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The Role of FDI in Transitional Economies – The Case of China –

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1. INTRODUCTION

FDI's potential to become an engine of growth in developing countries is being increasingly recognized. In academic circles, FDI is being integrated into theories of international trade, economic growth, and others, while in policy circles we can clearly see a shift in more liberal policies toward FDI and the activities of multinational companies (UN 1992: 106-107). For instance, "Of 82 policy changes made in relation to foreign direct investment by 35 countries in 1991, 80 were in the direction of greater liberalization" (UN 1992:3). It is becoming more important to analyze the impacts of FDI on the economies of developing countries from both the theoretical and empirical points of view.

China is one of the developing countries which began giving serious consideration to the role of FDI in the process of economic transition and development. When the economic reform process was initiated in 1978, doctrinaire rejection of foreign capital was abandoned, and FDI was permitted by the July 1979 Law on Joint Ventures. China expected FDI to be a source of technology transfer and to help promote exports. After 1986, Chinese officials expressed greater wishes to promote FDI rather than to simply permit it (Pomfret 1991:2). FDI has become an essential part of economic reforms and development in China. The purpose of this chap-

ter is to evaluate the role of FDI in transitional economies such as China

Chapter 6 considers, first of all, why China's economic reforms have been successful. Second, after briefly discussing the characteristics of the trends in FDI inflow to China, this chapter discusses in detail the role that FDI has played in China's economic reforms, and analyzes that role both from analytical and empirical points of view. Finally, the chapter discusses the future prospects for FDI in China, and the implications for other reforming economies.

2. WHY HAVE CHINA'S ECONOMIC REFORMS BEEN SUCCESSFUL?

Three hypotheses have been frequently proposed to explain the relative success of China's economic reforms.¹ First is the superiority of gradual and experimental reforms over those of shock therapy. "Some economists argue that China's success poses a challenge to the conventional wisdom about stabilization, liberalization, and privatization as being necessary keys to successful reforms" (Lin, Cai and Li 1994:2). Second is China's unique initial conditions, such as the existence of a large agricultural labor force, and a relatively decentralized economic system. Third is the superiority of reforms that attempt to create a stream of new resources by improving material incentives and allowing the newly created stream of resources to be allocated to more efficient sectors instead of attempting to reallocate the existing stock of resources from the low-productivity to the high-productivity sectors.² In the former approach, the existing stock of resources is not touched upon, at least during the early stage of development.

This chapter argues that the third explanation seems to be most appropriate for explaining the success of China's economic reforms, as Lin, Cai and Li (1994) do, although the above three explanations may not necessarily be mutually exclusive.

The reasons are as follows. First of all, the superiority of gradualism over shock therapy may not be so definite, as the relative success of Vietnamese economic reforms is rather characterized by the latter approach.

Second, "If China's success is mainly the result of China's unique initial economic conditions, China's success does not have a general implication for other economies, where initial conditions may be different" (Lin, Cai and Li 1994:21). In other words, the implication of the second hypothesis is that China's experience cannot be duplicated in other reforming countries due to their differing initial conditions. However, China's reform process seems to include many aspects that may be relevant to other reforming economies.

Table 1 Growth Rates and Shares of Various Types of Firms

(a) Average annual growth rates	1981-85	1986-90	1991-94	
State	8.1	7.3	8.3	
Collective	19.8	17.5	30.6	
Individual	193.4	42.1	50.2	
Other	37.6	48.3	67.0	
Total	12.0	13.2	24.0	
(b) Shares	1980	1985	1990	1994
State	76.0	64.9	54.6	34.1
Collective	23.5	32.1	35.6	40.9
Individual	0.0	1.8	5.4	11.5
Other	0.5	1.2	4.4	13.6
Total	100.0	100.0	100.0	100.0

Source: 1995 *Statistical Yearbook of China*.

