over 100 percent, indicating that these countries' investments in China have been more than the amount of their shares of investments in the world. In other words, China is more important as a host for these countries' investments as compared to the rest of the world. In contrast, the investment intensity indexes are all below 100 percent for the developed countries, particularly for the Western European countries. However, among the developed countries, the investment intensity indexes of Japan, the United States, Australia and Canada are relatively high compared with those of the Western European countries, which may reflect the regional biases of these countries' investments in the Asian Pacific region.

Table 6.1 Investment intensity index of the major investors in China (%)

Country	1988	1989	1990	1991	1992	1993	1994	1988-94
Hong Kong	na.	4464	5516	3630	1739	799	617	1452
Taiwan	na.	na.	295	1147	1056	1051	1121	840
Singapore	1259	612	222	596	279	516	1188	669
Korea	na.	na.	na.	na.	196	286	229	255
Thailand	1316	1670	349	547	965	851	868	1121
Malaysia	na.	9	9	22	92	55	75	103
Indonesia	na.	517	na.	711	841	na.	5852	2582
Philippines	na.	1627	na.	na.	3974	na.	na.	3844
Japan	79	52	73	79	70	78	76	50
USA	87	71	117	44	22	24	36	42
Canada	6	24	12	9	27	19	30	22
Australia	4	86	638	23	na.	82	21	38
New Zealand	5	na.	26	3	12	na.	29	14
UK	5	5	5	10	3	7	18	10
Germany	6	29	16	32	9	3	8	9
France	8	2	4	2	3	6	6	4
Italy	29	90	4	18	6	11	26	17
Netherlands	16	8	7	2	3	7	6	6
Switzerland	4	7	2	9	9	4	7	6
Norway	172	105	11	15	22	1	9	18
Denmark	145	26	49	na.	9	2	1	7
Austria	6	4	5	1	1	5	5	4
Sweden	na.	2	1	1	14	9	3	2
Spain	na.	7	17	1	2	3	2	3
Belgium	5	na.	9	1	1	5	na.	3
Finland	21	24	4	na.	na.	1	1	3

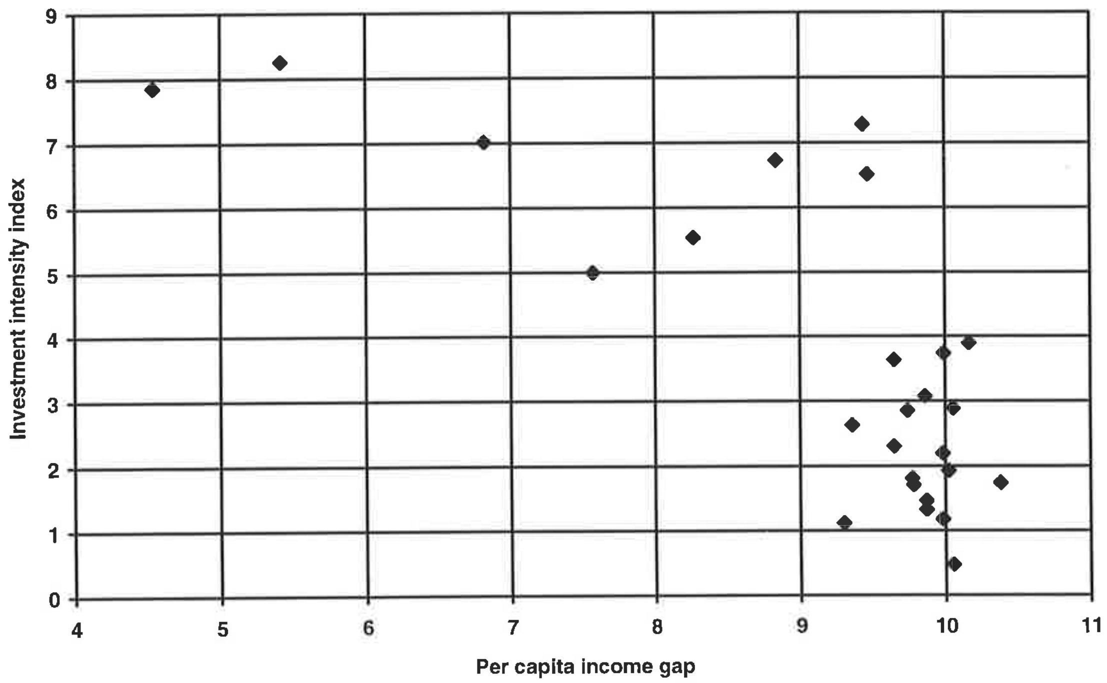
Sources: Calculated from various issues of the Editorial Board of the Almanac of China's Foreign Economic Relations and Trade, *Zhongguo Duiwai Jingji Maoyi Nianjian* [Almanac of China's Economic Relations and Trade], Zhongguo Shehui Chubanshe, Beijing.

The United Nations (1995), *World Investment Report 1995: Transnational Corporations and Competitiveness,* United Nations Publication, United Nations, New York and Geneva, Annex Table 1.

Note: na. = not available.

Second, it is also very interesting to note that the investment intensity indexes are higher for those source countries in which the per capita income gaps between China and themselves are smaller. On the contrary, the investment intensity indexes are lower for those source countries in which the per capita income gaps between China and themselves are larger. The relationship between investment intensity and per capita income gap is demonstrated in Figure 6.1.

Figure 6.1 The relationship between investment intensity and income gap of the major investors in China (1988-94) (logarithmic measure)



Source: As Table 6.1.

6.3 The Determinants of Investment Intensity

--- The Hypotheses

What factors explain the differences in the investment intensity indexes of the various source countries? To answer this question, we first have to make clear what the investment intensity index means. The investment intensity index is one of the indicators of economic proximity which, as we noted in the previous chapter, is a comprehensive conceptual measure of the overall similarities among countries in the world. The factors affecting economic proximity include the geographic distance, cultural difference, and regulatory barriers (Braga and Bannister, 1994). Since the investment intensity index is one of the indicators of economic proximity, the factors affecting economic proximity must affect the investment intensity index as well. In addition, since there is apparent evidence that the bulk of world FDI flows are among countries with similar per capita incomes and similar relative factor endowments (Markusen, 1995), we take the economic and technological gap among countries as one of the important factors affecting the investment intensity index.

Can these factors explain the differences of the investment intensity indexes of the various source countries in China? Based on the above discussion, we make the following hypotheses.

Hypothesis 1. The value of investment intensity index of a source country in China is negatively related to the gap of economic and technological development levels between China and that source country.

Hypothesis 2. The value of investment intensity index of a source country in China is positively related to the levels of economic proximity between China and that source country.

Based on hypothesis 1, the differences in per capita income between China and the source countries are used as the proxy for the gap of economic and technological development levels between China and the source countries. The differences in per capita income, defined as DPCI, is the average per capita income difference from 1988 to 1994 at 1987 constant US dollars. The per capita income difference (DPCI) is expected to be negatively related to the investment intensity index.

Based on hypothesis 2, the geographic distance between China and each of the source countries is used as a proxy for the transport and communication costs. The geographic distance, defined as DIST, is expected to be negatively related to the investment intensity index.

The cultural difference between China and each of the source countries is represented by a dummy variable defined as OSC. We give a value of one for the countries in which the shares of private, non-land capital of the overseas Chinese are more than 50 percent of the total.[47] The cultural difference is expected to be positively related to the investment intensity index.

A dummy variable, Asian Pacific region, defined as AP, is used to test the regional effect on investment intensity index. We give a value of one for the source countries within this region and zero otherwise.

Table 6.2 Summary list of variables

Variable name	Description	Unit and value	Expected effect
Dependent variable			
III_{ij}	Investment intensity index of country i in country j (China).	Percentage index	
Independent variables			
$DPCI_{ij}$	Difference in per capita income between country i and China.	US dollars per capita at 1987 prices.	Negative
$DIST_{ij}$	Geographic distance between country i and China.	Proportionately reduced measurement scales	Negative
OSC_i	Dummy variable for countries in which the share of private, non-land capital of overseas Chinese is more than 50 percent.	One for Hong Kong, Taiwan, Singapore, Thailand, Malaysia, Indonesia, and the Philippines, zero for other countries.	Positive
AP_i	Dummy variable for the countries in Asian Pacific region.	One for countries in this region, zero otherwise.	Positive

[47] The shares of private, non-land capital of Singapore, Malaysia, Thailand, the Philippines and Indonesia are from *Far Eastern Economic Review* (1995), "Work hard, make money", August 31, pp. 61-62.

6.4 Regression Analysis and Explanation

To test the hypotheses, we use the multi-regression analysis method. The dependent variable is the aggregate investment intensity index for the period of 1988-94 defined as III, the independent variables are defined as above, and there are 26 cross-sectional observations available.

As the case in the study of trade intensity,[48] we use the log-linear equation as the functional form relating the investment intensity index and the resistance variables (explanatory variables) in this study. The regression equation is defined as:

$$\ln III_{ij} = \beta_0 + \beta_1 \ln DPCI_{ij} + \beta_2 \ln DIST_{ij} + \beta_3 OSC_i + \beta_4 AP_i + \varepsilon_{ij} \qquad (6.1)$$

where ε_{ij} is the stochastic disturbance, the βs are the regression parameters to be estimated, and the variables are as defined above.

Using ordinary least squares (OLS) cross-section regression analysis with White's (1980) heteroskedasticity-consistent covariance matrix correction for unknown form of heteroskedasticity, the regression results for the determinants of the investment intensity index of the 26 major foreign investors in China are presented in Table 6.3.

[48] Yamazawa (1971) used a log-linear equation to estimate the relationship between complementarity as measured by the Drysdale index and a large number of resistance variables to trade intensity. For more detailed discussion see Drysdale and Garnaut (1994).

Table 6.3 Investment intensity regression results

Variables	Model 1	Model 2	Model 3	Model 4
Constant	17.117	11.158	12.766	7.8494
	(22.79)***	(4.537)***	(12.52)***	(5.520)***
LnDPCI	-0.95851	-0.57862	-0.73991	-0.42247
	(-11.16)***	(-3.544)***	(-9.659)***	(-4.523)***
LnDIST	-1.1932	-0.71641	-0.82163	-0.42987
	(-8.269)***	(-2.979)***	(-8.256)***	(-3.403)***
OSC		2.2906		2.0043
		(2.642)**		(4.199)***
AP			1.7937	1.6709
			(4.322)***	(5.636)***
Adjusted R^2	0.82	0.86	0.90	0.93
DF	23	22	22	21
F - statistics	57.316	52.810	74.477	89.503

Notes: Adjusted White's heteroskedasticity-consistent t-statistics in brackets.

*** statistically significant at 0.01 level.

** statistically significant at 0.05 level.

Since we used the "OLS" cross-section regression with a relatively small sample of 26 observations, before we draw any conclusion from the regression results, we apply some diagnostic tests in our estimated model to justify the adequacy of our estimated model for the description of the variations of investment intensity indexes of the major investors in China. Since the data under study is a cross-section regression, we mainly apply the diagnostic tests of heteroscedasticity, functional form, and normality in our estimated model, and the model to be tested is model 4 in Table 6.3.

Heteroscedasticity

We have already used the heteroskedasticity-consistent covariance matrix correction proposed by White (1980) for the unknown form of heteroscedasticity in our regression. However, a test for heteroscedasticity is still useful for us to know whether heteroscedasticity is absent or not in our model. Table 6.4 reports the heteroscedasticity test results obtained by using SHAZAM with HET option.

Table 6.4 Test results for heteroscedasticity of Model 4

Tests	Test Statistics	95% Critical Value
B-P-G	X^2 (4) = 3.482	9.48773
ARCH	X^2 (1) = 0.291	3.84146
Harvey	X^2 (4) = 1.512	9.48773
Glejser	X^2 (4) = 3.259	9.48773

The null hypothesis of the above tests is no heteroscedasticity. All the test statistics reported in Table 6.4 are smaller than the 95 percent critical values, the null hypothesis of no heteroscedasticity cannot be rejected at 0.05 level of significance. Therefore, there is no obvious evidence of heteroscedasticity in the model. Since White heteroscedastic consistent t-statistics make it possible to perform statistical inference on individual coefficients without knowing the form of the heteroscedasticity, and also since in the absence of heteroscedasticity, the OLS and White t-statistics are anticipated to be of similar magnitude, therefore, we still use the White t-statistics for the statistical inference on the coefficients of our regression, even though we have tested that there is no obvious evidence of heteroscedasticity in our model.

Functional Form

We use Ramsey's (1969) RESET test for the functional form of model 4. The RESET test has power against many forms of functional form misspecification. Table 6.5 reports the functional form test results obtained by using SHAZAM with RESET option.

Table 6.5 Test results for functional form of Model 4

Ramsey RESET Specification Tests Using Powers of $\hat{Y}$	Test Statistics	95% Critical Value
RESET (2)	F(1,20) = 0.37589	4.35
RESET (3)	F(2,19) = 0.34138	3.52
RESET (4)	F(3,18) = 0.50600	3.16

The null hypothesis of Ramsey RESET test is no functional form misspecification. The test statistics reported in Table 6.5 are all smaller than the 95 percent critical values, therefore, the null hypothesis of no functional form misspecification cannot be rejected at the 0.05 level of significance. Consequently, we conclude that there is no functional form misspecification in model 4.

Normality

Since in this study our the sample size is relatively small with only 26 observations, the normality test is very important. In this study we use both the Goodness-of-fit test for normality of residuals and the Jarque-Bera asymptotic LM normality test. The test results are reported in Table 6.6.

Table 6.6 Test results for normality of Model 4

Normality Tests	Test Statistics	95% Critical Value
Goodness-of-fit test	X^2 (3) = 1.9041	7.81473
Jarque-Bera test	X^2 (2) = 0.1243	5.99146

The null hypothesis of the two normality tests is error normally distributed. Since the test statistics reported in Table 6.6 are all smaller than the 95 percent critical value, the null hypothesis of error normally distributed cannot be rejected at the 0.05 level of significance.

The log-linear form equation of the investment intensity of the source countries in China performs quite well against a number of diagnostic tests. Therefore, we accept this model as an adequate representation of the investment intensity of the source countries in China.

Based on the above justification, we now interpret the regression results. The regressions performed very well. All the independent variables are statistically significant and have the expected signs. In general, the per capita income gap between China and the source countries has a negative impact on the investment intensity index. This implies that FDI flows are negatively related to the differences of the economic and technological development levels among countries. This result is consistent with the findings obtained by Markusen (1995) that the bulk of FDI is among countries with similar per capita incomes and similar relative factor endowments. This has partially explained the low levels of investment of the developed countries in China.

The distance between China and the source countries, the proxy of transport and communication costs, is an important constraining factor affecting the investment intensities of source countries in China. In contrast, the existence of overseas Chinese relations has positive impact on the investment intensities of source countries in China. Thus our results have provided support for Caves' view that: "... the bulk of foreign investments go where the transactional and information-cost disadvantages are least." (Caves, 1982).

The positive Asian Pacific regional dummy shows that the countries within this region invested more in China than the countries outside this region. This implies that the countries tend to invest more in the region where they belong. This result is also consistent with other studies. For example, Braga and Bannister (1994) found that the investment intensities among East Asian countries have significantly increased during 1980s. The result also has partially explained the relatively higher investment intensities in China of the United States, Japan, Australia and Canada as compared to other developed countries, especially the Western European countries.

In general, the regressions provided strong support for our hypotheses set out above. The investment intensities in China of the source countries are negatively related to the gap of the economic and technological development levels and are positively related to the levels of economic proximity between China and the source countries.

With the regression results we can now give some explanation for the differences of investment intensities in China of the various source countries.

Since the NIEs' investments, particularly Hong Kong's investment, have been the largest part of the story of foreign direct investment in China, it is worth looking at the NIEs' investments in a little more detail. The remarkable intensities of the NIEs' investments in China are well explained by the factors of the gap of economic and technological development levels and the levels of economic proximity between China and the NIEs.

First, it is generally agreed that the economic and technological development levels of the NIEs are above that of China but lower than that of the developed countries. In the last two decades the NIEs have been developing their economies relatively faster than other developing countries. This has led to both a rapid accumulation of human and physical capital and a rapid rise in real wages in the NIEs' economies. The changes in resource endowments of production factors have led to a process of economic restructuring and technological upgrading in the NIEs. Consequently, many labour-intensive industries have lost competitiveness, and investment abroad was seen as a means of utilising accumulated managerial, technical expertise and the established export markets by these industries. Coincidently, China with abundant labour supply has a comparative advantage in labour-intensive activities. The labour-intensive production technology and the well established international export markets of the NIEs are well suited to what China needs to realise its comparative advantages and to promote its international exports. Therefore, China is a good location for the NIE investors to explore overseas investment opportunities.

The second factor was the high proximity of Hong Kong, Taiwan, and to a less extent Singapore and South Korea with China. The common Chinese culture, language and close geographical distance greatly reduced the costs of doing business in China for these investors.

The rapid increase and the high investment intensities in China from ASEAN countries (Thailand, the Philippines, Malaysia, Indonesia) in the late 1980s and early 1990s resembled the early pattern of the NIEs investments in most respects. In general, the changing domestic economic structures and the extensive Chinese business networks[49] have led to and facilitated the companies of ASEAN countries to venture in China.

Investments from developed countries are somewhat different from that of the NIEs and other developing countries. This is because, first, the economic and technological gap between the developed countries and China is relatively large and the transfer of technology is hampered to a certain extent by the appropriateness of the technology. Second, the firms of developed countries usually possess more advanced technology and production techniques. Since the legal network for protecting property rights in China is poor, the firms from the developed countries possessing advanced technology and production techniques are reluctant to invest in China. Third, the developed countries, especially Western European countries have little proximity with China, therefore the costs for their firms to do business are relatively high. As a result, they are very prudent in setting up ventures in China. Consequently, the magnitudes and the intensities of investment from developed countries in China are very low compared with their total investments in the world. However, compared with other developed countries especially the Western European countries, the intensities of investments in China from Japan, the United States, Australia and Canada are relatively high. This reveals the regional investment bias of these countries towards the Asian Pacific region.

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[49] For more detailed analysis on overseas Chinese business networks see EAAU (1995), *Overseas Chinese Business Networks in Asia,* EAAU, Department of Foreign Affairs and Trade, Canberra, Australia.

6.5 Conclusion

In this chapter we analysed the difference of investment intensity of the source countries, and tested the determinants affecting the variations of the investment intensity indexes of the source countries in China. The investment intensity index measures the investment relations between China and its source countries by comparing the relative importance of China as a host for the source countries' investments as compared to the rest of the world as hosts for these countries' investment. The investment intensity index provides a very useful method in analysing the resistance factors influencing the investment flows between countries. The study reveals several main findings.

First, the investment intensity index of the source countries in China varies enormously. However, comparing the two major source country groups of developing source countries and developed source countries, the investment intensity indexes of the developing source countries are all above 100 percent and are much higher than those of the developed source countries. This implies that China is more important as a host for the developing source countries' investments than for the developed source countries' investments.

Second, what factors explain the differences of the intensities of investments in China of the major investors? The regression analyses provided strong support for our two hypotheses. In general, the economic and technological development gaps and the levels of economic proximity are important factors affecting FDI flows between countries.

Third, on the one hand, since the economic proximity is positively related to the investment intensity between countries, the high economic proximity between China and the East and South-East Asian countries, particularly Hong Kong and Taiwan, implies that China will remain a very important host country for the investments from these countries. On the other hand, with the sustained and fast economic growth in China, combined with the huge inflows of FDI and technology into its domestic economy, the economic and technological development gaps between China and the developed countries will tend to be reduced. As a result, China will become a more important host country for the FDI from the developed source countries in the near future.

Finally, through the analyses of Chapter 5 and this chapter, the Chinese case has offered valuable evidence on the differences among foreign investors. The distinctive features of developing country investments as compared to the developed country investments are confirmed. The diversity of foreign investors suggests that there is considerable scope for China to introduce and absorb foreign capital, technology, and management in many industries. However, into which industries that foreign direct investment will flow will also depend on the special characteristics of each industry in China. Therefore, in the next chapter we will discuss and analyse the location determinants of FDI distribution in manufacturing in China.

Chapter 7

The Composition and Location Determinants of Foreign Direct Investment in China's Manufacturing

7.1 Introduction

In the previous chapters we have analysed FDI in China in aggregate and in terms of the investment patterns of the major investors. This chapter will deepen our analyses of FDI in China by focusing on the manufacturing sector.

This chapter will address these questions. How important is manufacturing FDI in China? What is the industrial composition, and how significant is FDI in China's manufacturing? What are the location determinants of FDI in China's manufacturing? It is structured as follows. In section 7.2 we will examine the importance of manufacturing FDI in China's economic sectors. Section 7.3 analyses the industrial distribution of FDI and compares the industrial structure of foreign-funded enterprises (FFEs) with domestic enterprises (DOEs). Section 7.4 analyses the relative importance of FFEs in China's manufacturing industries and examines the inter-industry variations of the shares of FFEs. In section 7.5 we conduct an empirical test in an attempt to identify the location determinants of the industrial investment pattern of FDI in China's manufacturing. Section 7.6 summarises this chapter and gives the main findings.

7.2 The Importance of Manufacturing FDI in China's Economic Sectors

How important has the manufacturing sector been in total FDI in China? The data for sectoral distribution of realised FDI in China are not available. However, according to the contracted data, from 1983 to 1995 the manufacturing sector has been the largest and the most important recipient of the total FDI in China both in accumulated FDI stocks and in annual FDI inflows among all economic sectors.[50]

In terms of the accumulated FDI stocks, as Table 7.1 and Figure 7.1 show, at the end of 1995, the manufacturing sector had attracted 56.67 percent of the total

[50] We acknowledge the possible bias resulting from using contracted FDI in the analysis. However, since we use the contracted FDI data for all economic sectors, the possible data problem will not fundamentally alter the result that the manufacturing sector has been the largest and the most important economic sector in receiving FDI among all other sectors in China's economy.