Third, attempts to shift the existing stock of resources from one place to another is inevitably accompanied by high transitional costs that tend to result in the sharp contraction in production, as seen in Eastern Europe and the former Soviet Union. One of the most striking and important elements of the Chinese reform process seems to be the rapid and sustained growth of the non-state sector under control of the market and competitive principles, and without disrupting the production of state sectors. This was possible precisely because the Chinese government avoided attempts to reallocate existing resources from low- to high-productivity sectors. Rather, it generated a new stream of resources by means of material incentives and saw that those resources were allocated to the sectors that are more consistent with the comparative advantages of the economy, while at the same time leaving the existing stock of resources largely untouched (Lin, Cai and Li 1994:3). In this way, China was able to enjoy *high* and *continuous* growth during the reform process.

As Table 1 clearly shows, China is characterized by the rapid expansion of the non-state sector, accompanied by moderate increase in the state sectors. This experience contrasts sharply with the slow growth of the non-state sectors, and the sharp disruption of production in the state sectors, occurring in Eastern Europe and the former Soviet Union. The experience of China seems to indicate that the manner in which economic reforms are implemented is more important than the pace or scope of the reforms. Costs as well as benefits of economic reforms have to be taken into consideration in their implementation.

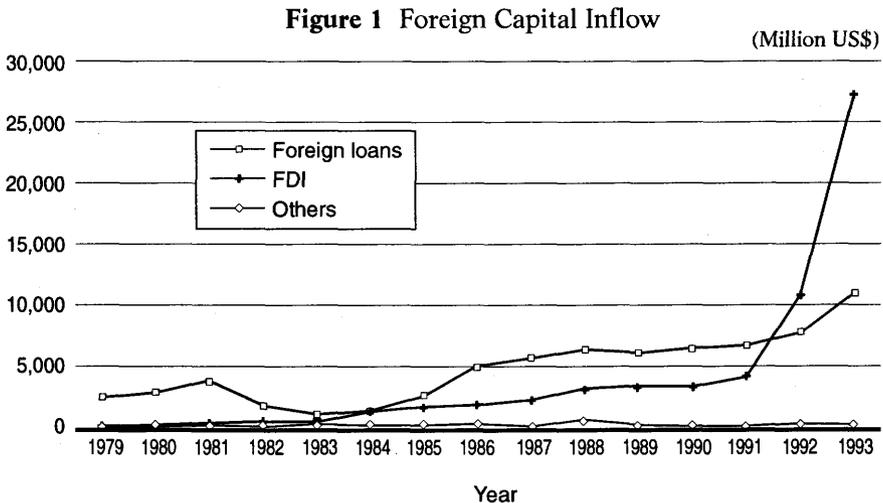
3. ROLES OF FDI IN CHINA'S TRANSITION PROCESS

As discussed above, there are two essential elements in China's economic reforms or transition process. First is the achievement of high and continuous growth through the speedy expansion of the non-state sector. Second is the avoidance of state-sector disruption. In China, FDI has indeed contributed to the first element: it has contributed to the outstanding performance of the non-state sector. Section 3, first summarizes the characteristics of FDI inflows to China. Then it moves on to discuss the importance of FDI in the expansion of the non-state sector, which is governed by market principles, and in achieving China's remarkable growth.

3.1 The Increasing Flow of FDI to China

As Figure 1 shows, the growth of FDI did not really take off until after the mid-1980s, when a variety of measures were adopted to improve the investment climate in China (Chen, Chang and Zhang 1995:693). Until the mid-1980s the flow of FDI to China remained unchanged. After the steady increase of FDI in the latter half of the 1980s, FDI growth accelerated in the 1990s and became the dominant form of foreign capital inflow to China.

The breakdown of FDI to China by form of engagement of foreign companies (Figure 2) indicates that FDI in the form of joint ventures is the most common, and is still accelerating. On the other hand, it was



Source: Chen, Chang and Zhang (1995).

only recently that FDI in the form of wholly foreign-owned companies became a major FDI component. Only in 1992 did it increase rapidly and become the second-largest. As Blomström (1991) pointed out, "The more modern and complex the technology, the less willing the multinationals are to accept any arrangements other than wholly owned subsidiaries, in order to avoid leakages."