Table 7.1 Sectoral distribution of contracted FDI inflows in China (%)

Year	Agriculture	Manufacturing	Construction	Transport & Telecom.	Commerce	Real Estate	Health, Edu. & Sciences	Others
1983	0.93	66.89	2.96	3.13	2.05	4.95	19.10	0.00
1984	2.74	21.97	2.71	2.92	3.83	33.46	32.37	0.00
1985	1.99	37.65	2.09	1.67	8.31	35.85	0.99	11.45
1986	3.13	37.07	1.58	1.00	3.01	48.56	1.72	3.92
1987	3.98	52.34	1.27	0.38	0.68	34.06	0.61	6.69
1988	4.08	77.61	1.92	1.47	1.04	8.56	0.92	4.40
1989	2.10	84.47	1.06	0.83	1.07	8.32	0.74	1.40
1990	1.98	85.07	2.59	0.52	1.53	6.48	1.07	0.76
1991	1.82	80.95	1.08	0.80	1.41	12.11	1.12	0.71
1992	1.26	56.53	3.13	2.63	2.46	30.78	0.94	2.27
1993	1.09	46.12	3.46	1.36	4.11	39.09	1.36	3.40
1994	1.18	53.31	2.88	2.44	4.72	28.72	3.45	3.30
1995	1.90	67.54	2.10	1.86	3.75	19.54	1.60	1.71
Total	**1.52**	**56.67**	**2.74**	**1.85**	**3.67**	**28.54**	**2.15**	**2.85**

Sources: Data for 1983-91 are calculated from the State Statistical Bureau (1992), *Zhongguo Duiwai Jingji Tongji Daquan 1979-1991* [China Foreign Economic Statistics 1979-1991], China Statistical Information and Consultancy Service Centre, Beijing, pp. 314-316.

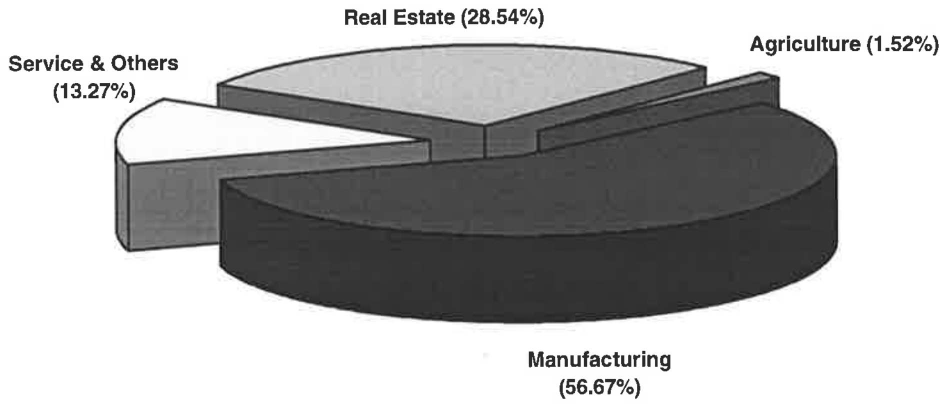
Data for 1992-93 are calculated from the State Statistical Bureau (1995), *Zhongguo Duiwai Jingji Tongji Nianjian 1994* [China Foreign Economic Statistical Yearbook 1994], Zhongguo Tongji Chubanshe, Beijing, p. 263.

Data for 1994 are calculated from the Editorial Board of the Almanac of China's Foreign Economic Relations and Trade (1995), *Zhongguo Duiwai Jingji Maoyi Nianjian 1995* [Almanac of China's Economic Relations and Trade 1995], Zhongguo Shehui Chubanshe, Beijing, p. 659.

Data for 1995 are calculated from the State Statistical Bureau (1996), *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996], Zhongguo Tongji Chubanshe, Beijing, p.603.

Note: The shares of total FDI from 1983 to 1995 are calculated at 1980 constant US dollar prices.

Figure 7.1 Sectoral distribution of accumulated FDI stocks in China (1983-1995)

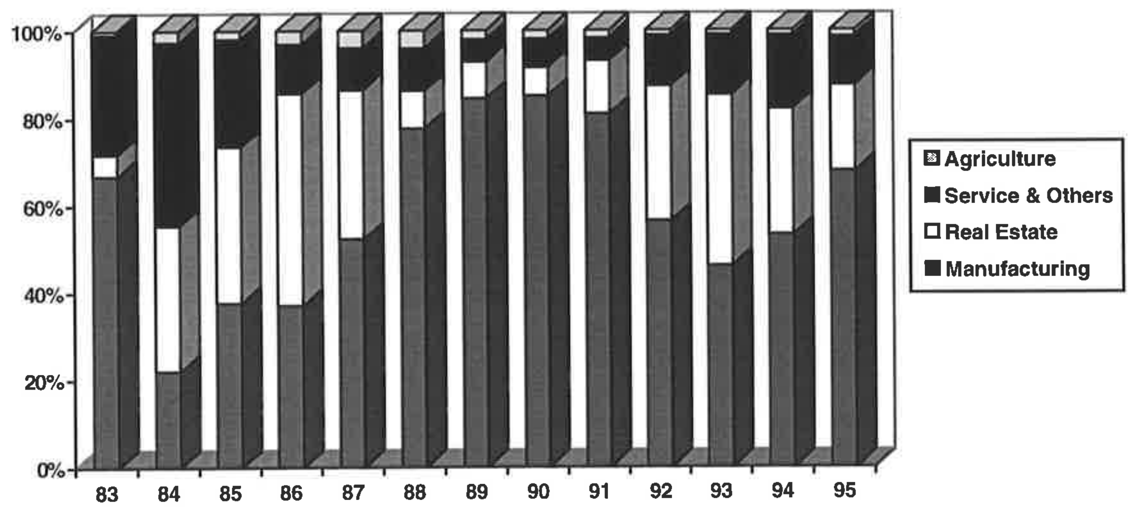


Source: As Table 7.1.

accumulated FDI stocks in China. However, another important FDI recipient is the real estate sector. It had attracted 28.54 percent of the total accumulated FDI stocks. Since the manufacturing and the real estate sectors have taken the overwhelming shares (85.21 percent) of the total FDI stocks, foreign investments in the other economic sectors have been very small, 1.52 percent for agriculture, 2.74 percent for construction, 1.85 percent for transport and telecommunications, 3.67 percent for commerce, 2.15 percent for health, education and sciences, and 2.85 percent for others.

In terms of the annual FDI inflows, as Table 7.1 and Figure 7.2 show, the manufacturing sector also has been the largest recipient of annual FDI inflows into China, but its share in the total annual FDI inflows has fluctuated. In the early stage of FDI inflows into China, the manufacturing sector was the main recipient of foreign investment. In 1983, it attracted 67 percent of the total FDI inflows into China. However, during 1984 to 1986, the share of the manufacturing sector in the total annual FDI inflows declined to around 22 - 37 percent. Starting from 1987, the share of the manufacturing sector in the total annual FDI inflows into China increased very rapidly and was above 80 percent for three successive years from 1989 to 1991. After that its share fell back to around over 50 percent from 1992 to 1995.

Figure 7.2 Changes in sectoral composition of FDI inflows into China (1983-1995)



Source: As Table 7.1.

Although the manufacturing sector has dominated the FDI inflows into China, the real estate sector has been a strong second to the manufacturing sector in attracting FDI inflows. The interesting thing is that the changes in sectoral distribution of FDI inflows into China have been dominated by the share changes between the manufacturing and the real estate sectors. From 1984 to 1987, accompanying the overheating of economic growth in China, the FDI inflows into the real estate sector increased substantially. It attracted more than one third of the total annual FDI inflows into China during this period, reaching the highest record of 49 percent in 1986. During the same period, the share of annual FDI inflow into the manufacturing sector declined correspondingly and reached the lowest record of 22 percent in 1984. In 1988, fighting against high inflation, the Chinese government introduced tighter macroeconomic control policies. As a result, the real estate sector contracted very sharply. From 1988 to 1991, the share of annual FDI inflow into the real estate sector was less than 10 percent. In contrast, the manufacturing sector share was more than 80 percent in the same period. Starting from 1992, with another economic boom in China, the real estate sector regained its momentum in attracting FDI. Its share of FDI inflows increased from 12 percent in 1991 up to 39 percent in 1993 and then declined in 1994 and 1995 as FDI inflows into the manufacturing sector increased. Despite the share changes between the manufacturing and the real estate sectors, their combined shares have been above 80 percent of the total annual FDI inflows into China, and the manufacturing sector has been the largest and the most important sector receiving foreign direct investment among all the economic sectors in China.

7.3 Industrial Distribution of FDI in Manufacturing

Since the manufacturing sector is the main recipient of FDI inflows in China, its industrial distribution has special significance. Unfortunately, the data of FDI inflows into each industry of the manufacturing sector are not available. However, to analyse the industrial distribution of foreign investments we can use the total assets of Foreign-Funded Enterprises (FFEs) in the manufacturing sector.[51] The data are from the *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996] published by the State Statistical Bureau (SSB). To date, this is the only most systematic and comprehensive statistical data on FFEs in the manufacturing sector of China.

With the data we will analyse and answer four main questions in this section. First which industries were the major recipients of FDI in China's manufacturing sector up to 1995? Second what is the general pattern of industrial distribution of FFEs in terms of the factor intensities of industry groups? Third does the industrial distribution of FFEs differ as compared with that of China's domestic enterprises (DOEs), if so what are the characteristics of the industrial structure of FFEs? Finally what are the impacts and the implications of the investment pattern of FFEs on the overall industrial structure of China's manufacturing sector?

Table 7.2 presents the industrial distribution of FFEs and DOEs in manufacturing sector based on the total assets at the year end of 1995.

[51] Total assets refers to all assets which are owned or controlled by corporations, including circulating assets, long-term investment, fixed assets, intangible assets and deferred assets, other long-term assets, etc.. The summation of above items is equal to total assets shown in corporations' balance sheets (SSB, China Statistical Yearbook 1996, p. 452).

Table 7.2 Industrial distribution of FFEs and DOEs in manufacturing (end 1995, percent)

Industries	Foreign-Funded Enterprises	Domestic Enterprises
Food processing	4.55	4.16
Food manufacturing	3.28	1.63
Beverage manufacturing	3.65	2.55
Tobacco processing	0.10	2.46
Textile	8.59	8.75
Clothing & other fibre products	5.01	1.29
Leather & Fur products	3.34	0.91
Timber processing	1.30	0.67
Furniture	0.77	0.33
Paper & Paper products	2.21	2.10
Printing	1.14	0.97
Cultural, Education & Sports goods	1.33	0.42
Petroleum refining & Coking	0.26	3.70
Chemical materials & products	5.38	8.82
Medical & Pharmaceutical products	2.29	2.24
Chemical fibre	1.57	2.09
Rubber Products	1.59	1.12
Plastic products	4.06	1.62
Non-metal mineral products	6.55	7.88
Ferrous metal smelting & pressing	2.53	12.38
Non-ferrous metal smelting & pressing	1.61	2.98
Metal products	4.77	2.71
General machinery	4.03	6.18
Special machinery	1.77	4.67
Transport equipment	7.62	7.15
Electrical machinery & equipment	6.05	4.93
Electronics & Telecom. equipment	11.29	3.33
Instruments & Meters	1.43	1.08
Others	1.93	0.88
Total	**100**	**100**

Sources: Calculated from the State Statistical Bureau, *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996].

Note: The calculation is based on the total assets at the year end of 1995.

First we should point out that the overall industrial distribution of FFEs in China's manufacturing sector in terms of the total assets has much the same structure as the industrial distribution of the 3000 largest FFEs in terms of the number of enterprises analysed in Chapter 5. Therefore, these two sets of data are consistent with each other, which provides support for our use of that subset in our comparison of source countries.

Which industries are the major recipients of FDI in China's manufacturing sector? Based on the information of the total assets of FFEs in China's manufacturing presented in Table 7.2, among the twenty-nine industries, the electronics and telecommunication equipment industry and the textile industry have received the largest amount of foreign investments, accounting for 11.29 percent and 8.59 percent of the total assets of FFEs respectively. There has also been a relatively large amount of foreign investment in transport equipment (7.62 percent), non-metallic mineral products (6.55 percent), electrical machinery and equipment (6.05 percent), chemical materials and products (5.38 percent), and clothing and other fibre products (5.01 percent) industries. Together the above accounted for 50.49 percent of the total. The remaining 22 industries each had less than 5 percent, with some below 1 percent.

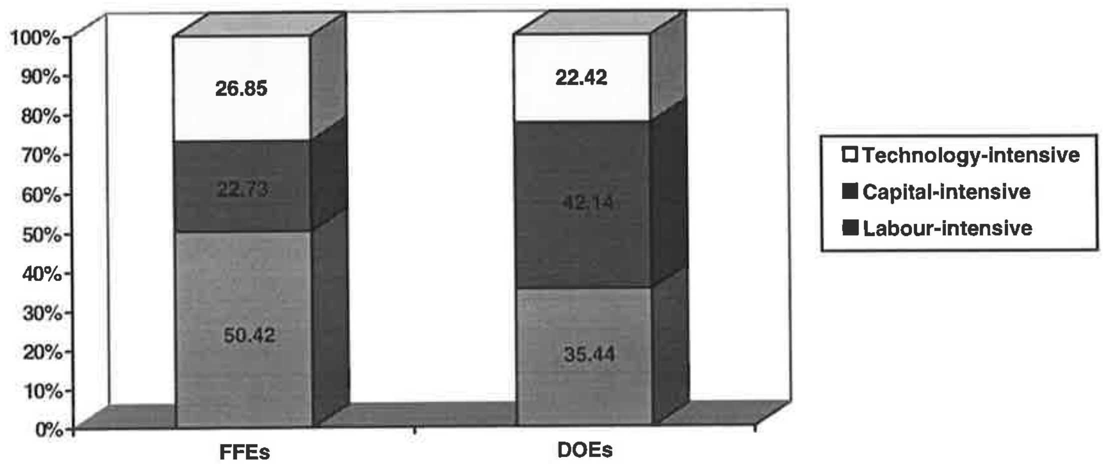
What is the general pattern of the industrial distribution of FFEs in China's manufacturing in terms of production factor intensity of industry groups? As Table 7.3 and Figure 7.3 show, in terms of the total assets, FFEs were mainly concentrated in labour-intensive industries, accounting for 50.42 percent. As a result, capital-intensive industries and technology intensive industries only received relatively small amounts of the total manufacturing FDI, accounting for 22.73 percent and 26.85 percent respectively. It is also interesting to note that the industrial distribution of foreign investment in China's manufacturing based on the number of the 3000 largest FFEs analysed in Chapter 5 was 51.81 percent in labour intensive industries, 25 percent in capital intensive industries, and 23.19 percent in technology intensive industries. Again the analyses from the two sets of data are consistent.

Table 7.3 Industrial distribution of FFEs and DOEs by factor intensity of industry groups (end 1995, percent)

Industry groups	Foreign-Funded Enterprises	Domestic Enterprises
Labour-intensive industries	50.42	35.44
Capital-intensive industries	22.73	42.14
Technology intensive industries	26.85	22.42
Total	**100**	**100**

Source: As Table 7.2.

Figure 7.3 Composition of FFEs and DOEs by factor intensity of industry groups (end 1995)



Source: As Table 7.3.

How does the industrial structure of FFEs compare with that of the DOEs? From Table 7.2 and Table 7.3 we can see that there are clear differences in industrial structure between FFEs and DOEs. Two key differences are worth mentioning. First, in terms of the factor intensity of industries, the industrial structure of FFEs is more biased towards labour-intensive industries compared to the DOEs. In terms of aggregate capital stocks, half (50.42 percent) of the FFEs are in labour-intensive industries and, in contrast, two-thirds (64.56 percent) of the DOEs are in capital and technology-intensive industries.

Second, in the capital and technology intensive industries, FFEs are relatively more concentrated in the newly developing and fast growing industries such as electronics and telecommunication equipment, transport equipment, and electrical machinery and equipment industries. By contrast, DOEs are more concentrated in the conventional basic capital-intensive and large scale industries such as ferrous metal smelting and pressing, chemical materials and products, machine making, and petroleum refining and coking industries.

Are the industrial structures of FFEs and DOEs significantly different? To answer this question we use the Spearman's rank correlation test. The argument is that if the industrial structures of FFEs and DOEs are similar, there would be a positive correlation between the orders of their industry shares. However, if there is a negative correlation or there is no correlation between the orders of their industry shares, we may conclude that the industrial structures of FFEs and DOEs are different. In practice, we tested the correlation both in terms of the order of the industry shares of DOEs and the corresponding industry shares of FFEs, and in terms of the order of the industry shares of

FFEs and the corresponding industry shares of DOEs. The results of the Spearman's rank correlation test are reported in Table 7.4.

Table 7.4 Spearman's rank correlation test between the industrial structures of DOEs and FFEs

Tests	Calculated Spearman's rank correlation coefficient	Critical value of Spearman's rank correlation coefficient	Null hypothesis of "no correlation"
In the order of the industry shares of DOEs			
The top 5 industries	-0.84156	0.900 (n=5, α=0.05)	accept null hypothesis
The top 10 industries	0.282731	0.564 (n=10, α=0.05)	accept null hypothesis
The top 15 industries	0.223879	0.441 (n=15, α=0.05)	accept null hypothesis
The top 20 industries	0.329556	0.377 (n=20, α=0.05)	accept null hypothesis
The top 21 industries	0.301856	0.368 (n=21, α=0.05)	accept null hypothesis
The top 22 industries	0.334036	0.359 (n=22, α=0.05)	accept null hypothesis
The top 23 industries	0.363039**	0.351 (n=23, α=0.05)	reject null hypothesis
The entire 29 industries	0.465671***	0.311 (n=29, α=0.05)	reject null hypothesis
In the order of the industry shares of FFEs			
The top 5 industries	-0.44876	0.900 (n=5, α=0.05)	accept null hypothesis
The top 10 industries	0.301392	0.564 (n=10, α=0.05)	accept null hypothesis
The top 15 industries	0.135172	0.441 (n=15, α=0.05)	accept null hypothesis
The top 20 industries	0.293619	0.377 (n=20, α=0.05)	accept null hypothesis
The top 21 industries	0.33286	0.368 (n=21, α=0.05)	accept null hypothesis
The top 22 industries	0.353839	0.359 (n=22, α=0.05)	accept null hypothesis
The top 23 industries	0.383569**	0.351 (n=23, α=0.05)	reject null hypothesis
The entire 29 industries	0.465671***	0.311 (n=29, α=0.05)	reject null hypothesis

Notes: ** indicates 95% significant level of Spearman's rank coefficient (one-tailed test).
*** indicates 99% significant level of Spearman's rank coefficient (one-tailed test).

According to the results of the Spearman's correlation test, up to the top 22 industries both in terms of the order of the industry shares of FFEs and DOEs, the null hypothesis of no correlation between the industrial structures of FFEs and DOEs cannot be rejected at the 95 percent significant level. This indicates that the industrial structures for the top 22 industries are significantly different between FFEs and DOEs, especially for the industrial structures of the top 5, the top 10, the top 15 and the top 20 industries. However, starting from the top 23 industries, both in terms of the order of the industry shares of FFEs and DOEs, the results of the Spearman's rank correlation test indicate that the null hypothesis of no correlation between the industrial structures of FFEs and DOEs is rejected. The reason for the rejection of the null hypothesis is mainly because the size of the lower ranking industries in the manufacturing sector is very small. In terms of the order of the industry shares of FFEs, the combined share of the seven lowest ranking industries in terms of the total assets is only 8.98 percent of the whole manufacturing sector, 6.33 percent of FFEs, and 9.64 percent of DOEs. As a result, when the seven lowest ranking industries are included in the sample, the correlation coefficient of the industrial structures of FFEs and DOEs will increase because the shares of these industries for both FFEs and DOEs are very low. However, since 93.67 percent of FFEs' total assets and 90.36 percent of DOEs' total assets are invested in manufacturing sectors with different industrial structures, it is reasonable to say that the industrial structures of FFEs and DOEs are different, especially between the industrial structures of the main industries of FFEs and DOEs.

The differences in the industrial structure of FFEs and DOEs have two main causes. First, on the DOEs' side, the basic industrial structure has been formulated by

China's industrial development policies of giving priority to the development of heavy industries since 1950s and especially during the mid-1950s to the 1970s (Ma Hong and Sun Shangqing, 1981). This kind of industrial development policy not only hindered the development of labour-intensive industries, in which China has a comparative advantage, but also put China in the unfavourable situation of competing in the international market with its comparative disadvantage. Second, from the FFEs' side, as we discussed in Chapter 5, the developing source countries, particularly the NIEs, are the major investors and their investments account for the overwhelming share of the total FDI in China. Given their ownership advantages in standardised products and their mature technology for labour-intensive industries, accompanied by their advanced management skills and well established international export markets and marketing information networks, the labour-intensive industrial structure of FFEs is both theoretically sound and practically reasonable.

There have been two large waves of change to China's heavy industry biased industrial structure. The first wave has been driven since the late 1970s, especially after 1984, by the rapid development of rural labour-intensive industries (Findlay, Watson and Wu, 1994). The second wave has been driven since the mid 1980s, especially since the early 1990s, by the fast growth of FFEs accompanied by the huge amount of FDI inflows into China's labour-intensive industries. Therefore, the impact of the industrial investment patterns of FFEs is tending to pull China's overall industrial structure from its relative capital-intensity towards relative labour-intensity and further towards better using its comparative advantage in the international market competition.

7.4 Inter-industry Variations of the Shares of FFEs

The above section analysed the industrial structure of FFEs and DOEs in China's manufacturing in terms of their shares in each industry. However, to understand the relative importance of FFEs in each individual sector we have to compare the relative shares of FFEs and DOEs in each industry. This section will discuss how important FFEs are in China's manufacturing in general, in which industries FFEs are most significant in particular, and finally what are the characteristics of the variations of the shares of FFEs in China's manufacturing.

How important are FFEs in China's manufacturing sector? Table 7.5 provides us with the answer. In 1995, FFEs accounted for 19.09 percent of the total assets of China's manufacturing sector. This indicates that foreign ownership in China's manufacturing is still low. However, it is important to stress that within only 16 years FFEs in China have grown from zero to nineteen percent. This is not insignificant, especially when we take into account the large aggregate scale and overall fast growth rate of China's manufacturing sector in the last 16 years.

Among the twenty-nine industries, the shares and the relative importance of FFEs vary substantially. FFEs are most important in four industries --- clothing and other fibre products, leather and fur products, electronics and telecommunication equipment, and cultural, education and sports goods --- the fast growing and increasingly export-oriented industries. The shares of FFEs in these four industries were more than 40

Table 7.5 Shares of FFEs and DOEs in manufacturing by industries (end 1995)

Industries	Shares of FFEs (%)	Shares of DOEs (%)
Clothing & other fibre products	47.91	52.09
Leather & Fur products	46.45	53.55
Electronics & Telecom. equipment	44.49	55.51
Cultural, Education & Sports goods	42.93	57.07
Plastic products	37.11	62.89
Furniture	35.46	64.54
Others	33.99	66.01
Food manufacturing	32.19	67.81
Timber processing	31.42	68.58
Metal products	29.35	70.65
Beverage manufacturing	25.31	74.69
Rubber Products	25.08	74.92
Instruments & Meters	23.87	76.13
Electrical machinery & equipment	22.44	77.56
Printing	21.74	78.26
Food processing	20.50	79.50
Transport equipment	20.09	79.91
Paper & Paper products	19.89	80.11
Medical & Pharmaceutical products	19.49	80.51
Textile	18.81	81.19
Non-metal mineral products	16.40	83.60
Chemical fibre	15.06	84.94
General machinery	13.34	86.66
Chemical materials & products	12.58	87.42
Non-ferrous metal smelting & pressing	11.30	88.70
Special machinery	8.21	91.79
Ferrous metal smelting & pressing	4.59	95.41
Petroleum refining & Coking	1.64	98.36
Tobacco processing	0.95	99.05
Total	**19.09**	**80.91**

Source: As Table 7.2.

Note: The calculation is based on the total assets.

percent of the industries' total assets. FFEs are also important in the following labour-intensive industries: plastic products, furniture manufacturing, other manufacturing, food manufacturing, and timber processing. The shares of FFEs in these reached between 30 percent and 40 percent of the industries' total assets. There are also ten industries in which FFEs have a share above the 19 percent average. However, half of these ten industries are labour-intensive industries, including metal products, rubber products, printing, food processing, and paper and paper products industries. In general, of the nineteen industries in which FFEs have a share above the 19 percent average there are thirteen labour intensive industries and only six capital and technology intensive industries.

One industry which is worth mentioning is the textile industry. As we discussed in the previous section, the textile industry has been the second largest industry receiving foreign investments in terms of the value of the total assets owned by FFEs. However, despite the large foreign investments, domestic enterprises, especially Township and Village Enterprises (TVEs), have invested four times more than FFEs. As a result, the share of FFEs in the textile industry is only 18.81 percent, just under the 19 percent average share of FFEs in all industries.

The industries in which FFEs have little importance are also interesting to discuss. First, among the ten industries in which FFEs have below the 19 percent average share, there are eight capital and technology intensive industries and only two labour intensive industries. Second, among the capital-intensive industries, the shares of FFEs in tobacco processing and petroleum refining industries are only 0.95 percent and 1.64

percent respectively, in ferrous metal smelting and pressing and special machinery industries they are below 10 percent. It is also quite interesting that the eight industries in which FFEs have the lowest shares are all capital and technology intensive industries.

Through the above discussion, two distinguishing characteristics of the variations of the shares of FFEs in China's manufacturing industries can be identified.

First, the shares of FFEs in different industries vary with the levels of factor intensities in different industries. In general, the shares of FFEs tend to be higher in those industries which are more labour-intensive. This is not only apparent when we compare FFEs' shares with the factor intensities across all different industries, but also apparent when we compare FFEs' shares with the factor intensities within a related industry group. The notable example is the textiles-related industry group. In the clothing industry which is the most labour-intensive, FFEs are very important and play a significant role, with nearly half of the industry's total assets. In the next labour-intensive stage of the textile industry, although FFEs are also important with 18.81 percent of the industry's total assets, their significance as compared with that in the clothing industry has declined. In the industry group's most capital-intensive stage of chemical fibre industry, foreign investors play a very minimal role and the share of FFEs is only 15.06 percent of the industry' total assets.

Second, the shares of FFEs tend to be higher in the fast growing export-oriented industries, such as clothing and other fibre products, leather and fur products, electronics and telecommunication equipment, cultural, education and sports goods, plastic products, furniture manufacturing, instruments and metres, electrical machinery and equipment, and printing and record pressing industries. Among the nineteen industries in which FFEs have a share above the 19 percent average, there are fourteen industries in which the export shares of FFEs were over 50 percent of the industry's total exports in 1995.[52]

7.5 The Determinants of the Industrial Distribution of FDI in China's Manufacturing

The previous sections have revealed significant inter-industry variations in the level of the total assets of FFEs in China's manufacturing industries. What, therefore, explains these inter-industry variations, and are there systematic locational and industrial characteristics that account for the patterns of the industrial distribution of FFEs in China's manufacturing? Previous empirical studies of the location determinants of the industrial distribution of FDI have mainly focused on developed countries, and only a little work has been done on developing countries, with little success.[53] This is not

[52] The fourteen industries include clothing & other fibre products, leather & fur products, electronics & telecommunication equipment, cultural, education & sports goods, plastic products, furniture manufacturing, timber processing, metal products, rubber products, instruments & meters, electrical machinery, printing & record pressing, food processing, and paper & paper products. Office of the Third National Industrial Census (1997), *Zhonghua Renmin Gonghe Guo 1995 Nian Disanci Quanguo Gongye Pucha Ziliao: Zonghe Qiye Juan* [Data of the 1995 Third National Industrial Census of the PRC: Total Enterprises], Zhongguo Tongji Chubanshe, Beijing.

[53] For a comprehensive survey of FDI in host country manufacturing see Dunning (1993), *Multinational Enterprises and the Global Economy*, Addison-Wesley, England.

surprising since there are a lot of reasons to argue that the industrial investment patterns of FDI in developed countries may not apply to developing countries. Could China's case offer us an alternative explanation for the location determinants of industrial distribution of foreign direct investment to add to the literature of FDI in developing countries? In this section, in line with the "OLI" theory of FDI, we seek to explain the inter-industry variations in the level of the total assets of FFEs in China's manufacturing by focusing on the differences in industrial characteristics resulting from the locational advantages of resource endowments, market size and growth of industries, and the policy factors in the Chinese economy.

7.5.1 The hypotheses

(1) Local resource endowments

Our first hypothesis is that, given the ownership advantages and the incentive to maximise investment returns, foreign firms tend to invest in those industries which use the host countries' abundant resources intensively in production. We know that the prices of resources are determined by their relative scarcity. Relatively abundant resources in a society must be relatively cheap in that society. According to the H-O theory of international trade, if a country is well endowed with a resource, it must use that abundant resource intensively in its production. As a result, it has a comparative advantage in the abundant resource-intensive industries, and this is reflected by exporting the abundant resources, embodied in commodities, through international trade. Since China is well endowed with abundant labour relative to capital (Song Ligang, 1996a, pp. 43-48), then according to our hypothesis we expect that there will be more inward FDI in China in those industries whose production is relatively labour-intensive. Also according to the H-O-V model based on the relationship of resource endowments, production factor intensity, and comparative advantage (Leamer, 1984 and Song Ligang, 1996a), we may argue that inward FDI will be greater in China in those industries which have a comparative advantage and are more export-oriented.

Therefore, the variable used in this study to test the hypothesis is the capital to labour ratio (KLR) which is the direct measure of factor intensity of industries and is also often used in the comparison of factor intensities across industries. Since a higher capital to labour ratio represents higher capital intensity in production, and also because capital is scarce relative to labour in China, therefore, according to our hypothesis, we expect that the capital to labour ratio is negatively related to the level of inward FDI stocks among industries in China's manufacturing.

(2) Market size and growth rate of industry

The market size of an industry is the primary determinant of its scale, and a large industry is usually associated with higher level of investments both from domestic and abroad. Therefore, we expect that the larger the market size of the industries, the more inward FDI will be in these industries. Considering the case of export-oriented FDI, in this study two variables are used to test the market size hypothesis. The first variable is the total value of domestic sales (DMS) of an industry and the second variable is the value of exports (EP) of an industry. We expect that both variables have a positive impact on the level of the aggregate FDI stocks of FFEs in manufacturing industries.

Industries with a higher and faster growth rate present good development potential and bright prospects for the future. We expect that industries with a higher growth rate will attract higher levels of inward FDI stock and have a higher presence of FFEs. The growth rate (GR) of industries is proxied by the real annual growth rate of their total output value from 1990 to 1995.

(3) Policy factors

There are some policy factors which directly or indirectly affect the industrial distribution of inward FDI in China's manufacturing. Among the policy factors, we would like to test the effects of trade barriers. It has been suggested by many studies that one of the motives for FDI is to jump over trade barriers in order to gain access to protected markets and to extract policy-induced rents generated by trade barriers. If this is the case, we would hypothesise that the level of inward FDI stocks will be higher in those industries which have higher trade barriers. In fact the actual protection levels of China's industries are difficult to measure since there are both tariffs and a range of non-tariff barriers to trade. However, there are some comprehensive data available on trade barriers which enable us to investigate the protection-jumping motive of FDI (APEC, 1995b, pp. 226-263). In this study, we use both non-tariff barriers (NTB) and tariffs (TF) to test this hypothesis.

7.5.2 Variable specification and the model

The dependent variable, denoted as FDI_j, is the total assets of FFEs in China's manufacturing industry j at the year end of 1995. The independent variables are summarised in Table 7.6. The location determinants of the inter-industry variations of the total assets of FFEs in China's manufacturing discussed above can be represented by the following equation:

$$\ln FDI_j = \beta_0 + \beta_1 \ln KLR_j + \beta_2 \ln DMS_j + \beta_3 \ln EP_j + \beta_4 \ln GR_j + \beta_5 \ln NTB_j + \beta_6 \ln TF_j + \varepsilon_j \qquad (7.1)$$

where ε_j is stochastic disturbance, the βs are the regression parameters to be estimated, and the variables are as defined above. The estimated coefficients of the independent variables are elasticities.

7.5.3 Regression results

Using ordinary least squares (OLS) cross-section regression analysis with White's (1980) heteroskedasticity-consistent covariance matrix correction for unknown form of heteroskedasticity, Table 7.7 shows the regression results of the location determinants of the inter-industry variations of the total assets of FFEs in China's 29 manufacturing industries for the year of 1995.

Table 7.6 Variables of the total assets equation of FFEs in manufacturing

Variable name	Specification of variables	Source
Dependent variable FDI_j	Total assets of FFEs in China's manufacturing industry j in year 1995. Billion *Renminbi* yuan at current prices.	State Statistical Bureau (1996), *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996].
Independent variables		
KLR_j	Capital to labour ratio of industry j in year 1995. Ten thousand *Renminbi* yuan per worker.	As above.
DMS_j	Total domestic sales value of industry j in year 1995. Billion *Renminbi* yuan at current prices.	As above and the Office of the Third National Industrial Census, 1997.
EP_j	Total value of exports of industry j in year 1995. Billion *Renminbi* yuan at current prices.	The Office of the Third National Industrial Census, 1997.
GR_j	Real annual growth rate of industry j from 1990 to 1995. Percent (%).	Various issues of State Statistical Bureau, *Zhongguo Gongye Jingji Tongji Nianjian* [China Industrial Economic Statistical Yearbook].
NTB_j	Frequency use of non-tariff barriers in industry j in year 1993. Percent (%).	APEC (1995b), *Survey of Impediments to Trade and Investment in the APEC Region.*
TF_j	Unweighted average tariff rates in industry j in year 1993. Percent (%).	As above.

Table 7.7 Regression results of the location determinants of the inter-industry variations of the total assets of FFEs in manufacturing (1995)

Variables	Model 1	Model 2
Constant	-1.5969	-1.3018
	(-1.324)	(-1.158)
LnKLR	-0.75859	-0.72857
	(-2.038)**	(-2.173)**
LnDMS	0.50234	0.48847
	(4.517)***	(4.851)***
LnEP	0.38008	0.38039
	(4.036)***	(3.986)***
LnGR	0.83001	0.83113
	(2.550)**	(2.527)**
LnNTB	0.072052	
	(0.3609)	
LnTF	0.0093143	
	(0.034)	
Adjusted R^2	0.63	0.66
DF	22	24
F-statistics	8.952	14.546

Notes: Adjusted White's heteroskedasticity-consistent t-statistics in brackets.
*** statistically significant at 0.01 level.
** statistically significant at 0.05 level.

Since we used the "OLS" cross-section regression with a relatively small sample of 29 observations, before we draw any conclusion from the regression results, we apply some diagnostic tests in our estimated model to justify the adequacy of our estimated model for the description of the inter-industry variations of the total assets of FFEs in China's manufacturing. Since the data under study is a cross-section regression, we mainly apply the diagnostic tests of heteroscedasticity, functional form, and normality in our estimated model, and the model to be tested is Model 2 in Table 7.7.

Heteroscedasticity

Table 7.8 reports the heteroscedasticity test results obtained by using SHAZAM with HET option.

Table 7.8 Test results for heteroscedasticity of Model 2 of the total assets equation of FFEs in manufacturing

Tests	Test Statistics	95% Critical Value	Null hypothesis of no heteroscedasticity
B-P-G	X^2 (4) = 16.036***	9.48773	Reject null hypothesis
ARCH	X^2 (1) = 0.028	3.84146	Accept null hypothesis
Harvey	X^2 (4) = 6.629	9.48773	Accept null hypothesis
Glejser	X^2 (4) = 17.815***	9.48773	Reject null hypothesis

The test results are mixed. The B-P-G test and the Glejser test reveal the presence of heteroscedasticity, and the ARCH test and the Harvey test accept the null hypothesis of no heteroscedasticity. Therefore, the test results are inconclusive. To solve the possible problem of heteroscedasticity, and also since White's heteroscedastic consistent t-statistics have the advantage of making it possible to perform statistical inference on individual coefficients without knowing the form of the heteroscedasticity, we used White's (1980) heteroscedasticity-consistent covariance matrix correction in our regression. The adjusted White's heteroskedasticity-consistent t-statistics of the coefficients of variables are reported in Table 7.7.

Functional Form

Is our functional form correctly specified? We use Ramsey's (1969) RESET test for the functional form of Model 2. The RESET test has power against many forms of functional form misspecification. Table 7.9 reports the functional form test results obtained by using SHAZAM with RESET option.

Table 7.9 Test results for functional form of Model 2 of the total assets equation of FFEs in manufacturing

Ramsey RESET Specification Tests Using Powers of $\hat{Y}$	Test Statistics	95% Critical Value
RESET (2)	F(1,23) = 0.59310	4.28
RESET (3)	F(2,22) = 2.4179	3.44
RESET (4)	F(3,21) = 2.1830	3.08

The null hypothesis of Ramsey RESET test is no functional form misspecification. The test statistics reported in Table 7.9 are all smaller than the 95 percent critical values, therefore, the null hypothesis of no functional form misspecification cannot be rejected at the 0.05 level of significance. Consequently, we conclude that there is no functional form misspecification in Model 2.

Normality

Since in this study our sample size is relatively small with only 29 observations, so the normality test is essential. In this study we use both the Goodness-of-fit test for normality of residuals and the Jarque-Bera asymptotic LM normality test. The test results are reported in Table 7.10.

Table 7.10 Test results for normality of Model 2 of the total assets equation of FFEs in manufacturing

Normality Tests	Test Statistics	95% Critical Value
Goodness-of-fit test	X^2 (3) = 7.2148	7.81473
Jarque-Bera test	X^2 (2) = 2.5600	5.99146

The null hypothesis of the two normality tests is error normally distributed. Since the test statistics reported in Table 7.10 are all smaller than the 95 percent critical value, therefore, the null hypothesis of error normally distributed cannot be rejected at the 0.05 level of significance.

Consequently, except for the possible presence of heteroscedasticity, which was corrected by using White's heteroscedastic-consistent t-statistics for the inference on the coefficients of variables of the regression, the log-linear form equation of the inter-industry variations of the total assets of FFEs in China's manufacturing performs relatively well against a number of diagnostic tests. Therefore, we accept the model as an adequate representation of the inter-industry variations of the total assets of FFEs in China's manufacturing.

The regressions performed relatively well. The variable of capital to labour ratio is a statistically significant determinant and is negatively related to the level of inward FDI stocks among China's manufacturing industries.

The domestic market size variable, the export variable and the growth rate variable are all positive and statistically significant in affecting the level of the inter-industry variations of the total capital stocks of FFEs in China's manufacturing. It provided strong support for our hypothesis that industries with larger domestic market size, higher level of exports and higher growth rate will attract more inward FDI stocks.

The two policy variables of trade barriers --- non-tariff barriers and tariffs --- are not statistically significant although they have the positive sign. Thus the regression results rejected the protection jumping hypothesis as an explanation for the level of the inter-industry variations of the total assets of FFEs in China's manufacturing.

7.5.4 Explanations and main findings

In line with our hypotheses and the regression results, we now give some explanations and main findings on the location determinants of the inter-industry variations of the total capital stocks of FFEs in China's manufacturing.

The capital to labour ratio (KLR), the proxy for China's resource endowments, is a statistically significant location determinant in affecting the aggregate level of FDI stocks in China's manufacturing industries. The regressions show that there is a negative relationship between KLR and the level of FDI stocks among industries. This indicates that foreign investors tend to invest more in those industries which are more labour-intensive in the production.

The domestic market size (DMS) and the level of exports (EP) of industries are positive and statistically significant location determinants affecting the industrial investment pattern of foreign investors in China's manufacturing. The results imply that industries which either have a large domestic market or a large export market or both will attract more inward FDI.

Growth rate (GR) of industries is a positive and statistically significant factor in determining the industrial investment pattern of foreign investors. The results show that industries with a higher growth rate will attract a higher level of inward FDI stocks, and that foreign investors are very sensitive to the future of their investments.

Finally, the non-tariff barriers (NTB) and the tariff rates (TF) are rejected by our regressions because of the statistical insignificance of the coefficients. As we already mentioned above, the actual protection of China's industries is very difficult to measure, especially in this relatively high level of aggregation. Therefore, further work should be done, if the data are available, at the product level. It remains credible that some FDI is motivated by high protection barriers. However, with the existing data the regressions show that there is no significant effect of non-tariff barriers and tariff rates on the industrial investment pattern of FDI in China's manufacturing.

In line with our hypothesis and the above explanations two main findings could be drawn from the regression results.

First, the revealed investment pattern of foreign investors in China's manufacturing is consistent with the relative factor endowments of the Chinese economy. According to the most recent studies of Song (1996a, pp. 47-48), in a cross country comparison with sixty-one countries, China is the most labour abundant country. Therefore, the revealed higher propensity of foreign investors to invest in labour-intensive industries in China has proved that taking advantage of China's abundant and cheap labour resources not only is one of the main motives for foreign investors to invest in China's manufacturing in general, but also is one of the very important factors in determining the investment decision of foreign investors among China's different manufacturing industries.

Second, theoretically according to the H-O-V model based on the relationship of resource endowments, production factor intensity, and comparative advantage (Leamer, 1984 and Song Ligang, 1996a), since China is well endowed with abundant labour resources, then China should have a comparative advantage in labour-intensive manufactured products. Empirically according to Bora (1996), from 1980 to 1993 the revealed comparative advantage index of China's labour-intensive manufactured products has been consistently above 3 and showed a rising trend.[54] Also according to Song (1996b, p.15) using Leamer's method, in 1994 in the four major manufacturing product groups of labour-intensive products, capital-intensive products, machinery, and chemicals, China had positive net exports only in labour-intensive products both in its trade with Asia and with the world.[55] As the regression revealed, foreign direct investment in China's manufacturing is biased towards labour-intensive industries in which China has a comparative advantage. This implies that, with the labour-intensive industrial investment pattern, FFEs will play an increasing role not only in improving China's manufactured exports in general, but also in boosting China's labour-intensive manufactured exports in particular.

[54] The calculation is based on the data from the International Economic Data Bank, Australian National University. The economic activity is classified into agriculture, minerals, labour, capital, technology, and human capital. An index value that is equal to one indicates a revealed comparative advantage in that activity. The larger the value over one, the higher the revealed comparative advantage will be for that activity. The figure shows that the revealed comparative advantage index of labour-intensive products not only is the highest among all activities, but also presents an increasing trend, indicating that the labour-intensive activity will play a more significant role in China's exports.

[55] Leamer (1984) and Song (1996a and 1996b) use the same method of net exports to represent a country's economic development levels and the corresponding comparative advantage determined by its relative resource endowments.

The recent statistics do show a significant role of FFEs in China's manufactured exports. According to the 1995 national industrial census (Office of the Third National Industrial Census, 1997), in 1995 manufacturing FFEs exported 368.59 billion *yuan* of manufactured products, accounting for 51.24 percent of China's total manufactured exports. In many industries, FFEs now dominate the industries' exports, particularly in the labour-intensive and fast growing export-oriented industries. For example, in 1995 the share of FFEs in the industry's total exports was 95 percent in electronics and telecommunication equipment, 79 percent in printing and record pressing, 77 percent in plastic products, 75 percent in furniture manufacturing, 73 percent in leather, fur and related products, 72 percent in instruments and meters, 69 percent in cultural, education and sports goods, 61 percent in metal products and 60 percent in clothing and other fibre products. This empirical evidence again demonstrates that using China's abundant and cheap labour resources in order to reduce production costs and increase international competitiveness in the world export market is one of the main motives for foreign investors to invest in China. However, given the labour-intensive industrial investment pattern of FFEs and their increasing role in China's manufactured exports, the important policy implication is that FFEs are the most direct beneficiaries or victims of any changes in China's international trade policies and trade relations with other countries. As a result, FFEs are playing the role of a buffer between the Chinese government and the governments of the source countries.