Another characteristic of FDI in China is that it comes mainly from Hong Kong and Taiwan (Table 2). FDI from these two countries still accounts for about three-fourths of total FDI both on approval and real-

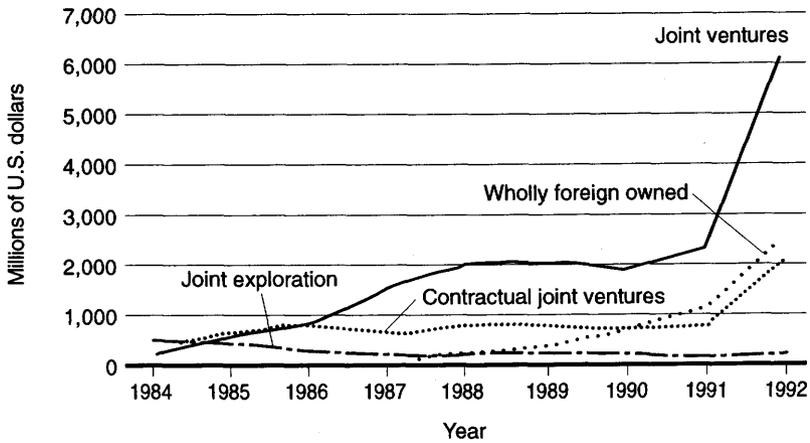
Table 2 FDI in China by Geographical Source

Country	Approved amount (Million US\$)			Utilized amount (Million US\$)		
	1990	1991	1992	1990	1991	1992
Hong Kong	3,833	7,215	40,044	1,913	2,487	7,507
Taiwan	890	1,389	5,543	222	466	1,051
Korea	—	—	417	—	—	119
Japan	457	812	2,173	503	533	710
U.S.	358	548	3,121	456	323	511
Canada	15	31	316	8	11	58
Germany	46	558	130	64	161	89
U.K.	119	132	287	13	35	38
France	12	10	289	21	10	45
Australia	17	44	276	25	15	31
Total	6,596	11,977	58,124	3,487	4,366	11,008

Country	Approved amount (%)			Utilized amount (%)		
	1990	1991	1992	1990	1991	1992
Hong Kong	58.1	60.2	68.9	54.9	57.0	68.2
Taiwan	13.5	11.6	9.5	6.4	10.7	9.5
Korea	0.0	0.0	0.7	0.0	0.0	1.1
Japan	6.9	6.8	3.7	14.4	12.2	6.4
U.S.	5.4	4.6	5.4	13.1	7.4	4.6
Canada	0.2	0.3	0.5	0.2	0.3	0.5
Germany	0.7	4.7	0.2	1.8	3.7	0.8
U.K.	1.8	1.1	0.5	0.4	0.8	0.3
France	0.2	0.1	0.5	0.6	0.2	0.4
Australia	0.3	0.4	0.5	0.7	0.3	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note: The sum of amounts of FDI from countries listed in the Table is not equal to the total amount of FDI due to the omission of FDI from other countries.

Source: *Almanac of China's Foreign Economic Relations and Trade*.

Figure 2 FDI in China by Form of Engagement

Source: *Almanac of China's Foreign Economic Relations and Trade*, various years.