In general, this section has investigated a number of possible explanations for the industrial investment pattern of FDI in China's manufacturing sector. We find empirical support for the hypothesis that FDI is higher where there is access to resources of

China's comparative advantage in general, and where it provides access to local resource endowments in the case of relatively labour-intensive activities in particular. The results also provide support for the hypothesis that FDI is higher the larger is the market size (both domestic and export markets) and the higher is the growth rate of industries. Finally, the results show no significant effect of non-tariff barriers and tariff rates on the industrial investment pattern of FDI in China's manufacturing.

7.6 Conclusion

In this chapter we analysed foreign direct investment in China's manufacturing from several aspects.

First, FDI in China's manufacturing sector has been the largest among all other economic sectors receiving FDI, both in annual FDI inflows and in the aggregate FDI stocks. In general, the accumulated FDI in China's manufacturing sector on a contracted basis from 1983 to 1995 accounted for 57 percent of the total accumulated FDI in China. The manufacturing sector by far has been the single largest economic sector attracting FDI inflows in China's economy.

Second, the industrial distribution of FDI in China's manufacturing presented not only large inter-industry variations but also a high concentration in labour-intensive industries. Among the twenty-nine industries, the five largest FDI recipients accounted for 40 percent and the labour-intensive industries accounted for 50 percent of the total manufacturing FDI in China respectively.

Third, two distinguishing features of the industrial structure of FFEs comparing with DOEs have been revealed. First, in terms of industry factor intensities, FFEs are more biased towards labour-intensive industries than DOEs. Second, within the capital-intensive industries, FFEs are relatively more concentrated in the newly developing and fast growing industries, while DOEs are more concentrated in the conventional basic capital-intensive and large scale industries.

Fourth, the labour-intensive industrial investment pattern of FFEs has the important implication that FFEs have been driving the second wave after the rural enterprises which have pulled China's overall industrial structure from its relative capital-intensity towards relative labour-intensity and further towards better using its comparative advantage in the international market competition.

Fifth, in terms of the shares of FFEs in China's manufacturing industries, two characteristics are apparent. First, the shares of FFEs tend to be higher in those industries which are more labour-intensive. This is not only apparent across all industries, but also apparent within a related industry group and the textiles related industry group offered a notable example. Second, the shares of FFEs tend to be higher in the fast growing export-oriented industries and among the nineteen industries whose shares are above the average, there are fourteen industries in which the export shares of FFEs were over 50 percent of the industry's total exports in 1995.

Sixth, what explains the industrial investment pattern of foreign investors in China's manufacturing sector? To answer this question we conducted an empirical test with a number of hypotheses. In general, we find that the levels of inward FDI stocks of industries are positively related to China's abundant labour resource endowments, market size and growth rate of industries. However, the protection jumping hypothesis was rejected as having no significant impact on the industrial distribution of FDI in China's manufacturing.

Finally, the most prominent feature of FDI in China's manufacturing revealed by several aspects of the analysis and throughout this chapter is its concentration in labour-intensive and fast growing export-oriented industries. This raises the question of what is the role of FDI in China's export expansion and what is the relationship between FDI and trade in the case of China? We will discuss and answer these questions in the next chapter.

Chapter 8

Foreign Direct Investment and Trade: An Empirical Investigation of the Evidence from China

8.1 Introduction

Since the early 1980s, together with the fast growth and huge amount of FDI inflows, China's international trade has grown very rapidly from US$38.14 billion in 1980 to US$280.85 billion in 1995, with an annual growth rate of over 14 percent. As a result, China's trade share in the world total trade has increased from 0.94 percent in 1980 to 2.86 percent in 1994, ranking it the eleventh largest trading country in the world.

What are the sources of China's rapid trade expansion since the early 1980s? A lot of studies have addressed this question. In general three main sources have been identified. They are: first the results of market oriented economic reforms and open door policies in general and trade liberalisation in particular (Lardy, 1992); second the fast growth of Township and Village Enterprises (TVEs) associated with the remarkable export expansion since the early 1980s and particularly after 1984 (Findlay, Watson and Wu, 1994; Yan Shanping, 1995); and third the massive inflows of FDI associated with fast trade growth of Foreign-Funded Enterprises (FFEs), whose trade share reached 39.1 percent of China's total trade in 1995.

Among the three main sources contributing to the rapid increase of China's international trade expansion, the first two sources have been studied extensively. However, the third source --- the inflows of FDI --- has not been much analysed up to now. There are a number of questions relating to the impact of FDI on the rapid expansion of China's foreign trade which are worth both theoretical analysis and empirical investigation.

As reviewed in Chapter 1, in terms of the principal market for its products FDI can be classified into two broad categories. One is domestic market-oriented FDI which takes the host country's domestic markets as its main market. Another is international market oriented or export-oriented FDI which takes the international market as its main market.

In practice, export-oriented FDI has played an important role in the process of export-led industrialisation in many developing countries. Affiliates of multinational enterprises (MNEs), as part of the parent company's global network, have marketing channels in place, possess experience and expertise in the many complex facets of product development and international marketing, and are well placed to take advantage of inter-country differences in the costs of production. In view of these considerations, attracting export-oriented FDI has become an integral element of policy reforms aimed toward export-led industrialisation in many developing countries. The successful examples which are often cited are the Newly Industrialising Economies (NIEs).

Since the 1980s, both FDI inflows into China and the international trade of China have witnessed a tremendous increase. Is this a coincidence or is there a special relationship between FDI and trade? This chapter is designed to investigate empirically the impact of FDI on trade based on the evidence from China. We seek to answer the questions: what is the role of FDI in China's trade expansion, what is the impact of FDI on the differences in China's provincial trade, and what is the impact of FDI on China's bilateral trade with its trade partners?

This chapter is structured as follows. In section 8.2 we will briefly review the development of the theories of the relationship between FDI and trade. In section 8.3 we demonstrate China's international trade expansion since the 1980s and outline the questions which we will investigate. In section 8.4 we investigate the role of FDI in China's international trade by directly examining the contribution of FFEs to China's trade growth both at the national level and at the provincial level. In section 8.5 we further investigate empirically the impact of FDI on trade, based on the evidence first from China's provincial trade flows and then from China's bilateral trade flows. Section 8.6 concludes this chapter and contains the main findings.

8.2 A Brief Review of the Theories of the Relationship Between FDI and Trade

Traditionally, the theories of FDI and international trade have been developed separately. FDI theory tries to explain why firms invest in particular countries, and uses the notions of ownership, internalisation and location advantages as determinants of investment choices. Trade theory, developed much earlier, has put emphasis on why countries trade with each other and has stressed the principle of comparative advantage as the determinant of trade patterns. However, during the past 30 years, several attempts have been made by international trade theorists to integrate the theories of FDI and trade.

Vernon (1966) developed the product cycle model to explain the sequence from domestic production of a new product to its export and then foreign production by the United States MNEs in the post second world war period. In the product cycle model, which deals with a single product, FDI has been viewed as replacing trade. As Dunning (1993, p. 71) pointed out: "it did not explain, nor purport to explain, resource based, efficiency seeking or strategic asset acquiring FDI. Vernon offered a theory which was partial in that it addressed itself to only some of the issues surrounding MNE activity. On the other hand, the product cycle was the first dynamic interpretation of the determinants of, and relationship between, international trade and foreign production".

Kojima (1973, 1985), from a macroeconomic point of view and by comparing American and Japanese FDI, pointed out that Japanese FDI is primarily trade oriented and responds to the dictates of the principle of comparative advantage. In contrast, he argued, US FDI is mainly conducted within an oligopolistic market structure, is anti-trade oriented and operates to the long-term disadvantage of both the source and host countries. In general, Kojima's macroeconomic approach predicts that export-oriented FDI occurs when the source country invests in those industries in which the host country has a comparative advantage. Therefore, export-oriented FDI is characterised as being welfare improving and trade creating since it can promote both host and source countries' exports. It has been pointed out that Kojima's neo-classical framework is unable to capture the role of firm-specific advantages in determining FDI flows (Dunning, 1988) and, moreover, it fails to explain much of modern trade. This means that it cannot explain the kind of trade flows that are based less on the distribution of factor endowments and more on the gains from exploiting economies of scale, on product differentiation and on other manifestations of market failure (Dunning, 1993, p. 90).

Since the early 1980s a small number of international economists have constructed models by combining ownership advantages and location advantages to integrate FDI into trade theories. In these models, the activities of firms are divided into two categories. The first consists of headquarters activities, which involve engineering, managerial and financial services, as well as services of reputation, trademarks and so forth, which can be transferred at no cost even to distant production facilities. This set of activities is often simply labelled research and development and is also called "knowledge capital", which is assumed to be the most human and physical capital intensive. The second consists of the actual production process, which can be further divided into intermediate goods production and final goods production, which are assumed to be respectively of intermediate capital intensive and the most labour intensive. Under the assumptions of zero transport costs of headquarters services and increasing returns to scale of the actual production process, firms can geographically separate production facilities from headquarters, but they concentrate production facilities in one location in order to reap associated scale economies. These models have focused mainly on either vertical or horizontal FDI, where the first consists of the geographical separation of different stages of the value-added chain and the second consists of the duplication of the entire production process, except for headquarters activities, in several countries.

Helpman (1984) and Helpman and Krugman (1985) constructed models to integrate vertical FDI into international trade theory, explained in terms of factor proportion asymmetries between countries. The models demonstrate the possibility that FDI can reverse trade patterns when countries are very different in terms of relative factor endowments. FDI generates complementary trade flows of finished goods from foreign affiliates to parent companies or to the home country and intra-firm transfers of intangible headquarters services from parent companies to foreign affiliates. If production is divided into upstream and downstream production, the FDI-trade relationship can be developed further with the emergence of intra-firm parent-to-affiliate exports of intermediate inputs. The models require large differences in countries' relative factor endowments for FDI to take place, and they apply best to the relationship of vertical FDI and trade between developed and developing countries.

Markusen (1984), Brainard (1992), Horstmann and Markusen (1992), Markusen and Venables (1995), and Markusen (1995) have produced models to integrate horizontal FDI into international trade theory. There are three key elements in the models, namely firm-level activities like research and development that are joint inputs across plants, plant-level scale economies, and transport costs, geographical and cultural distance costs and other kinds of impediments to trade between countries. According to the models of Brainard (1992) and Horstmann and Markusen (1992), when countries are identical in technologies, preferences, and endowments, the higher the value of firm-level scale economies and tariffs and transport costs relative to plant-level scale economies, the more likely is the presence of horizontal FDI. These models based on the trade-off between proximity and concentration postulate a substitution relationship between horizontal FDI and trade. Markusen and Venables (1995) further elaborated the theory to introduce asymmetries between countries in terms of market size, factor endowments, and technologies. Countries' asymmetries make it possible for national and multinational firms and, therefore, trade and FDI to coexist. However, as countries become more similar in market size, relative factor endowments, and technical efficiency, FDI will increase and international economic activity will become increasingly dominated by MNEs, which displace trade, provided that transport costs are not very small (Markusen, 1995).

Although these recent models have made a considerable contribution to the theoretical study of the relationship between FDI and trade by integrating FDI into international trade theories, it has been argued that, because the models are constrained by a simple two-country general equilibrium framework, they cannot significantly represent real MNE behaviour and the empirical FDI and trade relationship (United Nations, 1996). Moreover, the models do not take into account, for instance, the role of governments in reshaping countries' comparative advantages and in influencing trade patterns, the importance of macroeconomic factors such as structural unemployment or growth, and market imperfections such as information asymmetry and limitations on knowledge computational capabilities of decision makers (Dunning, 1995). Therefore, more empirical studies of the relationship between FDI and trade are not only necessary but will also throw light on the future improvements of the theoretical models integrating FDI and trade.

8.3 China's International Trade Expansion Since 1980

What has been China's trade performance in the last 16 years? We answer this question by examining three aspects. First what has been China's aggregate trade growth? Second what has been China's share in the world trade? And third what has been the degree of China's openness or trade dependence.

One of the greatest achievements of China's open door policy is the remarkable increase of China's international trade both in exports and in imports. Since the early 1980s, China's international trade has increased tremendously. Table 8.1 and Figure 8.1 present China's international trade performance during the 16 years from 1980 to 1995. The table and figure indicate that in that time China's international trade has increased

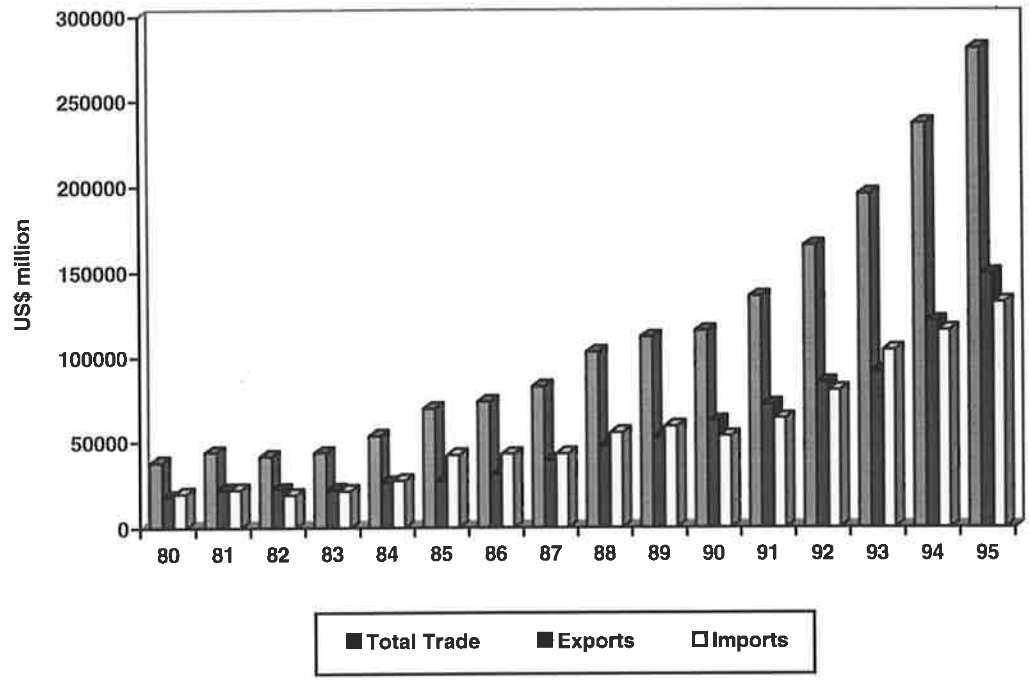
Table 8.1 China's international trade performance (1980-1995)

Year	Total trade (million US$)	Exports (million US$)	Imports (million US$)
1980	38140	18120	20020
1981	44020	22010	22010
1982	41600	22320	19280
1983	43610	22220	21390
1984	53550	26140	27410
1985	69600	27350	42250
1986	73840	30940	42900
1987	82650	39440	43210
1988	102800	47520	55280
1989	111680	52540	59140
1990	115440	62090	53350
1991	135630	71840	63790
1992	165530	84940	80590
1993	195710	91760	103950
1994	236730	121040	115690
1995	280850	148770	132080
Annual growth rate (%)	**14.24**	**15.07**	**13.40**

Sources: Data for 1980 - 1994 are from the Editorial Board of the Almanac of China's Foreign Economic Relations and Trade (1995), *Zhongguo Duiwai Jingji Maoyi Nianjian 1995/96* [Almanac of China's Economic Relations and Trade 1995/96], Zhongguo Shehui Chubanshe, Beijing, p. 403.

Data for 1995 are from the State Statistical Bureau (1996), *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996], Zhongguo Tongji Chubanshe, Beijing, p. 580.

Figure 8.1 China's trade performance (1980-95)

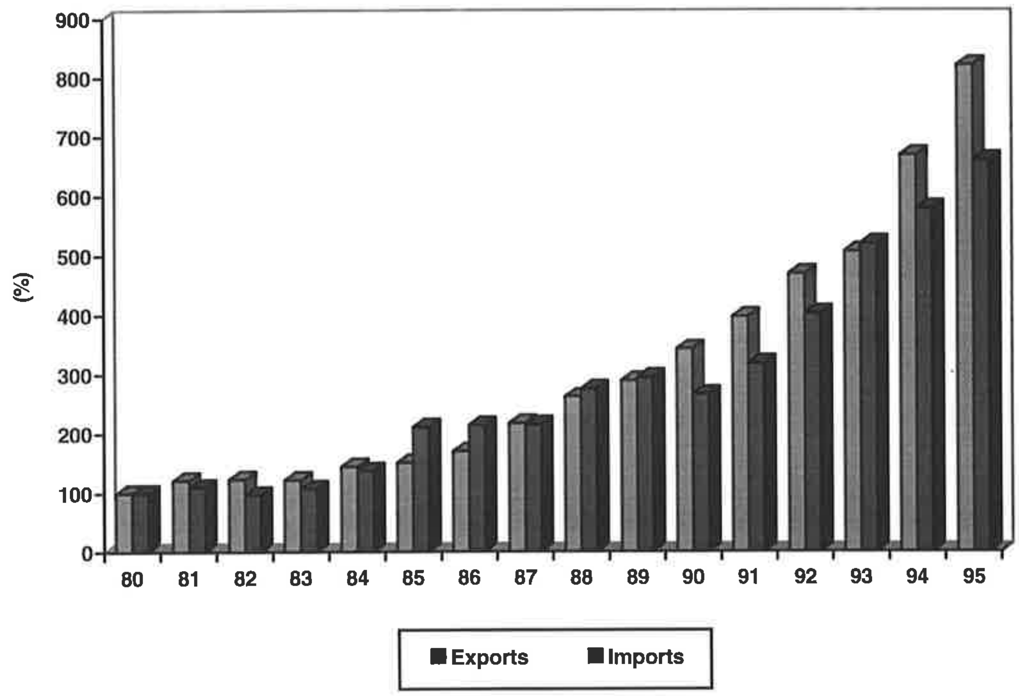


Source: As Table 8.1.

significantly. The total trade value increased from US$38.14 billion in 1980 to US$280.85 billion in 1995 with an annual growth rate of 14.24 percent. The export value increased from US$18.12 billion in 1980 to US$148.77 billion in 1995 with an annual growth rate of 15.07 percent, and the import value increased from US$20.02 billion in 1980 to US$132.08 billion in 1995 with an annual growth rate of 13.40 percent.

Figure 8.2 presents China's export and import indexes calculated on the base year of 1980. As the figure shows, both the export index and import index grew rapidly. However, compared to the export index, the import index shows relatively large fluctuations, which are closely related to the Chinese macroeconomic expansions and contractions during that period.

Figure 8.2 China's export and import indexes (1980-95) (1980=100)



Source: As Table 8.1.

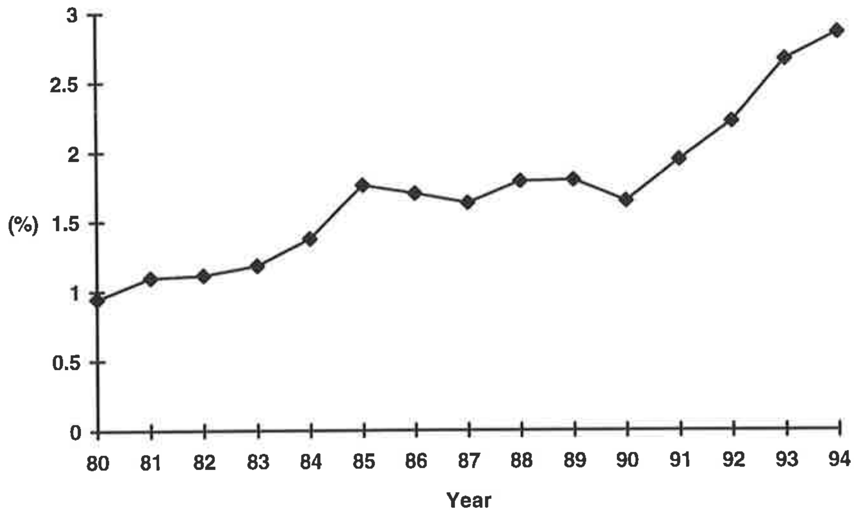
Table 8.2 and Figure 8.3 present China's trade share in total world trade. During the last 15 years, with the rapid growth of international trade, China's share in total world trade has increased remarkably from less than 1 percent (0.9 percent) in 1980 to 2.9 percent in 1994, with an annual growth rate of 8.2 percent, which makes China the eleventh largest trading country in the world. Decomposing the total trade share, exports grew steadily and rapidly, with an annual growth rate of 8.8 percent. Imports experienced relatively large fluctuations with an annual growth rate of 7.7 percent.

Table 8.2 China's share in total world trade (1980-94)

Year	China as % of total world trade	China as % of total world exports	China as % of total world imports
1980	0.944	0.910	0.977
1981	1.098	1.116	1.081
1982	1.114	1.224	1.015
1983	1.183	1.229	1.139
1984	1.378	1.374	1.382
1985	1.762	1.421	2.085
1986	1.702	1.454	1.941
1987	1.631	1.586	1.675
1988	1.791	1.681	1.898
1989	1.800	1.726	1.871
1990	1.648	1.806	1.496
1991	1.947	2.100	1.800
1992	2.218	2.323	2.118
1993	2.663	2.526	2.797
1994	2.858	2.965	2.753
Annual growth rate (%)	8.234	8.803	7.680

Sources: Calculated from the various issues of the Editorial Board of the Almanac of China's Foreign Economic Relations and Trade, *Zhongguo Duiwai Jingji Maoyi Nianjian* [Almanac of China's Economic Relations and Trade], Zhongguo Shehui Chubanshe, Beijing.

Figure 8.3 China's share in total world trade (1980-94)



Source: As Table 8.2.

Table 8.3 and Figure 8.4 present China's trade to GNP ratio, which is also a measure of openness or trade dependence. As the data show, China's openness or trade dependence increased significantly from 12.8 percent in 1980 to 41 percent in 1995, with an annual growth rate of over 8 percent. Such a big jump within only 16 years for a large country is very rare.

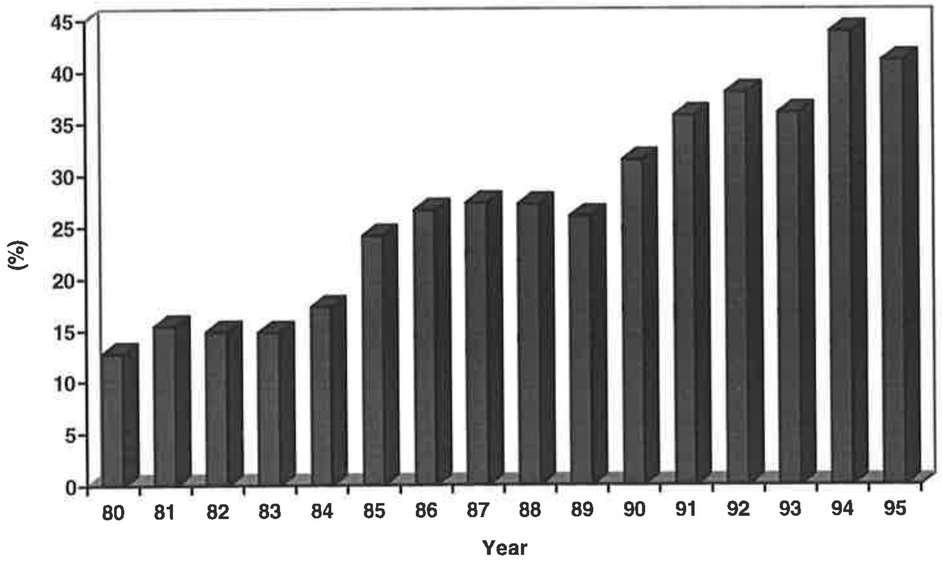
However, there is argument about the openness of China. As Findlay and Watson (1996) point out, there is considerable uncertainty over the measurement of China's openness to trade since both sides of the equation of openness are subject to interpretation and debate. They cite several studies of China's openness to demonstrate their argument. For example, as Lardy (1992) has pointed out, in China's case the

Table 8.3 China's trade to GNP ratio (1980-95)

Year	Total trade as % of GNP	Exports as % of GNP	Imports as % of GNP
1980	12.75	6.07	6.68
1981	15.41	7.71	7.71
1982	14.85	7.97	6.88
1983	14.81	7.55	7.26
1984	17.25	8.34	8.91
1985	24.15	9.45	14.70
1986	26.61	11.16	15.45
1987	27.29	13.01	14.28
1988	27.17	12.56	14.61
1989	25.99	12.23	13.76
1990	31.42	16.87	14.55
1991	35.71	18.91	16.80
1992	37.95	19.47	18.49
1993	35.96	16.86	19.10
1994	43.80	22.40	21.40
1995	41.03	21.74	19.29
Annual growth rate (%)	8.11	8.88	7.33

Sources: Calculated from the State Statistical Bureau (1995), *Zhongguo Duiwai Jingji Tongji Nianjian 1994* [China Foreign Economic Statistical Yearbook 1994], Zhongguo Tongji Chubanshe, Beijing, and the State Statistical Bureau (1996), *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996], Zhongguo Tongji Chubanshe, Beijing.

Figure 8.4 China's trade to GNP ratio (1980-95)



Source: As Table 8.3.

calculations of the ratio are difficult since the conversion of the domestic data into US dollar terms is problematic. In general, official exchange rates tend to understate the purchasing power of the domestic currency and thus to overstate the degree of openness expressed by the ratio. Using the official data, Lardy reports a ratio of over 26 percent in 1989 and cites Chinese sources with estimates of up to 33 percent. Lardy (1994), however, challenges this assessment and cites competing analyses of China's GNP based on purchasing power parity which indicate a substantially lower ratio of around 10 percent in 1988. Subsequently, he updated this method to 1990 and finds a trade to GNP ratio in that year of a little over 9 percent (using an estimate of real per capita income of about US$1,100 in 1990). Other studies based on the same method produce very similar estimates of China's openness. For example, the Asia Pacific Economics Group (1995) estimated an openness ratio of a little over 13 percent in 1994 by using real per capita income of US$1,543 in that year. Consequently, Findlay and Watson argue that when the figures are adjusted, China begins to look like many other large countries, a little more open than India and a little less than the United States. Therefore, when we talk about China's openness, special caution should be taken because of the data problems discussed above.

In general, the above analysis shows that in the last 16 years China has achieved remarkable progress in improving its trade performance and has greatly integrated itself into the world economy. However, the question is what have been the sources for China's rapid trade expansion since the early 1980s? As we have briefly mentioned in Section 8.1, three main sources have been identified by previous studies. First is the results of market oriented economic reforms and trade liberalisation; second is the rapid growth of TVEs; and third is the massive inflows of FDI associated with the fast trade growth of FFEs. Our interest here is to investigate the impact of FDI on China's trade growth. Therefore, in the next section we will examine the direct contribution of FFEs to China's trade growth.

8.4 The Role of FFEs in China's Trade Expansion

8.4.1 The contribution of FFEs to China's trade growth

The most direct way to measure the impact of FDI on China's trade growth is to examine the trade performance of FFEs. Table 8.4 presents the trade value and shares of FFEs in China from 1980 to 1995. As the table indicates, in terms of trade value, FFEs' trade has increased very fast from US$43 million in 1980 to US$109,818 million in 1995, with an annual growth rate of 68.71 percent. FFEs report both rapid export and import growth, with annual average growth rates of 78.32 percent and 65.13 percent respectively from 1980 to 1995.

To illustrate the contribution of FFEs to China's trade expansion more intuitively, Figure 8.5 presents the trade performance of China from 1980 to 1995 with and without the trade value directly associated with FFEs. As the figure indicates, before 1987 the contribution of FFEs' trade to China's total trade was marginal. However, from 1987 to 1990 FFEs gradually increased their importance in China's total trade, and after 1990 FFEs have become an increasingly more and more important contributor to China's trade growth. In other words, without the contribution of FFEs, the growth rate of China's trade in the early 1990s would be much smaller.

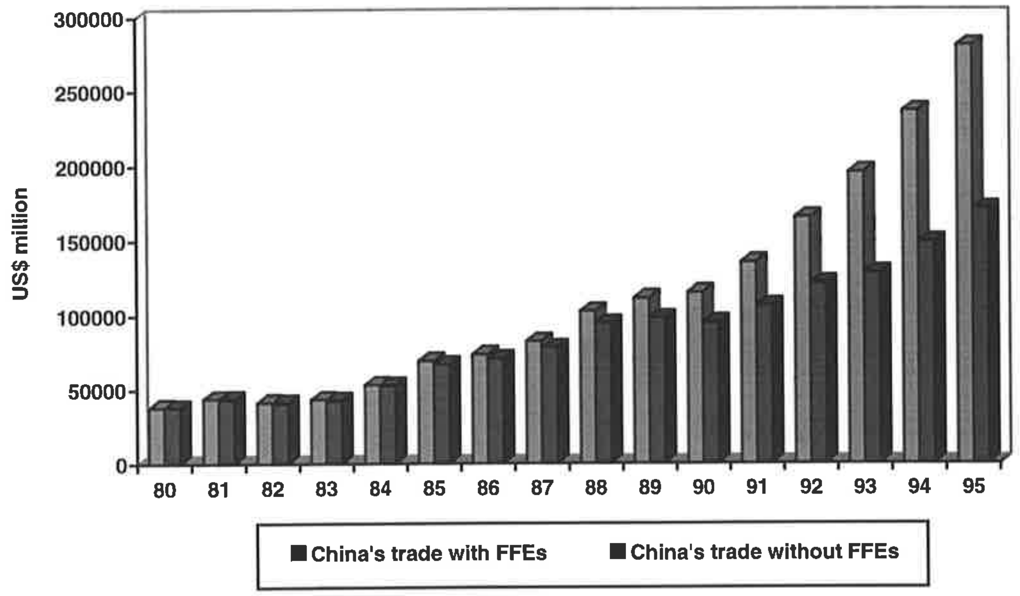
Table 8.4 Trade and shares of FFEs in China (1980-95)

Year	FFEs' total (million US$)			FFEs as % of China's total		
	Total trade	Exports	Imports	Total trade	Exports	Imports
1980	43	8	34	0.11	0.05	0.17
1981	143	32	111	0.33	0.15	0.50
1982	329	53	276	0.79	0.24	1.43
1983	618	330	288	1.42	1.49	1.35
1984	468	69	399	0.87	0.26	1.46
1985	2361	297	2064	3.39	1.09	4.89
1986	3012	582	2430	4.08	1.88	5.67
1987	4330	1208	3122	5.24	3.06	7.23
1988	8203	2456	5747	7.98	5.17	10.40
1989	13709	4913	8796	12.28	9.35	14.87
1990	20120	7814	12306	17.43	12.58	23.07
1991	28954	12047	16907	21.35	16.77	26.50
1992	43726	17356	26370	26.42	20.43	32.72
1993	67070	25237	41833	34.27	27.51	40.24
1994	87647	34713	52934	37.03	28.68	45.76
1995	109818	46876	62942	39.10	31.51	47.66
Annual average growth rate	**68.71%**	**78.32%**	**65.13%**	**47.93%**	**53.63%**	**45.61%**

Sources: Data for 1980 -1993 are from the State Statistical Bureau (1995), *Zhongguo Duiwai Jingji Tongji Nianjian 1994* [China Foreign Economic Statistical Yearbook 1994], Zhongguo Tongji Chubanshe, Beijing, p. 164.

Data for 1994 - 1995 are from the State Statistical Bureau (1996), *Zhongguo Tongji Nianjian 1996* [China Statistical Yearbook 1996], Zhongguo Tongji Chubanshe, Beijing, p. 596.

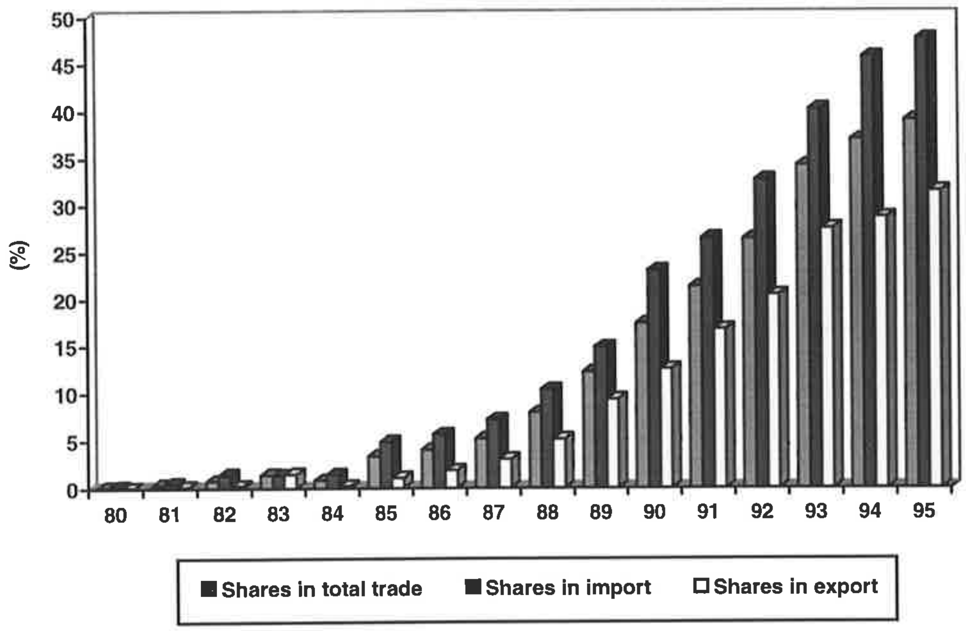
Figure 8.5 China's total trade with and without FFEs (1980-95)



Source: As Table 8.1 and Table 8.4.

Another way to look at the contribution of FFEs to China's trade growth is to examine the shares of FFEs' trade in China's total trade. Figure 8.6 presents the shares of FFEs in China's total trade as well as in exports and imports. From 1980 to 1984 FFEs' shares in China's total trade as well as in exports and imports were almost negligible, averaging less than 1 percent. However, after 1984 the trade share of FFEs began to increase gradually, reaching 12.3 percent in 1989. Since 1990 the trade shares of FFEs have experienced unprecedented growth, reaching 39.1 percent of China's total trade and 31.5 percent and 47.7 percent of China's total exports and imports respectively in 1995.

Figure 8.6 Shares of FFEs in China's trade (1980-95)



Source: As Table 8.4.

8.4.2 The significance of FFEs in China's manufactured exports

The contribution of foreign-funded enterprises to China's exports is more significant in the manufacturing sector. As indicated in Table 8.5, in 1995 manufacturing FFEs exported 368.59 billion *yuan* of manufactured products, accounting for 51.24 percent of China's total manufactured exports, which is 20 percentage points higher than the average export share of FFEs in China's total exports. In terms of FFEs' share of industry' total exports, FFEs now dominate many industries' exports. The most significant is the electronics and telecommunication equipment industry in which FFEs generated 95 percent of the industry's total exports. The role of FFEs in manufactured exports is also significant in the following industries: printing and record pressing, plastic products, furniture manufacturing, leather, fur and related products, instruments and meters, cultural, education and sports goods, metal products, and clothing and other fibre products, in which the share of FFEs in the industry's total exports was over 60 percent. In terms of industry's share of FFEs' total exports, again the electronics and telecommunication equipment industry held the lion's share of 23.64 percent, followed by clothing and other fibre products (13.32 percent), textiles (10.04 percent), and leather, fur and related products (9.64 percent), together these four industries generated 56.64 percent of FFEs' total manufactured exports.

In terms of market orientation, as shown in Table 8.6, in 1995 for the whole manufacturing sector FFEs exported 38 percent of their total manufactured products. For the four industries of electronics and telecommunication equipment, clothing and other fibre products, textiles, and leather, fur and related products --- the largest exporters of FFEs --- they exported 59 percent, 72 percent, 49 percent, and 74 percent of their manufactured products respectively. Comparing with China's domestic enterprises, FFEs are more export-oriented than domestic enterprises not only for the entire manufacturing sector but also for all industries across manufacturing sector. In 1995, the exports to sales ratio of FFEs in manufacturing sector was four times as large as the exports to sales ratio of China's domestic enterprises.

Table 8.5 Structure of FFEs' exports in China's manufacturing (1995)

Industries	FFEs' total manufactured exports (billion yuan)	FFEs' share of industry's total exports (%)	Industry's share of FFEs' total exports (%)
Food processing	14.83	57.46	4.02
Food manufacturing	4.71	38.65	1.28
Beverage manufacturing	1.27	37.84	0.35
Tobacco processing	0.08	2.51	0.02
Textile	37.01	28.54	10.04
Clothing & other fibre products	49.09	60.51	13.32
Leather & Fur products	35.53	73.21	9.64
Timber processing	3.13	57.70	0.85
Furniture	2.82	75.09	0.76
Paper & Paper products	3.40	53.41	0.92
Printing	1.39	79.41	0.38
Cultural, Education & Sports goods	14.45	69.02	3.92
Petroleum refining & Coking	0.62	8.50	0.17
Chemical materials & products	10.27	31.62	2.79
Medical & Pharmaceutical products	2.78	21.89	0.75
Chemical fibre	2.59	41.48	0.70
Rubber Products	5.83	53.29	1.58
Plastic products	14.72	77.17	3.99
Non-metal mineral products	6.76	38.93	1.83
Ferrous metal smelting & pressing	2.20	6.30	0.60
Non-ferrous metal smelting & pressing	2.90	24.40	0.79
Metal products	19.08	61.14	5.18
General machinery	6.99	30.58	1.90
Special machinery	4.06	35.47	1.10
Transport equipment	6.10	30.42	1.66
Electrical machinery & equipment	20.55	58.31	5.57
Electronics & Telecom. equipment	87.14	94.45	23.64
Instruments & Meters	8.30	71.81	2.25
Others	---	---	---
Total	**368.59**	**51.24**	**100.00**

Source: Calculated from the Office of the Third National Industrial Census (1997), *Zhonghua Renmin Gonghe Guo 1995 Nian Disanci Quanguo Gongye Pucha Ziliao: Zonghe Qiye Juan* [Data of the 1995 Third National Industrial Census of the PRC: Total Enterprises], Zhongguo Tongji Chubanshe, Beijing.

Table 8.6 Exports to sales ratio of FFEs and DOEs in manufacturing (1995)

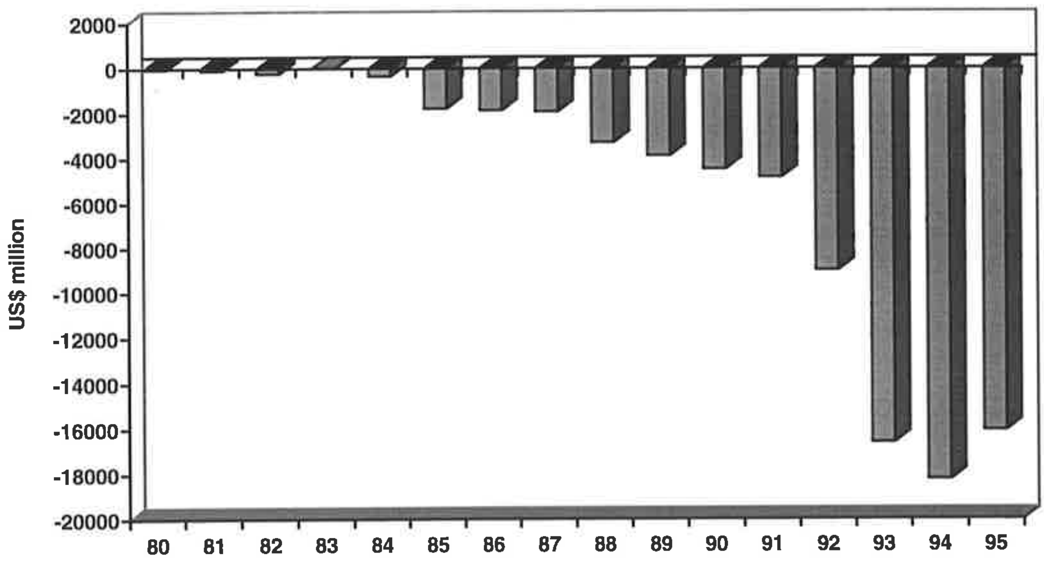
Industries	FFEs' exports to sales ratio (%)	DOEs' exports to sales ratio (%)
Food processing	24.48	4.86
Food manufacturing	16.63	11.58
Beverage manufacturing	4.47	2.61
Tobacco processing	13.89	3.03
Textile	48.60	26.45
Clothing & other fibre products	71.76	48.37
Leather & Fur products	73.59	31.79
Timber processing	31.41	8.63
Furniture	45.73	6.71
Paper & Paper products	20.74	3.71
Printing	19.68	1.14
Cultural, Education & Sports goods	81.23	37.51
Petroleum refining & Coking	21.39	3.30
Chemical materials & products	22.66	7.08
Medical & Pharmaceutical products	16.85	13.45
Chemical fibre	26.12	5.34
Rubber Products	39.61	11.56
Plastic products	42.55	6.21
Non-metal mineral products	21.36	4.31
Ferrous metal smelting & pressing	9.38	9.28
Non-ferrous metal smelting & pressing	17.98	7.97
Metal products	47.26	10.91
General machinery	21.89	8.43
Special machinery	27.56	4.93
Transport equipment	7.60	5.86
Electrical machinery & equipment	34.29	7.82
Electronics & Telecom. equipment	59.11	5.39
Instruments & Meters	51.33	12.79
Others	---	---
Total	**37.84**	**9.69**

Source: Calculated from the Office of the Third National Industrial Census (1997), *Zhonghua Renmin Gonghe Guo 1995 Nian Disanci Quanguo Gongye Pucha Ziliao: Zonghe Qiye Juan* [Data of the 1995 Third National Industrial Census of the PRC: Total Enterprises], Zhongguo Tongji Chubanshe, Beijing.

8.4.3 The issues in FFEs' trade balance

Alongside the fast trade growth FFEs have also raised serious trade balance issues. Figure 8.7 depicts the trade balance profile of FFEs from 1980 to 1995. The figure clearly shows that, except in 1983, FFEs have been running trade deficits continuously since 1980, and the size of the trade deficits grew rapidly. Since all FFEs in China are supposed to balance their own foreign exchange expenditure and income, the continuous and increasingly large trade deficit implies a critical issue for them.

Figure 8.7 Trade balance of FFEs in China (1980-95)



Source: As Table 8.4.

If we decompose FFEs' total imports into those which are part of FFEs' investments and those which are goods and materials for FFEs' production, the picture of the FFEs' trade balance changes dramatically. According to China's official statistics, the equipment imported by FFEs as part of their investments are reported both as FDI and as FFEs' imports. As Table 8.7 shows, this type of import, according to the available data of 1992 to 1995, accounted for 30 percent of FFEs' total imports in 1992, 40 percent in 1993, 38 percent in 1994, and 30 percent in 1995. If we deduct this from FFEs' total imports, then the trade balance of FFEs would be in surplus in 1993 to 1995.

Table 8.7 Decomposing FFEs' imports and the adjusted FFEs' trade balance

Year	FFEs' total imports (million US$)	Equipment imported as investments (million US$)	Equipment imports as % of FFEs' total imports	FFEs' imports of goods and materials (million US$)	Adjusted FFEs' trade balance (million US$)
1992	26370	8018	30.41	18352	-996
1993	41833	16613	39.71	25220	17
1994	52934	20300	38.35	32634	2079
1995	62948	18740	29.77	44208	2668

Sources: Calculated from the State Statistical Bureau (1995), *Zhongguo Duiwai Jingji Tongji Nianjian 1994* [China Foreign Economic Statistical Yearbook 1994], Zhongguo Tongji Chubanshe, Beijing, and the Ministry of Foreign Trade and Economic Cooperation (1996), *Foreign Economic Statistical Bulletin*, April 1996.