Table 3 FDI in China by Sector

Sector	1992		1979-1992	
	Amount (Million US\$)	Share (%)	Amount (Million US\$)	Share (%)
Agriculture, etc.	678	1.2	2,047	1.9
Industry	32,669	56.2	65,912	59.7
Architectural industry	1,839	3.2	2,704	2.4
Transportation, posts and telecommunications	1,543	2.7	2,116	1.9
Commerce & catering	1,444	2.5	3,302	3.0
Real estate & public service	18,080	31.1	28,545	25.8
Hygiene, sport & social welfare services	395	0.7	619	0.6
Education, art & videocast	97	0.2	300	0.3
Scientific research & technical services	62	0.1	131	0.1
Finance & insurance	8	0.0	85	0.0
Others	1,309	2.1	4,702	4.3
Total	58,124	100.0	110,462	100.0

Source: *Almanac of China's Foreign Economic Relations and Trade*.

ization bases. It is true that the amount of FDI inflow from more developed countries such as Japan, the U.S., and Germany tends to increase, but the share is still low.

The other characteristics of FDI in China is the relatively high share of FDI in the services sector (Table 3). Although the amount of FDI flowing into the industrial sector is the largest (56-57%), the share is still low compared with ASEAN countries (70-80%).

3.2 Contribution of FDI to the Expansion of the Non-State Sector

Section 2 explained the important contribution of the non-state sector to the industrial development of China. Owing to the rapid growth of the non-state sector, the share of the state sector in total industrial gross output had declined to as low as 34.1% by 1994 (see Table 1). Considering that the state sector's share was around 76% in 1980, the expansion of the non-state sector during the past decade is impressive.

To begin with, to what extent has FDI contributed to the rapid growth of the non-state sector? Due to limited data availability, a precise assessment is not possible. However, industrial statistics for the year 1993 by type of ownership makes a rough assessment possible.³ Table 4 shows the shares of foreign industrial enterprises in terms of value added, the number of employees, and the value of the non-state sector's fixed assets.

If the classification of foreign enterprises includes the contribution of industrial enterprises in which overseas Chinese from Hong Kong, Macao, and Taiwan have invested, then their contribution to the growth of the non-state sector cannot be overlooked. First of all, more than one-fourth of total industrial capital stock is owned by foreign enterprises. Second, although the contribution of FDI to employment may not be so impressive, one-fifth of total value added in the non-state industrial sector is generated by foreigners and overseas Chinese. It is true that the

Table 4 Share of Foreign Industrial Enterprises in Non-State Sectors, 1993
(%)

	Value added	Employees	Fixed assets
(a)	10.30	3.58	13.34
(b)	9.13	5.00	13.02

Note: (a) Represents foreign-owned industrial enterprises.

(b) Represents industrial enterprises invested in by overseas Chinese from Hong Kong, Macao, Taiwan and others.

Source: *Chinese Industrial Statistical Yearbook 1994*.

proportion of foreign enterprises is moderate compared with that of township and village enterprises (TVEs), but one cannot ignore the contribution of the former category of enterprises.

3.3 FDI and the Growth Process of China

How, then, did FDI contribute to the growth process of China as a whole through expansion of the non-state sector? While the context for growth is undoubtedly changing, the basic factors that drive economic growth seem to remain the same: a country's ability to save and invest in productive activities; to develop, acquire, or utilize technology effectively, to raise the productivity of its human capital, and to engage in international trade (UN 1992:4). The first three are the supply-side determinants of growth. In addition, the rate of growth is also influenced by international trade. Though trade is not a factor input such as capital and labor, it is thought to have a significant bearing on economic growth. On the macro-economic level, trade promoted by multinational enterprises (MNEs) helps facilitate a higher growth rate by raising the demand for goods and services and by easing supply constraints through imports. On the industry level, MNEs facilitate trade by fostering a deeper international division of labor and by utilizing each country's resource and skill endowments more efficiently, which in turn lowers production cost and promotes growth.