According to China's regulations on FFEs and on foreign exchange control, all FFEs in China are required to balance their own foreign exchange transactions. The regulations are implemented through requiring FFEs to open a RMB deposit account and a separate foreign exchange deposit account with either the Bank of China or another bank approved by the State Administration for Exchange Control (SAEC). All foreign exchange receipts and disbursements must flow through the foreign exchange account. Before December 1996, since the RMB was not convertible on either current account or capital account into foreign exchange, this rule effectively required FFEs to generate all foreign exchange needed for the remittance of dividends, expenditures and other distributions. However, as we reviewed in Chapter 2, there are some options for FFEs to fuel their foreign exchange bank accounts. These options include: domestic sales of sophisticated products; foreign exchange adjustment; reinvestment of RMB profits; domestic products export; government assistance; mortgage of RMB on foreign exchange; import substitution; and foreign exchange swaps. These options have greatly improved the situation of foreign exchange management of FDI firms. However, balancing foreign exchange continued to be a problem without RMB convertibility. As a result, in December 1996, the Chinese government announced that RMB would be convertible on current account from the start of December 1996. This includes all payments for international goods and services trade, repayments of loans and profit remittance. This significant policy change in foreign exchange management will not only assist China's international traders but also facilitate the business operations of foreign investors.

8.4.4 The correlation between provincial trade and FFEs' trade

Although China as a whole has achieved great progress in its international trade expansion, the trade performance among China's provinces has been very unbalanced. As Table 8.8 shows, in terms of individual provinces, Guangdong's trade performance has been the best, averaging more than 30 percent of China's total trade from 1991 to 1993 and growing rapidly as well. Shanghai, Fujian, Jiangsu and Liaoning are among the top five largest trade provinces in China. In terms of regions, the East region overwhelmingly dominated China's trade, accounting for nearly 80 percent total.

It is very interesting to note that the provinces which have higher shares in China's total trade also have higher shares of FFE trade in provincial total trade. For example, in 1993 for the top five largest trade provinces, the shares of FFE trade in their provincial total trade were 73 percent in Guangdong, 46 percent in Shanghai, 61 percent in Fujian, 53 percent in Jiangsu, and 33 percent in Liaoning respectively. In terms of regions, the share of FFE trade in the East region was more than half of the region's total trade since 1992.

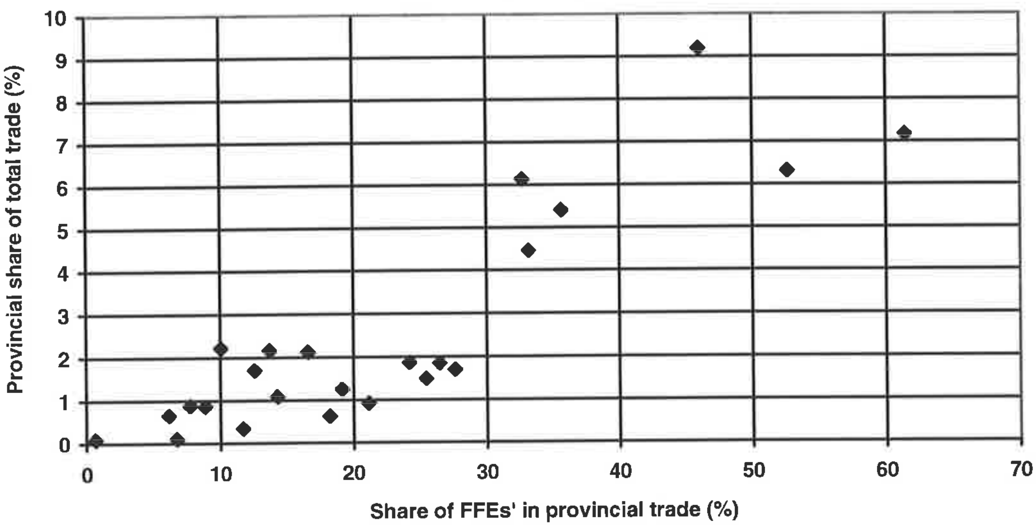
Figure 8.8 presents the provincial shares in China's total trade and the FFE shares in each province's total trade. The figure clearly demonstrates the positive relationship between provincial trade shares in China's total trade and the FFE trade shares in each province's total trade.

Table 8.8 The shares of provincial trade in China's total trade and the shares of FFEs' trade in provincial total trade (%)

Province	Provincial trade as percent of China's total trade			FFEs' trade as percent of provincial total trade		
	1991	1992	1993	1991	1992	1993
Beijing	2.53	2.23	2.24	43.13	56.74	51.24
Tianjin	2.64	2.37	2.01	23.95	32.64	61.26
Hebei	2.63	2.11	1.70	9.78	16.16	27.65
Shanxi	0.77	0.71	0.63	12.56	13.80	18.24
Inner Mongolia	0.78	0.93	0.87	6.89	7.04	8.91
Liaoning	8.79	7.64	6.13	17.31	23.25	32.71
Jilin	1.71	1.94	2.16	2.71	7.91	13.73
Heilongjiang	2.60	2.83	2.22	3.72	5.14	10.06
Shanghai	10.50	9.75	9.20	25.09	34.06	46.05
Jiangsu	5.88	6.25	6.31	27.70	39.78	52.67
Zhejiang	4.50	4.65	4.45	14.43	20.09	33.15
Anhui	1.11	1.10	0.93	7.08	11.13	21.15
Fujian	5.66	6.57	7.16	67.65	67.39	61.44
Jiangxi	0.92	0.90	0.81	12.12	17.15	33.24
Shandong	6.05	5.85	5.40	12.70	21.19	35.66
Henan	1.55	1.56	1.26	3.82	8.77	19.14
Hubei	1.79	1.69	1.85	10.88	17.05	26.47
Hunan	1.80	2.08	1.71	4.48	7.50	12.60
Guangdong	28.98	29.58	34.06	79.54	83.56	72.81
Guangxi	1.31	1.63	1.49	13.14	12.85	25.48
Hainan	1.76	1.69	1.87	19.49	22.57	24.24
Sichuan	2.24	2.20	2.12	8.24	10.92	16.60
Guizhou	0.32	0.34	0.26	6.85	13.33	14.71
Yunnan	0.99	0.96	0.88	3.01	4.92	7.79
Shaanxi	1.00	1.06	1.09	11.11	8.92	14.32
Gansu	0.36	0.42	0.35	1.73	5.19	11.77
Qinghai	0.10	0.10	0.09	1.31	2.21	0.67
Ningxia	0.13	0.13	0.10	8.66	2.88	6.79
Xinjiang	0.60	0.75	0.66	6.15	6.28	6.23
By Regions						
East Region	78.69	78.08	79.78	45.09	52.00	56.03
Central Region	17.03	17.24	15.91	11.99	16.01	22.26
West Region	4.28	4.68	4.31	6.36	6.97	10.00

Sources: Calculated from the State Statistical Bureau (1995), *Zhongguo Duiwai Jingji Tongji Nianjian 1994* [China Foreign Economic Statistical Yearbook 1994], Zhongguo Tongji Chubanshe, Beijing, and the various issues of the Editorial Board of the Almanac of China's Foreign Economic Relations and Trade, *Zhongguo Duiwai Jingji Maoyi Nianjian* [Almanac of China's Economic Relations and Trade], Zhongguo Shehui Chubanshe, Beijing.

Figure 8.8 The relationship between provincial shares in China's total trade and FFEs shares in provincial total trade (1993)



Source: As Table 8.8.

These data suggest that there may exist a positive correlation between the shares of provincial trade in China's total trade and the shares of FFE trade in provincial total trade. To examine this relationship further, a Spearman's rank correlation test across provinces for the years of 1991 to 1993 was conducted. The test results are presented in Table 8.9. The Spearman's rank tests show that the null hypothesis of no correlation between these two variables is rejected for all three years at 99 percent significance level. The test results revealed that there was a positive correlation between the provincial trade shares in China's total trade and the FFE trade shares in provincial total trade. These results imply that the provinces which have higher shares of FFE trade in their provincial total trade will have higher trade shares in China's total trade. In other words, the higher trade share of a province in China's total trade is associated with or directly related to the higher trade share of FFEs in its provincial total trade.

Table 8.9 Spearman's rank correlation test between the shares of province in China's total trade and the shares of FFEs in provincial total trade

Year	Calculated Spearman's rank correlation coefficient (r_s)	Critical value of Spearman's rank correlation coefficient (n = 29, $\alpha = 0.01$) (r_o)	Null hypothesis of "no correlation"
1991	0.668473***	0.440	$r_s > r_o$, reject null hypothesis
1992	0.721182***	0.440	$r_s > r_o$, reject null hypothesis
1993	0.736456***	0.440	$r_s > r_o$, reject null hypothesis

Note: *** indicates 99% significant level of Spearman's rank coefficient (one-tailed test).

However, to investigate the impact of FDI on trade, we cannot just rest our conclusion on correlations. Therefore, in the next section we move beyond correlations and employ more comprehensive econometric models to investigate the relationship.

8.5 Foreign Direct Investment and Trade: An Empirical Investigation

What is the relationship between FDI and trade? The theories reviewed in Section 8.2 predict either a substitute or complementary relationship between FDI and trade. However, some empirical studies have revealed a positive relationship between FDI and trade (United Nations, 1993; World Bank, 1994; Petri, 1995; United Nations, 1996).

Our analyses above also revealed that FDI has positive impact on trade in the case of China. This positive relationship between FDI and trade suggests that FDI and trade in China are primarily complementary rather than substitutes in bridging the differences in factor endowments between China and its foreign investors and trade partners. To investigate the relationship between FDI and trade further, we conducted the following empirical tests based on the evidence from the impact of FDI on China's provincial trade and from the impact of FDI on China's bilateral trade.

Our hypothesis is that FDI has a positive effect on trade flows since FDI and trade are complementary. There are two ways to test this hypothesis: one is based on data at the product level and the other is based on data at the aggregate level. In this study because of data constraints we adopt the second method and use the aggregate data both from provincial level and from China's bilateral level to test the relationship between FDI and trade.

The framework of analysis is based on the gravity model of international trade. There are a lot of factors influencing the magnitudes of international trade. However, based on the spirit of the gravity model of international trade, the size and the geographical distance of countries are the most important factors determining the magnitudes of bilateral trade as well as countries' overall trade (Frankel and Romer, 1996). In this study in addition to the common variables specified by the gravity model, we deliberately add FDI as a explanatory variable.[56] We want to see, in addition to the

[56] The method of adding some additional variables in the gravity model of international trade has been used in a number of studies, for example, Frankel (1994), Wei Shangjin and Frankel (1994), Frankel and Romer (1996).

other variables, whether FDI has any impact on China's provincial trade and China's bilateral trade flows, and if there is, what is the direction of the impact.

8.5.1 The impact of FDI on trade: Evidence from China's provincial trade

8.5.1.1 The model and specification of the variables

Following the specification of the gravity model of international trade, the basic model of China's provincial aggregate trade flows with the rest of the world can be derived as: [57]

$$\ln T_{i*} = \beta_0 + \beta_1 \ln X_i + \beta_2 \ln R_{i*} \tag{8.1}$$

[57] The derivation of the basic model of provincial aggregate trade flows with the world is as following:

$$T_{ij} = \alpha_0 X_i^{\alpha 1} X_j^{\alpha 2} R_{ij}^{\alpha 3}$$

where:

T_{ij} = the trade flows between province i and country j

X_i = province i's factors

X_j = country j's factors

R_{ij} = linkage factors between province i and country j

For the aggregate trade flows between province i and the rest of the world, we have the following equation:

$$T_{i*} = [\alpha_0 X_*^{\alpha 2}] X_i^{\alpha 1} R_{i*}^{\alpha 3}$$

Let $\beta_0 = [\alpha_0 X_*^{\alpha 2}]$, $\beta_1 = \alpha_1$, $\beta_2 = \alpha_3$, then we have:

$$T_{i*} = \beta_0 X_i^{\beta 1} R_{i*}^{\beta 2}$$

Applying natural logarithm to both sides of the equation, we have the following expression for the aggregate trade flows between province i and the rest of the world.

$$\ln T_{i*} = \beta_0 + \beta_1 \ln X_i + \beta_2 \ln R_{i*}$$

where:

T_{i*} = the aggregate trade flows between province i and the rest of the world

X_i = province i's factors

R_{i*} = linkage factors

The basic model (8.1) states that the aggregate magnitude of trade flows between province i and the rest of the world is a function of province i's variables and the linkage variables. According to the gravity model of international trade incorporating our modification, we include the following variables in the estimation of the model of China's provincial aggregate trade flows with the rest of the world.

(1) Provincial aggregate trade

Provincial aggregate trade (T) is the dependent variable in this study. It is the sum of exports and imports of each province with the rest of the world in a year at 1980 constant US dollar prices. In this study we do not consider inter-provincial trade among China's provinces.

(2) Size of province

The size of the province is measured by the total population (POP) at the year end. Using population as the size of a country is practiced in many studies. The population variable not only reflects the size of an economy but also reflects the level of resource endowment. In addition, in the case of China since the number of State-Owned Enterprises (SOEs) in each province is different, the value-added of SOEs is calculated as part of provincial GDP, but the trade of SOEs may go through another channel and may not be calculated as part of the provincial trade. Therefore, the population is a more consistent variable as compared with GDP in estimating the effect of provincial size on its trade. According to the gravity model, we expect that the provincial population has a positive effect on provincial aggregate trade with the rest of the world.

(3) Relative distance of province

The relative distance, a linkage variable, is measured by the index of remoteness (RMT) which is the weighted average distance of each province with respect to all countries in the world.[58] Taking account of the transport and information cost associated with the relative distance, the expected effect of remoteness on provincial aggregate trade flows with the rest of the world is negative.

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[58] The remoteness is defined as the weighted average distance of province i to all the countries in the world, and the weight is the share of country j's GDP in the world total GDP. The following formula expresses province i's remoteness.

$$\text{Remoteness}_i = \sum_{j=1}^{J} w_j D_{ij}$$

where

$$w_j = \frac{Y_j}{Y_w}$$

Y_j = country j's GDP

Y_w = world GDP

D_{ij} = direct distance between province i to country j.

In this study 34 countries are chosen as the 'other' countries in the world to calculate the weighted average distance of a given province. The 34 countries are: Australia, Austria, Belgium, Brazil, Canada, Chile, Denmark, France, Finland, Germany, Hong Kong, Israel, Italy, Japan, Korea, Kuwait, Malaysia, Mexico, Netherlands, New Zealand, Norway, Panama, Portugal, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, United Kingdom, United States, Venezuela.

(4) Per capita income of province

The per capita income (PY) is measured by per capita national income of each province at 1980 constant *Renminbi* prices. The effect of per capita income on provincial aggregate trade is expected to be positive.

(5) Foreign direct investment

Foreign direct investment (FDI) is another linkage variable. The data for (FDI) are the total investment stock of FFEs at the year end in each province at 1980 constant US dollar prices. The reason for using the total investment stock of FFEs instead of using the inflows of FDI is mainly based on the following considerations. First, there is a time lag between the inflows of FDI and the effects generated by that inflows of FDI on trade. Second, FDI has accumulated effects on trade, which means that all the FDI historically invested has effects on current trade. Third, empirical studies have shown that "trade eventually leads to FDI and, on balance, FDI leads to more trade" (United Nations, 1996, p. 91). However, the impact of trade on FDI to take place usually has a period of time lag. As a result, the current trade has no impact on the historically invested FDI stock. In other words, the historically invested FDI stock is given and it is independent from the current trade.[59] Therefore, to avoid these problems we use the total investment stock of FFEs in each province to estimate the effects of FDI on trade. The total investment stock of FFEs not only reflects the current production capacity of

[59] We should aware that the simultaneity problem may be important when testing the relationship between trade and FDI by using flow data in the equation. However, in this study we use the data of accumulated FDI stock as the independent variable and the current trade as the dependent variable in the equation. Therefore, the simultaneity problem in this equation is avoided or significantly reduced, if there is any such problem.

FFEs, which has direct effects on current trade flows, but also captures the effects of all historically invested FDI on current trade flows. In this study the total investment stock of FFEs is expected to have a positive effect on the provincial trade flows.

Table 8.10 List of variables of provincial aggregate trade equation

Variable name	Specification of variables	Source
Dependent variable		
T_{i*}	Total trade flows (exports plus imports) of province i. Millions of US dollars at 1980 prices.	Various issues of the *Almanac of China's Economic Relations and Trade.*
Independent variable		
POP_i	Total population of province i. Ten thousand people.	Various issues of *China Statistical Yearbook.*
PY_i	Per capita income of province i. *Renminbi* yuan per capita at 1980 prices.	Same as above.
RMT_{i*}	Weighted average distance of province i from the rest of the world.	Countries' and world GDPs are from various issues of the *World Development Report* and the distances are measured from the map in the *Almanac of China's Economic Relations and Trade.*
FDI_{i*}	Total investment stock of FFEs in province i. Millions of US dollars at 1980 prices.	*China Foreign Economic Statistics 1979-91* and *China Foreign Economic Statistical Yearbook 1994.*

8.5.1.2 Regression results and explanations

Based on equation (8.1) --- the basic model for China's provincial aggregate trade flows with the rest of the world --- and the variables we discussed in the proceeding part, we establish the following equation to test the impact of FDI on provincial aggregate trade flows:

$$\ln T_{i*} = \beta_0 + \beta_1 \ln POP_i + \beta_2 \ln PY_i + \beta_3 \ln RMT_{i*} + \beta_4 \ln FDI_{i*} + \varepsilon_i \qquad (8.2)$$

where ε_i is the stochastic disturbance, the βs are the regression parameters to be estimated and the variables are as defined above. The estimated coefficients of lnPOP, lnPY, lnRMT, and lnFDI variables will be elasticities.

Using ordinary least squares (OLS) cross-section regression analysis with White's heteroskedasticity-consistent covariance matrix correction for an unknown form of heteroskedasticity, the relationship between provincial trade flows and the suggested explanatory variables is investigated across provinces for the four separate years of 1987, 1989, 1991 and 1993. There are 29 provinces in the sample excluding Tibet. The regression results are reported in Table 8.11.

Table 8.11 Regression results of provincial trade equations

Variable	Model 87	Model 89	Model 91	Model 93
Constant	2.2893	3.5538	5.6949	6.5689
	(0.5357)	(0.8067)	(1.877)	(1.355)
LnPOP	0.75293	0.61607	0.43061	0.32038
	(8.211)***	(8.621)***	(7.425)***	(3.152)***
LnPY	1.1390	0.98541	0.56037	0.54441
	(6.941)***	(7.682)***	(4.182)***	(3.417)***
LnRMT	-2.2562	-2.1502	-1.8926	-1.9094
	(-3.295)***	(-2.498)**	(-3.313)***	(-2.086)**
LnFDI	0.14028	0.19670	0.36531	0.32208
	(2.016)**	(2.323)**	(4.790)***	(2.166)**
Adjusted R^2	0.91	0.91	0.94	0.91
DF	24	24	24	24
F - statistics	72.37	71.94	107.68	71.97

Notes: Adjusted White's heteroskedasticity-consistent t-statistics in brackets.

** Statistically significant at 0.05 level.

*** Statistically significant at 0.01 level.

Before we draw any conclusion from the regression results, we apply some diagnostic tests to justify the adequacy of our estimated model for the description of the variations of provincial trade flows with the rest of the world. The results of diagnostic tests are provided in Appendix 1. In general, the log-linear form equation of the provincial trade flows performs quite well against a number of diagnostic tests. Therefore, we accept this model as an adequate representation of the provincial trade flows with the rest of the world.

Based on the diagnostic tests for our estimated model, we are now in a position to draw some inference from the results. The regressions performed very well. All the models with the suggested independent variables offer very good explanations of the variance in China's provincial aggregate trade flows with the rest of the world. In general, provincial trade is positively related to provincial population size and per capita income, and negatively related to provincial remoteness from the rest of the world. The effect of FDI on provincial trade is positive and statistically significant for all regressions of the four years of 1987, 1989, 1991, and 1993. The interesting finding is that the coefficients of FDI for the four years have been increasing over time, which suggests that the effect of FDI on provincial trade has become more and more important from the late 1980s to the early 1990s. The estimated coefficients of FDI indicate that a one percent increase in provincial FDI stock will result in a less than 0.2 percent increase in total provincial trade in the late 1980s. However, in the early 1990s a one percent increase in provincial FDI stock will result in a more than 0.3 percent increase in total provincial trade.

Thus the regression results have revealed the positive impact of FDI on trade from the evidence of China's provincial trade. However, the results based on the evidence of China's provincial aggregate trade only revealed that FDI has a positive impact on promoting the trade of China's host provinces. What is the impact of FDI on bilateral trade? We investigate this question in the following part.

8.5.2 The impact of FDI on trade: Evidence from China's bilateral trade

In the preceding part we have revealed empirically the positive impact of FDI on promoting trade in China's host provinces. In this part we will investigate the impact of FDI on bilateral trade flows based on the evidence of the bilateral trade between China and its trade partners in the world.

8.5.2.1 The model and specification of the variables

Also based on the spirit of the gravity model, the basic model of the bilateral trade flows between China and each of its trade partners in the world can be derived as:

$$BT_{Cj} = \beta_0 X_C^{\beta 1} X_j^{\beta 2} R_{Cj}^{\beta 3} \tag{8.3}$$

where:

BT_{Cj} = the magnitude of bilateral trade flows between China (C) and country j

X_C = China's (C) factors

X_j = country j's factors

R_{Cj} = linkage factors

According to the essence of the gravity model of international trade, the two most important factors explaining bilateral trade flows are the geographical distance between the two countries and their economic size. In this study we also add FDI in the gravity model. The goal is to see how much of the bilateral trade flows between China and its trade partners can be explained by the factors common to bilateral trade throughout the world, and how much is contributed by the effect of FDI.

(1) Bilateral trade

Bilateral trade (BT) is the dependent variable which is the total merchandise trade value --- exports plus imports --- between China and each of its trade partners in a year in 1987 constant US dollars.

(2) Size of economy

According to the gravity model of international trade, the volume of trade between two countries is very much determined by their economic size. In this study we use GDP as the economic size and enter GDPs in product form in the regression model. The practice of entering GDPs in product form is empirically well established in bilateral trade regressions (Frankel, 1994; Wei Shangjin and Frankel, 1994). GDPs are presented in 1987 constant US dollars, and are expected to have a positive effect on bilateral trade flows.