The contribution of MNEs to economic growth, therefore, depends highly on the extent to which MNEs facilitate the linkages between these basic factors and economic growth. Table 5 shows the share of foreign industrial enterprises in total value added, employment, and fixed assets by province. As is clear from the table, the contribution varies tremendously among regions. The foreign contribution in terms of all these aspects is enormous along the coastal area such as in Beijing, Tianjin, Shanghai, Fujian, Guangdong, and Hainan. However, this observation cannot be generalized to the other regions. The contribution of FDI to the nation as a whole seems to be moderate in terms of employment, capital formation, and the creation of added value.⁴

In contrast, the case of China indicates a very strong and positive linkage between FDI and growth through trade expansion, just as in many other Asian developing countries. The theory of optimal FDI timing states that once a company has developed a certain market share by exporting into a foreign market, it is likely to become a foreign direct investor. This theory predicts a substitution of exports by output from foreign subsidiaries, which implies that exports and FDI are substitutes rather than complements. However, recent empirical studies clearly deny the applicability of this theory (see, for instance, Ohno and Okamoto,

Table 5 Share of Foreign Industrial Enterprises by Province in 1993 (%)

	Value added		Employment		Fixed assets	
	(a)	(b)	(a)	(b)	(a)	(b)
Total	4.46	3.96	1.64	2.29	3.74	3.65
Beijing	11.89	5.44	3.70	3.11	4.91	2.12
Tianjin	10.85	4.45	2.93	2.00	6.49	4.05
Hebei	2.39	1.84	1.19	1.19	3.24	1.55
Shanxi	0.88	1.19	0.31	0.73	0.37	0.48
Inner Mongolia	1.09	0.61	0.57	0.50	0.90	0.92
Liaoning	3.11	1.62	0.96	0.69	5.61	1.57
Jilin	3.01	0.14	0.88	0.13	2.38	0.18
Heilongjiang	1.03	0.26	0.66	0.17	1.20	0.52
Shanghai	12.30	4.17	3.58	2.94	5.89	3.30
Jiangsu	5.71	3.58	2.58	2.28	5.67	3.47
Zhejiang	4.90	4.05	2.75	2.21	4.36	3.31
Auhui	0.83	0.33	0.37	0.29	0.81	0.52
Fujian	15.86	12.57	9.87	11.07	16.64	13.76
Jiangxi	1.64	0.71	0.55	0.36	1.10	1.01
Shandong	2.17	1.09	1.46	0.98	2.51	1.24
Henan	2.10	0.46	0.84	0.43	2.41	0.50
Hubei	1.66	1.63	0.41	1.07	0.95	1.65
Hunan	1.82	0.38	0.31	0.39	6.08	0.79
Guangdong	8.89	20.11	4.58	17.43	8.34	22.67
Guangxi	1.81	1.00	1.66	0.83	3.00	1.43
Hainan	8.08	9.82	1.55	4.00	3.95	7.70
Sichuan	0.28	1.88	0.07	0.45	0.26	0.83
Guizhou	1.57	0.95	0.51	0.34	0.73	0.88
Yunnan	0.33	0.17	0.34	0.23	0.49	0.28
Tibet	0.72	0.00	0.94	0.00	0.27	0.00
Shaanxi	2.57	1.19	0.37	0.25	1.06	0.54
Gansu	0.41	0.17	0.11	0.19	0.32	0.08
Qinghai	0.03	0.00	0.14	0.02	0.01	0.01
Ningxia	0.29	1.40	0.29	0.58	0.22	0.52
Xinjiang	1.05	0.28	0.68	0.54	0.48	0.71

Notes: (a) Represents foreign-owned industrial enterprises.

(Wholly foreign-owned enterprises, joint ventures, and cooperative joint ventures)

(b) Represents industrial enterprises invested in by overseas Chinese from Hong Kong, Macao, Taiwan and others.

Source: *Chinese Industrial Statistical Yearbook 1994*.