(3) Geographical distance

Also based on the spirit of the gravity model, the geographical distance with its associated transport cost is a very important factor in determining the volume of bilateral trade flows. The distance variable is expected to have a negative effect on bilateral trade. The data on distance between China and each of its trade partners are generated by directly measuring from a map.[60]

(4) Foreign Direct Investment

Data for FDI are the accumulated capital stock invested by each of China's trade partners at the year end in 1987 constant US dollars. The reason for the use of FDI stock instead of FDI flows as the explanatory variable is the same as discussed in the preceding section. We expect the higher the FDI stock in China from a particular country, the higher the bilateral trade flows between China and that particular trade partner.

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[60] For the countries located to the south of China, the distance is measured between Guangzhou and the capital city of the country, and for other countries the distance is measured between Beijing and the capital city of the country.

Table 8.12 List of variables of China's bilateral trade regression equation

Variable name	Specification of variables	Source
Dependent variable		
BT_{Cj}	Sum of export and import between China and country j. Millions of US dollars at 1987 prices.	*China Foreign Economic Statistical Yearbook 1994.*
Independent variable		
$GDPs_{Cj}$	Product of GDPs of China and country j. Millions of US dollars at 1987 prices.	Various issues of the *World Development Report.*
$DIST_{Cj}$	Distance between China and country j.	Measured from the map in the *Almanac of China's Economic Relations and Trade.*
FDI_{Cj}	Accumulated FDI stock invested by country j in China. Millions of US dollars at 1987 prices.	Calculated from the various issues of the *Almanac of China's Economic Relations and Trade.*

8.5.2.2 Regression results and explanations

Based on equation (8.3) --- the basic model of bilateral trade flows between China and each of its trade partners in the world --- and the variables discussed above, we establish the following equation to test the impact of FDI on bilateral trade flows between China and each of its trade partners.

$$\ln BT_{Cj} = \beta_0 + \beta_1 \ln GDPs_{Cj} + \beta_2 \ln DIST_{Cj} + \beta_3 \ln FDI_{Cj} + \varepsilon_j \qquad (8.4)$$

where ε_j is the stochastic disturbance, the βs are the regression parameters to be estimated, and the variables are as defined above. The estimated coefficients of lnGDPs, lnDIST, and lnFDI variables will be elasticities.

Also using ordinary least squares (OLS) cross-section regression analysis with White's heteroskedasticity-consistent covariance matrix correction for unknown form of heteroskedasticity, the relationship between bilateral trade flows and the suggested explanatory variables is investigated across countries for the four separate years of 1990, 1991, 1992, and 1993. There are 101 China's trade partners in the sample. The regression results are reported in Table 8.13.

Table 8.13 Regression results of China's bilateral trade equations

Variable	Model 90	Model 91	Model 92	Model 93
Constant	-3.8764	-3.5071	-4.4414	-4.7951
	(-2.794)**	(-2.616)**	(-2.986)***	(-4.027)***
LnGDPs	0.69166	0.66957	0.68847	0.71500
	(10.36)***	(10.68)***	(10.07)***	(11.34)***
LnDIST	-0.78459	-0.75723	-0.65306	-0.66327
	(-8.025)***	(-7.643)***	(-4.815)***	(-6.649)***
LnFDI	0.11612	0.12459	0.10075	0.11512
	(3.466)***	(3.838)***	(2.845)***	(2.936)***
Adjusted R^2	0.83	0.82	0.78	0.86
DF	97	97	97	97
F - statistics	158.48	154.01	121.52	208.08

Notes: Adjusted White's heteroskedasticity-consistent t-statistics in brackets.

** Statistically significant at 0.05 level.

*** Statistically significant at 0.01 level.

As before, to justify the adequacy of our estimated model for the description of the variations of China's bilateral trade flows with each of its trade partners, we apply some diagnostic tests in our estimated model. The results of diagnostic tests are provided in Appendix 2. In general, the log-linear form equation of China's bilateral trade flows with each of its trade partners performs quite well against a number of diagnostic tests. Therefore, we accept this model as an adequate representation of China's bilateral trade flows with each of its trade partners.

In all the regressions the independent variables have the expected signs and are statistically significant. As in previous studies using the gravity model in explaining international bilateral trade flows, a country's size and geographical distance are also the most important two variables in our regressions. However, in our study the added variable FDI is a positive and statistically significant factor in explaining the bilateral trade flows between China and its trade partners. The regression results show that the higher the FDI stock invested by China's trade partners the higher the bilateral trade flows will be between China and its trade partners. The estimated coefficients of FDI are relatively stable at the range of 0.10 - 0.12 for the four years from 1990 to 1993, which indicate that a one percent increase in FDI stock will result in around 0.11 percent increase in bilateral trade flows between China and its trade partners in the early 1990s.

8.5.3 Main findings

Our investigations of the impact of FDI on trade based on the evidence both from China's provincial total trade flows with the rest of the world and from China's bilateral trade flows with its trade partners have revealed several interesting findings. In general three main findings are worth mentioning.

First, the key finding of this study is that FDI has a positive impact both on promoting China's host province total trade flows with the rest of the world and on increasing the bilateral trade flows between China and its trade partners. Therefore, the regression results are consistent with a complementary relationship between FDI and trade in the case of China.

Second, the positive impact of FDI on promoting China's provincial trade flows has been increasing over time from the late 1980s to the early 1990s. This finding is consistent with the fact that the trade shares of FFEs both in the provincial trade and in China's total trade have been increasing very fast, particularly in the early 1990s.

Third, comparing the impact of FDI on China's provincial trade flows and on China's bilateral trade flows in the early 1990s, the impact of FDI on China's provincial trade flows was larger than that on China's bilateral trade flows. This is because that the impact of FDI on China's provincial trade flows is the total effect of FDI on trade, while the impact of FDI on China's bilateral trade flows is only part of the effect of FDI on trade. A considerable portion of trade generated by FDI may go to the third countries rather than between China and the FDI source countries. This situation is especially important for the NIEs, since their FDI in China is mainly international market export-oriented and particularly towards the developed countries' markets.

8.6 Conclusion

In this chapter we examined China's outstanding trade performance in the last 16 years and correspondingly investigated the relationship between FDI and trade and the impact of FDI on trade from the evidence of China. In general we found a positive relationship between FDI and trade and a positive impact of FDI on trade, both empirically from China's provincial trade and from China's bilateral trade. More precisely the following main findings are worth mentioning.

First, in the last 16 years China's international trade has experienced an unprecedented growth. However, China's achievements in its fast international trade expansion have a number of causes. The market oriented economic reforms and trade liberalisation, the remarkable development of TVEs, and the massive inflows of FDI during the last 16 years have all contributed greatly to the success of China's international trade growth. Apart from the other two main factors, FDI's contribution to China's trade growth has been very impressive. From 1980 to 1995, the share of FDI related trade in China's total trade increased from 0.11 percent to 39.1 percent with an annual growth rate of 48 percent. As a result, FDI has become one of the most important contributors to China's international trade growth, and its importance is increasing over time.

Second, because of the unbalanced distribution of FDI among China's provinces, the contribution of FDI to provincial trade among provinces is also different. However, the interesting finding is that provinces with higher trade shares in China's total trade are also the provinces with higher trade shares of FFEs in their provincial trade. In other words, provinces which have higher trade shares of FFEs in their provincial trade are the leading trade provinces in China. This finding revealed a very important positive relationship between FDI and trade in the case of China.

Third, to move beyond the correlations between FDI and trade, the empirical regression analyses revealed that FDI has positive and statistically significant impacts both on China's provincial total trade flows and on China's bilateral trade flows. The regression results reveal that the relationship between FDI and trade is mainly complementary in the case of China. This important finding is also consistent with our findings in the previous chapters that FDI in China is mainly concentrated in labour-intensive and export-oriented manufacturing activities.

Fourth, since the above findings are derived from the evidence of China, they may not be applied to other countries. However, if we take into account the source country and host country specific characteristics, we also can generalise some basic implications from the above findings. First, in terms of the source countries and their investment patterns, as we discussed in the previous chapters, the major source countries investing in China are the developing countries, particularly the NIEs. As determined by their own ownership advantages, their investments are mainly concentrated in labour-intensive activities and tend to be more export-oriented. Second, in terms of host country characteristics, China is well endowed with abundant labour and has a comparative advantage in labour-intensive activities. Therefore, the labour-intensive and export-oriented investment patterns of the developing source countries are well matched with China's resource endowments and comparative advantages. Ultimately, under these conditions FDI has a positive impact on trade. Therefore, we may generalise that FDI is more likely to have a positive impact on trade when developing source countries invest in a country which is well endowed with abundant labour and has a comparative advantage in labour-intensive activities.

Chapter 9

Conclusion and Policy Implications

Foreign direct investment in China provides a very valuable opportunity for both the theoretical study and empirical analysis of the issues involved when such investment occurs. This thesis, with respect to the main issues raised in Chapter 1, has analysed the location determinants, the source country differences and the impacts on trade of FDI in China over the past one and a half decades. The results obtained from this study have provided us with much insight into the general issues of FDI in developing countries. In particular, this study has extended our knowledge in three main ways: (1) greater understanding of the general causes of FDI from the aspect of the 'demand-side' factors by focusing on investigating the location determinants affecting inter-country, inter-province and inter-industry distributions of FDI; (2) better knowledge of the distinctive features of developing source countries' investments as compared to those of developed source countries; and (3) further evidence of the positive impact of FDI on trade in the case of FDI in China. This chapter will summarise the study and link the main findings of the different chapters.

9.1 Summary of the Study

How has China changed from totally prohibiting FDI to become the largest FDI recipient among developing countries and the second largest country to host FDI in the world within a period of one and a half decades? To understand China's change of attitude from restricting to encouraging inward FDI, as well as to provide a general policy background for this study, the thesis starts with an examination of the evolution of changes to China's FDI policies. In general, in all the policy aspects relating to FDI China has taken a positive but gradual reform approach. This has been demonstrated by the gradual shifts from the establishment of the four SEZs to the nationwide implementation of open policies for FDI, from granting permission for joint ventures to allowing wholly foreign owned enterprises, from tight foreign exchange control to RMB convertibility on current account and from offering tax incentives to attract FDI to the application of national treatment. Despite the limitations, this reform process has proved both politically necessary and empirically successful. The gradual changes to China's FDI policies clearly indicate that China has continued to express a strong desire to stimulate and guide its economic development through promoting a more liberalised legal and policy environment to attract FDI and through further pursuing economic reform to establish a more market-oriented economy.

Since the 1980s and especially in the early 1990s, China has received huge amounts of FDI inflows. Its shares both in the world total FDI inflows and in the total FDI inflows into developing countries have increased rapidly. However, China is large, and large countries normally receive a large amount of FDI inflows. What factors affect the inter-country distribution of FDI inflows and has China really received more FDI inflows from the world than it should have, based on its economic and geographical characteristics? According to Dunning's eclectic "OLI" paradigm, a host country's overall attractiveness to FDI is determined by the location advantages it possesses. Because resource endowments are not evenly distributed among countries and social and economic factors as well as government policies are also different among countries, the attractiveness of host countries to FDI is different. This implies that given the ownership advantages and the internalisation advantages of the source countries the differences in location advantages of host countries are very important in determining the distribution of FDI inflows into host countries.

Against the theoretical background, Chapter 3 investigated the location determinants affecting FDI inflows into developing countries by using a modified gravity model and econometric regression analysis to test the hypotheses based on the location advantages of the theory of FDI. The regression results provided strong support for the acceptance of the hypotheses. The main findings are: countries with larger market size, faster economic growth, higher per capita income, a higher level of FDI stock and more liberalised trade policies represented by the higher degree of openness attract relatively more FDI inflows, while higher efficiency wages and greater remoteness from the rest of the world deter FDI inflows.

As compared to the previous empirical studies, two improvements have been made in this study. First, in most of the previous studies the labour cost variables either have the wrong signs (positive) or are not statistically significant, even though having the negative signs expected. The main reason for this result is the use of the absolute wage rates rather than the efficiency wage in those studies. A lower absolute wage rate may also be accompanied by lower productivity, and a higher absolute wage rate may be associated with higher productivity. Therefore, the best measure of labour costs should be the efficiency wage rather than the absolute wage rate. Based on the above argument, in this study the efficiency wage is used as the labour costs variable, and according to our regression results, it is a negative and statistically significant location factor affecting FDI inflows into developing countries. Seeking low efficiency wages in order to reduce production costs and increase competitiveness is therefore one of the main motives of FDI in developing countries. This study has therefore made some improvement in the use of labour cost variables in the empirical study of location determinants of FDI inflows.

Second, the use of a measure of remoteness instead of the absolute distance as the distance factor in this study is based on the argument that what matters for the magnitude of aggregate FDI inflows from all source countries into a developing host country is the developing host country's geographic position relative to the rest of the world. Remoteness provides a standardised distance factor for each of the developing host countries with respect to all other countries in the world. According to the regression results, the large and negative estimated coefficient of remoteness reveals that transaction costs in terms of information gathering and familiarity with local market conditions are very important factors affecting the investment location decision of foreign investors.

By using the statistical model as an empirical norm, the analysis of the relative performance of China and other developing countries in attracting FDI inflows offers no obvious evidence that China's participation in attracting FDI inflow has diverted world FDI away from other developing countries towards China. We found that China's relative performance in attracting FDI inflow was at a level moderately above average both among the developing countries and among East and South-East Asian countries. Therefore, although China is the largest FDI recipient among developing countries and attracted a large amount of FDI inflows in absolute dollars, allowing for its huge market size, fast economic growth, low labour costs and other economic and geographical characteristics, China received its expected share of FDI inflows, or at most marginally more than the average among the developing countries during 1992 to 1994.

Using the same analytical method, the importance of location advantages in determining the distribution of FDI inflows has also been confirmed by the empirical study of provincial distribution of FDI inflows into China in Chapter 4. The empirical analysis has shown that facing the same set of source countries, provincial differences in the magnitude of FDI inflows are determined by the differences in location advantages of host provinces. Provinces with a higher GDP, a higher per capita income, a higher level of accumulated FDI stock, and more intensive transport infrastructure attracted relatively more FDI inflows, while higher efficiency wages deterred FDI inflows. In addition, the regional differentiation in the timing of implementing the open policies to FDI had a strong impact on the provincial distribution of FDI inflows. Finally, the implementation of a series of policy measures in the early 1990s had very strong positive effects on attracting FDI inflows into China across all provinces.

Since the economic reform began, the economic growth rates of the east region provinces, which benefited from the regionally biased special policies, have been much faster than those of the central and west region provinces. This unbalanced economic growth between the coastal provinces and the inland less developed provinces has led to uneven economic development and an increase in income gaps between regions. The differences between the east region provinces and the central and west region provinces in the levels of economic development resulting from the time lag of the implementation of open policies cannot be reduced in the near future. All of these factors have also had a very strong and direct impact on the location factors attracting FDI inflows. As a result, with faster economic growth in the coastal provinces relative to the less developed provinces inland, it is likely that the uneven provincial distribution of FDI inflows into China will remain in the near future.

In terms of the origins of FDI in China, the most prominent feature is the overwhelming dominance of developing source countries. How did this happen and are there differences between developing source countries and developed source countries in terms of regional investment bias, pattern of investment, type of entry, market orientation, factor intensity and factor productivity? According to Dunning's "OLI" framework for FDI, the investment potential and investment patterns of enterprises are determined by the nature and extent of their possession of ownership advantages and the incentive to internalise the use of their ownership advantages. However, the creation and development of the ownership advantages of enterprises are closely related to their home countries' technological and innovative capabilities and overall economic development levels. In other words, differences in their technological and innovative capabilities and in their levels of economic development will lead to differences in the ownership advantages of the enterprises of different countries. Enterprises from developed source countries with high technological and innovative capabilities and a high overall economic development level will possess not only more ownership advantages in general but also more ownership advantages in the forms of hi-technology, product differentiation, managerial and entrepreneurial skills, and knowledge-based intangible assets in particular. In contrast, developing source countries have relatively lower technological and innovative capabilities and are at the mid-level of economic development, so the ownership advantages possessed by their enterprises not only are relatively less in general but also are more concentrated in the forms of labour-intensive production technology, standardised manufactured products and well established export market networks.

The incentives for enterprises to internalise the use of their ownership advantages through FDI depend on the nature of the ownership advantages and the degree of imperfections in the markets for the ownership advantages they possess. Therefore, the more technology-intensive and the higher the imperfections of the markets, the stronger incentives for the enterprises to internalise the use of their ownership advantages through FDI and control operations. Since enterprises from the developed source countries possess more technology-intensive and knowledge-based intangible assets of ownership advantages than enterprises from the developing source countries, enterprises from developed source countries have greater incentives to internalise the use of their ownership advantages and a stronger tendency to secure control over the business than enterprises from the developing source countries.

Are these propositions valid for the major investors from the developing and developed source countries in the case of investment in China? The differences in the investment behaviour between the developed and developing source countries' investors were examined in Chapter 5. The study provided two main findings.

First, FDI in China by country of origin, on the one hand, shows significant diversification in terms of the total number of source countries, and on the other hand, presents great concentration in terms of the magnitudes invested by them. In general, developing source countries overwhelmingly dominated FDI in China. Hong Kong as a single investor and the NIEs as a group have been the largest investors among all the source countries and source country groups. Among the developed source countries, the United States and Japan are the most important investors in China. They have both substantially increased their investments in China during 1993 to 1995. The other developed countries have invested very small amounts in China, both in terms of their shares in China's total FDI inflows and in terms of their total investments in the world.

Second, several differences in investment behaviour between the two major groups of investors, developing country investors and developed country investors, have been identified.

- The developing country investors tend to invest in more labour-intensive industries while the developed country investors tend to invest in more capital and technology intensive industries. This is clearly revealed by the relative sector investment intensity index, which measures the relative importance of an industry as a host for a source country's investments as compared to all manufacturing industries. For the developing country investors, only the labour intensive sector index is above 100 percent, indicating that developing countries' investments in labour-intensive sector are more than the amount of their share of investments in China's all manufacturing sectors. In other words, the labour-intensive sector is more important as a host sector for developing countries' investments as compared to the capital-intensive and technology-intensive sectors in China's manufacturing. For the developed country investors the indexes are above 100 percent both for the capital intensive sector and the technology intensive sector, indicating that the capital-intensive and technology-intensive sectors are more important as host sectors for developed countries' investments as compared to the labour-intensive sector.

- The developed country investors tend to have stronger incentives to secure control over the business than the developing country investors. This is reflected by their higher propensity to hold the majority shares in the joint ventures and to set up wholly foreign-owned enterprises.

- Developing countries' affiliates have a higher export propensity than the developed countries' affiliates. This is consistent with the investment patterns of the source countries, and this also implies that the investments from the developing countries are mainly export-oriented while the developed countries have invested in China mainly for the purpose of targeting the Chinese domestic market.

- The developing country investors in China tend to adopt more labour-intensive technologies than the developed country investors. As revealed by the factor intensities and the factor productivity, the enterprises funded by the developing country investors not only have lower capital to labour ratios but also are much smaller than the enterprises funded by the developed country investors. Also the enterprises funded by the developing country investors have lower productivity both in capital productivity and particularly labour productivity than the enterprises funded by the developed country investors.

However, two questions still need to be considered. First why do investments from developing source countries dominate FDI in China and second what factors explain the variations of investment intensity between China and its source countries? Chapter 6 provided answers to these questions by analysing the difference of investment intensity of the source countries, and testing the determinants affecting the variations of the investment intensity indexes of the source countries in China.

The investment intensity index measures the relative importance of China as a host for the source countries' investments as compared to the rest of the world as hosts for these countries' investment. The investment intensity indexes of source countries in China vary enormously. However, comparing the two major source country groups of developing source countries and developed source countries, the study shows that the investment intensity indexes of the developing source countries are not only all above 100 percent but also much higher than those of the developed source countries. This reveals that China is more important as a host for the developing source countries' investments than for the developed source countries' investments.

What factors explain the differences of the intensities of investments in China of the major investors? The regression analyses provided strong support for our two hypotheses. In general, the economic and technological development gaps and the levels of economic proximity are important factors affecting FDI flows between countries. Two implications can be drawn from the regression results. First, since the economic proximity is positively related to the investment intensity between countries, the high economic proximity between China and the East and South-East Asian countries, particularly Hong Kong and Taiwan, implies that China will remain a very important host country for the investments from these countries. Second, with the sustained and fast economic growth in China, combined with the huge inflows of FDI and technology into its domestic economy, the economic and technological development gaps between China and the developed countries will tend to be reduced. As a result, China will become a more important host country for FDI from developed source countries in the near future.

The Chinese case has offered valuable evidence on the differences among foreign investors. The distinctive features of developing country investments as compared to the developed country investments are confirmed.

Since the 1980s the manufacturing sector has been the largest recipient of FDI inflows among of China's economic sectors. The industrial distribution of FDI in China's manufacturing is characterised by both large inter-industry variations and high concentration in labour-intensive industries. The analysis of Chapter 7 revealed that among the twenty-nine industries, the five largest FDI recipients accounted for 40 percent and the labour-intensive industries accounted for 50 percent of the total manufacturing FDI in China respectively.

Two distinguishing features of the industrial structure of foreign-funded enterprises (FFEs) comparing with domestic enterprises (DOEs) have been revealed. First, in terms of industry factor intensities, FFEs are more biased towards labour-intensive industries than DOEs. Second, within the capital-intensive industries, FFEs are relatively more concentrated in the newly developing and fast growing industries, while DOEs are more concentrated in the conventional basic capital-intensive and large scale industries.

In terms of the shares of FFEs in China's manufacturing industries, two characteristics are apparent. First, the shares of FFEs tend to be higher in those industries which are more labour-intensive. This is not only apparent across all industries, but also apparent within a related industry group, and the textiles related industry group offered a notable example. Second, the shares of FFEs tend to be higher in the fast growing export-oriented industries and among the nineteen industries whose shares are above the average, there are fourteen industries in which the export shares of FFEs were over 50 percent of the industry's total exports in 1995.

What explains the industrial investment pattern of foreign investors in China's manufacturing sector? To answer this question an empirical test with a number of hypotheses is conducted. In general, we found that the levels of inward FDI stocks of industries are positively related to China's abundant labour resource endowments, market size (both domestic and export markets) and growth rate of industries. However, the protection jumping hypothesis was rejected as having no significant impact on the industrial distribution of FDI in China's manufacturing.

The most prominent feature of FDI in China's manufacturing revealed by several aspects of the analysis and throughout Chapter 7 is its concentration in labour-intensive and fast growing export-oriented industries. This raises the question what is the relationship between FDI and trade or, specifically, what are the impacts of FDI on China's international trade? On the one hand, FDI can accelerate China's domestic capital formation, transfer technology and bring in modern enterprise managerial skills. Therefore, we would expect that China's trade pattern would change because of the change in resource endowments as predicted by the standard H-O international trade model. In this case FDI and trade flows are substitutes for each other. On the other hand, because China's comparative advantage lies in the labour intensive manufacturing sector, the lion's share of FDI inflows into China has been in the labour intensive manufacturing sector, which tends to boost China's labour intensive manufacturing exports and promote intra-firm trade. In this case FDI and trade flows are complementary to each other.

Chapter 8 investigated the relationship between FDI and trade and the impact of FDI on trade using the evidence from China. In general we found a positive relationship between FDI and trade and a positive impact of FDI on trade, both in China's trade by provinces and in China's bilateral trade. More precisely the study has provided the following findings.

In the last 16 years China's international trade has experienced an unprecedented growth. However, China's fast international trade growth has a number of causes. The market oriented economic reforms and trade liberalisation, the remarkable development of TVEs, and the massive inflows of FDI during the last 16 years have all contributed to the success of China's international trade growth. FDI's contribution to China's trade growth has been very impressive. From 1980 to 1995, the share of FDI-related trade in China's total trade increased from 0.11 percent to 39.1 percent with an annual growth rate of 48 percent. As a result, FDI has become one of the most important contributors to China's international trade growth, and its importance is increasing over time.

Because of the unbalanced distribution of FDI among China's provinces, the contribution of FDI to trade by provinces is also different. However, the interesting finding is that provinces with higher trade shares in China's total trade are also the provinces with higher trade shares of FFEs in their provincial trade. In other words, provinces which have higher trade shares of FFEs in their provincial trade are the leading trade provinces in China. This finding revealed a very important positive relationship between FDI and trade in the case of China.

To move beyond the correlations between FDI and trade, the empirical regression analyses revealed that FDI has positive and statistically significant impacts both on China's provincial total trade flows and on China's bilateral trade flows. The relationship between FDI and trade is mainly complementary in the case of China. This important finding is also consistent with our findings in the previous chapters that FDI in China is mainly concentrated in labour-intensive and export-oriented manufacturing activities.

These results may not be applied to other countries. However, if we take into account the source country and host country specific characteristics, we also can generalise some basic implications from the above findings. First, in terms of the source countries and their investment patterns, as discussed in the previous chapters, the major source countries investing in China are the developing countries, particularly the NIEs. As determined by their own ownership advantages, their investments are mainly concentrated in labour-intensive activities and tend to be more export-oriented. Second, in terms of host country characteristics, China is well endowed with abundant labour and has a comparative advantage in labour-intensive activities. Therefore, the labour-intensive and export-oriented investment patterns of the developing source countries are well matched with China's resource endowments and comparative advantages. Ultimately, under these conditions FDI has a positive impact on trade. Therefore, we may generalise that FDI is more likely to have a positive impact on trade when developing source countries invest in a country which is well endowed with abundant labour and has a comparative advantage in labour-intensive activities.

In general, this study has revealed the general features of FDI in China, which are characterised by fast growth and huge volume of inflows, a very uneven distribution among provinces, an overwhelming dominance of developing source countries, concentration in labour-intensive industries, and a positive impact on trade.

9.2 Policy Implications

Referring to the results of this study, the following policy implications are relevant to China's further attraction and utilisation of FDI.

First, though China has achieved substantial progress in its FDI policy reform within a relatively short period, comparing China's current FDI policy to APEC's investment-related principles, China's current FDI policy can be further improved, particularly in respect of transparency and national treatment. With respect to the principle of transparency, China still maintains a very complex application process for FDI approval, which can be simplified and made more transparent through further policy reform.

For the purpose of attracting FDI the Chinese government granted various tax incentives to FDI firms. This violates the national treatment principle. However, the tax incentive policies have caused two problems. First, since under the tax incentive policies foreign investors have been treated more favourably than domestic investors, this has caused the problem of 'round-tripping', which involves the circular flow of Chinese capital out of China and the subsequent 're-investment' of this 'foreign' capital in China for the purpose of benefiting from fiscal entitlements accorded to foreign investors. Second, as discussed in Chapter 2, the tax incentive policies have different impacts on different types of FDI and on different groups of foreign investors. In general, the tax incentives in the forms of tax holidays have a stronger impact on cheap labour-seeking and export-oriented FDI than on market-seeking and strategic-seeking FDI, and have a greater impact on investors from developing countries than on investors from developed countries, particularly on the investors from the United States. As a result, the tax incentive policies have had different reactions from different foreign investors. They have been one of the reasons why China has attracted a disproportionately large share of FDI with low and middle level technology from developing countries and a small share of capital and technology intensive FDI from developed countries.

At the same time, to protect some industries and domestic firms the Chinese government has introduced regulations to prohibit or restrict FDI participation in some sectors and industries. Therefore, foreign investors are not treated equally in accessing and doing business in certain areas in China. The application of national treatment will not only level the playing field between foreign and domestic firms but also provide equal incentives and opportunities for various types of FDI and different groups of foreign investors, as well as provide equal access to China's domestic market and more business opportunities for foreign investors.

Since 1994 China has decided to apply national treatment to FDI firms not only in order to eliminate preferences for foreign investors that have distorted markets and have led to a bias against domestic firms but also to provide more business opportunities for foreign investors. However, to fulfil the requirements of the WTO on international investments China still needs to put great effort into liberalising its FDI and trade regime.

Second, the uneven regional distribution of FDI concentrated in the coastal areas has greatly contributed to the economic growth of coastal provinces, however, we should point out that this kind of regional distribution of FDI is not compatible with the regional distribution of China's natural resource endowments. China's natural resources are mainly endowed in the inland areas, particularly in the west region, and also a large number of China's heavy industrial projects established since 1950s are located in the inland provinces. Therefore, if China wanted to help the economic development of inland provinces, particularly the western less developed areas, it could (1) shift the preferential policies for FDI from regional priority to industrial priority, namely to encourage those FDI projects engaged in export-oriented, technologically advanced, transportation, communication, energy and raw materials industries; (2) adjust its regional development strategy by offering special economic and industrial development policies to the central and western regions; and (3) encourage coastal areas to transfer managerial skills and technology accumulated and obtained from attracting and utilising FDI to the inland regions in order to benefit fully from FDI nationwide.

The third result refers to the current situation of source country composition of FDI in China. Advantages and disadvantages are apparent. There are two main advantages in terms of the overwhelming dominance of FDI from developing source countries, particularly from the overseas Chinese, and the relatively large share of FDI from the United States and Japan. The first advantage is that China can continuously attract FDI from the overseas Chinese based on their support for their home country, and the second one is that China can get relatively high technology embodied in the FDI from the United States and Japan.

However, there are also disadvantages. First, since the overseas Chinese investments are mainly in labour-intensive activities and relatively low in technology, as well as small in scale, their role in upgrading China's overall technological level and industrial structure is limited and much less than that of the investments from developed source countries. This may constrain China's participation in the international division of production when other countries (particularly those countries in the Asian Pacific region) attract relatively more FDI than that of China from developed source countries. This may also increase the risks and vulnerability of China in international competition as its specialisation becomes more narrow and is more based on the cost of labour. Second, although the economy of the Asian Pacific region is the most dynamic one in the world, the present world economy is multipolar. The West European Countries (WECs) are still a very important source of capital and high technology, as well as technical and managerial expertise. However, China has attracted only a very small amount of FDI from this region. This situation is not compatible with China's global open door policy aiming at introducing technology and expertise from all around the world. Therefore, in order to attract more FDI from the developed source countries, especially from WECs, in addition to increasing economic and cultural exchanges to improve mutual understanding between China and WECs, China could put effort not only into creating various economic laws and improving its legal system but also into enforcing these laws, particularly the protection of intellectual property rights.

Fourth, for the past 16 years China's utilisation of FDI to boost its international trade, particularly to promote its exports, has been very successful. However, there are a number of external and internal factors which may have an important impact on the future growth of China's international trade. Externally, first, the growth rate of the world economy, especially that of developed countries, is expected to remain lower than during the 1980s, at least to the end of this century. According to the *World Development Report*, world GDP growth rate was 3.1 percent in the 1980s, however, it was only 2 percent in the period of 1990 to 1995, dropping 35 percent (World Bank, 1997, p. 235). Second, the recent financial crisis in East and South-East Asian economies will further slow down the economic growth in the region, which will have a negative impact on the world economy. Third, more regional trading blocks are taking shape (Hughes, 1997), which might discriminate against non-block countries' trading efforts, and if so, more protectionism pressure is expected. All of these will have a negative impact on China's effort to further boost its exports. Internally, to meet the obligations of WTO, China has to reduce and eliminate tariffs and non-tariff barriers for a broad range of products, which will certainly increase the level of imports. In addition, with its rapid economic growth and market expansion, China will gain from increased imports of technology, equipment and materials, as well as consumer goods to meet the increasing demands of domestic construction and consumption. These potential limits and pressures on its future growth of international trade highlight the value to China of constructing corresponding policies for further utilisation of FDI, in addition to the careful formulation of its overall macroeconomic policies to cope with these issues.

Finally, as the conclusion of this thesis, we cannot escape the question of the prospects for FDI inflows into China? From the supply side of world FDI flows, the world is experiencing the third FDI boom that began in 1995. In 1996 world total FDI flows set a new record with inflows of US$349 billion and outflows of US$347 billion, an increase of 10 percent and 2 percent over 1995 respectively (United Nations, 1997, p. 3). A survey undertaken in 1996 (United Nations, 1997, p. 36) shows that world FDI flows will continue to rise over the next five years, with outflows from the four main source regions (European Union, the United States, Japan and the newly industrialising Asian economies) increasing rapidly. Half of the respondents expect to increase FDI by over 20 percent up to the year 2001 (United Nations, 1997, p. 38). But the recent Asian financial crisis produces some uncertainty in this expectation. The financial crisis in Japan, South Korea and most South-East Asian economies may reduce the investments of these economies abroad. This to a certain extent may slow down the growth rate of world FDI outflows in the coming years. As a result, we expect that the world FDI outflows will continue to increase but at a slower pace. In general, however, the perspective of world FDI outflows is still promising.

Given the world total supply of outward FDI, what is China's attractiveness to FDI? According to the regression analysis in Chapter 3, China received 29 percent, 82 percent and 57 percent more FDI inflows in 1992, 1993 and 1994 respectively than the model's prediction based on its location specific characteristics. However, we should recognise that this is a short run phenomenon induced by the fast improving investment environment of China compared with the previous period and the increasing confidence of foreign investors to invest in China. This situation is very difficult to sustain in the long run and, as a result, the growth rate of FDI inflows into China would gradually slow down to its expected level. In fact, after 1993 the growth rate of FDI inflows into China has actually slowed down from the peak of 147 percent in 1993 to 23 percent in 1994, 11 percent in 1995, 13 percent in 1996 and just over 5 percent in the first half of 1997 over the corresponding period in 1996 (SWB, August 15, 1997). Despite the slower growth of FDI inflows into China, we argue that China's attractiveness to foreign investors remains high. Drawing upon the results of the regression analysis reported in this thesis, we can make the following observations. First, China is one of the fastest growing economies in the world, with an average annual GDP growth of over 10 percent from 1991 to 1996, and this trend is expected to continue (United Nations, 1996, p. 56). Second, the liberalisation of FDI policies is accelerating, for example more industries, such as air transport, general aviation, retail trade, foreign trade, banking, insurance, accounting, auditing, legal services, and the mining and smelting of precious metals, have been or are gradually being opened to FDI. Third, there is a significant potential for FDI participation in infrastructure development in China, a number of BOT (build, operate, and transfer) schemes, a common international practice to contract-build basic infrastructure projects, such as energy and transportation facilities, which would help solve the current bottleneck in China's heated economic growth, have already been concluded. Fourth, foreign investors are encouraged to participate in the transformation of and to acquire existing state-owned manufacturing enterprises. Fifth, according to the Chinese government, the Chinese currency will soon become fully convertible. This will make it easier for foreign investors to conduct their business operations in China. Finally, because China has been gradually improving its legal system, investments from developed countries are increasing, particularly those from the United States and Japan, as well as from some of the Western European countries, like the United Kingdom, France and Germany. Therefore, there are reasons to believe that, while the growth of FDI inflows into China may slow down, China will remain one of the top FDI destinations in the world, and FDI will continue to play a significant role in China's economy.

Appendix 1

Since the data under study is a cross-section regression, therefore, we mainly apply the diagnostic tests of heteroscedasticity, functional form, and normality in our estimated model, and the models to be tested are Model 89 and Model 93 in Table 8.11.

Heteroscedasticity

First, we test the heteroscedasticity of Model 89 and Model 93. The heteroscedasticity test results are reported in Appendix Table 1 and Appendix Table 2.

The null hypothesis of the above tests is no heteroscedasticity. All the test statistics reported in Appendix Table 1 and Appendix Table 2 are smaller than the 95 percent critical values, the null hypothesis of no heteroscedasticity cannot be rejected at 0.05 level of significance. Therefore, there is no obvious evidence of heteroscedasticity in the model. Since, in the absence of heteroscedasticity, the OLS and White t-statistics are anticipated to be of similar magnitude, we still use the White t-statistics for the statistical inference on the coefficients of our regression, even though we have tested that there is no obvious evidence of heteroscedasticity in our model.

Appendix Table 1 Test results for heteroscedasticity of Model 89

Tests	Test Statistics	95% Critical Value
B-P-G	X^2 (4) = 5.727	9.48773
ARCH	X^2 (1) = 0.006	3.84146
Harvey	X^2 (4) = 2.265	9.48773
Glejser	X^2 (4) = 4.524	9.48773

Appendix Table 2 Test results for heteroscedasticity of Model 93

Tests	Test Statistics	95% Critical Value
B-P-G	X^2 (4) = 3.140	9.48773
ARCH	X^2 (1) = 0.074	3.84146
Harvey	X^2 (4) = 1.332	9.48773
Glejser	X^2 (4) = 1.970	9.48773

Functional Form

We use Ramsey's (1969) RESET test for the functional form of Model 89 and Model 93. The RESET test has power against many forms of functional form misspecification. Appendix Table 3 and Appendix Table 4 report the functional form test results.

The null hypothesis of Ramsey RESET test is no functional form misspecification. The test statistics reported in Appendix Table 3 and Appendix Table 4 are all smaller than the 95 percent critical values, therefore the null hypothesis of no functional form misspecification cannot be rejected at the 0.05 level of significance.

Consequently, we conclude that there is no functional form misspecification in our estimated model.

Appendix Table 3 Test results for functional form of Model 89

Ramsey RESET Specification Tests Using Powers of $\hat{Y}$	Test Statistics	95% Critical Value
RESET (2)	F(1,23) = 0.91287	4.28
RESET (3)	F(2,22) = 0.76463	3.44
RESET (4)	F(3,21) = 0.76870	3.07

Appendix Table 4 Test results for functional form of Model 93

Ramsey RESET Specification Tests Using Powers of $\hat{Y}$	Test Statistics	95% Critical Value
RESET (2)	F(1,23) = 1.0893	4.28
RESET (3)	F(2,22) = 1.0822	3.44
RESET (4)	F(3,21) = 0.8831	3.07

Normality

Since in this study our sample size is relatively small with 29 observations, so the normality test is very important. We use both the Goodness-of-fit test for normality of residuals and the Jarque-Bera asymptotic LM normality test. The test results of Model 89 and Model 93 are reported in Appendix Table 5 and Appendix Table 6.

The null hypothesis of the two normality tests is error normally distributed. Since the test statistics reported in Appendix Table 5 and Appendix Table 6 are all smaller than the 95 percent critical value the null hypothesis of error normally distributed cannot be rejected at the 0.05 level of significance.

Appendix Table 5 Test results for normality of Model 89

Normality Tests	Test Statistics	95% Critical Value
Goodness-of-fit test	X^2 (3) = 7.0171	7.81473
Jarque-Bera test	X^2 (2) = 0.6405	5.99146

Appendix Table 6 Test results for normality of Model 93

Normality Tests	Test Statistics	95% Critical Value
Goodness-of-fit test	X^2 (3) = 5.0926	7.81473
Jarque-Bera test	X^2 (2) = 1.4141	5.99146

In general the log-linear form equation of the provincial trade flows performs quite well against a number of diagnostic tests. Therefore we accept this model as an adequate representation of the provincial trade flows with the rest of the world.

Appendix 2

Also, since the data under study is a cross-section regression, therefore, we mainly apply the diagnostic tests of heteroscedasticity, functional form and normality in our estimated model, and the models to be tested are Model 91 and Model 93 in Table 8.13.

Heteroscedasticity

We have already used the heteroscedasticity-consistent covariance matrix correction proposed by White (1980) for the unknown form of heteroscedasticity in our regression. However, a test for heteroscedasticity is still useful for us to know whether heteroscedasticity is absent or not in our model. Appendix Table 7 and Appendix Table 8 report the heteroscedasticity test results of Model 91 and Model 93 obtained by using SHAZAM with HET option.

The heteroscedasticity test results of Model 91 are mixed. The B-P-G test, the ARCH test, and the Harvey test accept the null hypothesis of no heteroscedasticity. However, the Glejser test rejects the null hypothesis at 0.05 percent significant level and reveals the presence of heteroscedasticity. Therefore, particular caution is required for the possible presence of heteroscedasticity in Model 91. To solve the possible problem, and also since White's heteroscedastic consistent t-statistics have the advantages of making it possible to perform statistical inference on individual coefficients without knowing the form of the heteroscedasticity, we used White's (1980) heteroscedasticity-consistent covariance matrix correction in our regression. The adjusted White's heteroskedasticity-consistent t-statistics of the coefficients of variables are reported in Table 8.11.

Appendix Table 7 Test results for heteroscedasticity of Model 91

Tests	Test Statistics	95% Critical Value
B-P-G	X^2 (3) = 6.871	7.81473
ARCH	X^2 (1) = 1.186	3.84146
Harvey	X^2 (3) = 3.988	7.81473
Glejser	X^2 (3) = 8.142**	7.81473

Note: ** statistically significant at 0.05 level.

Appendix Table 8 Test results for heteroscedasticity of Model 93

Tests	Test Statistics	95% Critical Value
B-P-G	X^2 (3) = 5.459	7.81473
ARCH	X^2 (1) = 0.261	3.84146
Harvey	X^2 (3) = 4.217	7.81473
Glejser	X^2 (3) = 7.325	7.81473

The heteroscedasticity test statistics of Model 93 reported in Appendix Table 8 are smaller than the 95 percent critical values and the null hypothesis of no heteroscedasticity cannot be rejected at 0.05 level of significance. Therefore there is no obvious evidence of heteroscedasticity in model 93. However, since in the absence of heteroscedasticity, the OLS and White t-statistics are anticipated to be of similar magnitude we therefore still use the White t-statistics for the statistical inference on the coefficients of our regression, even though we have shown that there is no obvious evidence of heteroscedasticity in Model 93.

Functional Form

We use Ramsey's (1969) RESET test for the functional form of Model 91 and Model 93. The RESET test has power against many forms of functional form misspecification. Appendix Table 9 and Appendix Table 10 report the functional form test results obtained by using SHAZAM with RESET option.

The null hypothesis of Ramsey RESET test is no functional form misspecification. The test statistics reported in Appendix Table 9 and Appendix Table 10 are all smaller than the 95 percent critical values, therefore the null hypothesis of no functional form misspecification cannot be rejected at the 0.05 level of significance. Consequently, we conclude that there is no functional form misspecification in Model 91 and Model 93.

Appendix Table 9 Test results for functional form of Model 91

Ramsey RESET Specification Tests Using Powers of $\hat{Y}$	Test Statistics	95% Critical Value
RESET (2)	F(1,96) = 0.31069	3.96
RESET (3)	F(2,95) = 0.70374	3.11
RESET (4)	F(3,94) = 0.59345	2.71

Appendix Table 10 Test results for functional form of Model 93

Ramsey RESET Specification Tests Using Powers of $\hat{Y}$	Test Statistics	95% Critical Value
RESET (2)	F(1,96) = 0.00252	3.96
RESET (3)	F(2,95) = 0.01683	3.11
RESET (4)	F(3,94) = 0.01199	2.71

Normality

We use both the Goodness-of-fit test for normality of residuals and the Jarque-Bera asymptotic LM normality test for Model 91 and Model 93. The test results are reported in Appendix Table 11 and Appendix Table 12.

The null hypothesis of the two normality tests is error normally distributed. Since the test statistics reported in Table 11 and Table 12 are all smaller than the 95 percent critical value the null hypothesis of error normally distributed cannot be rejected at the 0.05 level of significance.

Appendix Table 11 Test results for normality of Model 91

Normality Tests	Test Statistics	95% Critical Value
Goodness-of-fit test	X^2 (4) = 5.8728	9.48773
Jarque-Bera test	X^2 (2) = 0.4117	5.99146

Appendix Table 12 Test results for normality of Model 93

Normality Tests	Test Statistics	95% Critical Value
Goodness-of-fit test	X^2 (4) = 7.1634	9.48773
Jarque-Bera test	X^2 (2) = 1.1171	5.99146

In general, the log-linear form equation of China's bilateral trade flows with each of its trade partners performs quite well against a number of diagnostic tests. Therefore, we accept this model as an adequate representation of China's bilateral trade flows with each of its trade partners.

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