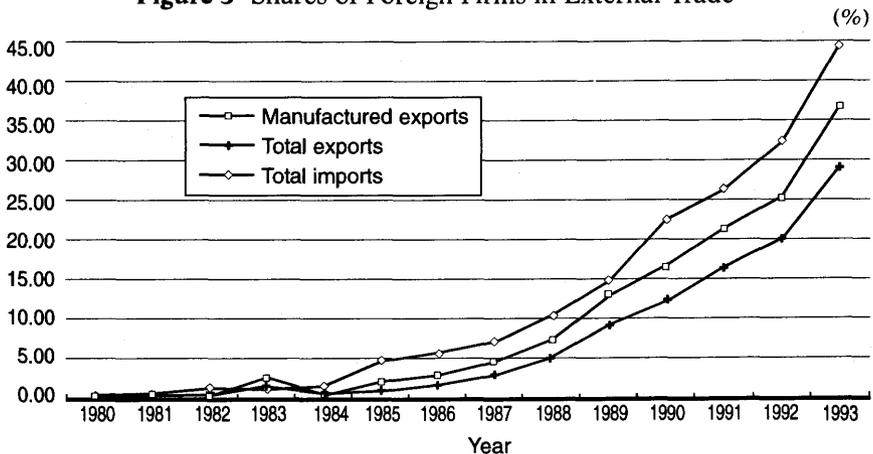
eds. [1994:312] and MITI [1994:14]). On the contrary, a close association between trade expansion and FDI has been found especially in the past decade.

Figure 3 shows the changing shares of foreign firms in external trade. There is no doubt that foreign enterprises are mobilizers of transactions between China and foreign countries. If the share of industrial enterprises in which overseas Chinese have invested is included, the contribution of foreign firms to external trade is enormous. Figure 4 shows the relationship between the export share of foreign enterprises and in value added by province. It shows a close association between the two, and indicates that at least until recently, FDI has been export-oriented and contributed to income generation through exports. Although a rigorous analysis of economic growth and trade is still necessary both theoretically and empirically, a strong linkage between trade and growth through FDI seems to be unquestionable in the case of China.⁵

Despite the recognition of FDI's contribution in various aspects, the possibility of getting access to modern technology is perhaps the most important reason other than export promotion why China wishes to attract FDI.⁶ This may reflect the fact that the scope for acquiring technology through arms-length transactions rather than through foreign direct investment is narrowing, "as product life cycles become shorter, the costs of research and development become very high, and inter-firm technology networks proliferate" (UN 1992:3).

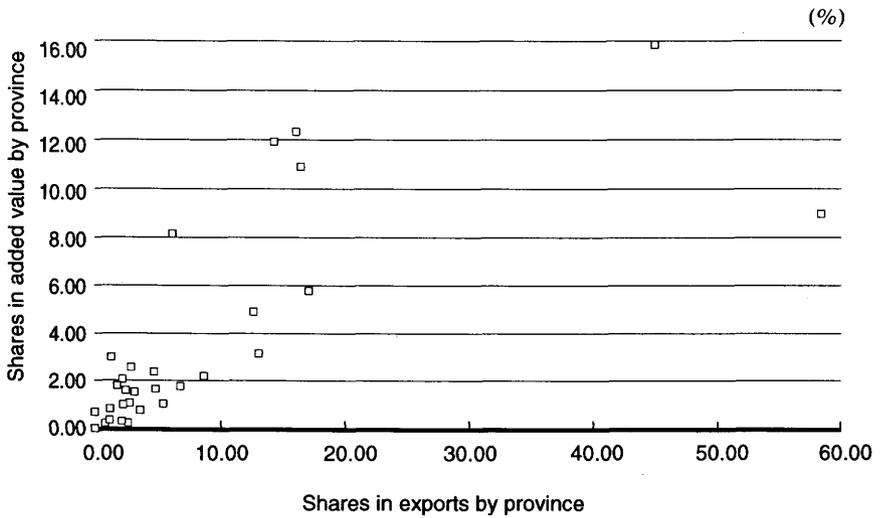
As the recent study by Urata (1994:365) emphasizes, "productivity (broadly defined to include efficient use of resources, technological

Figure 3 Shares of Foreign Firms in External Trade



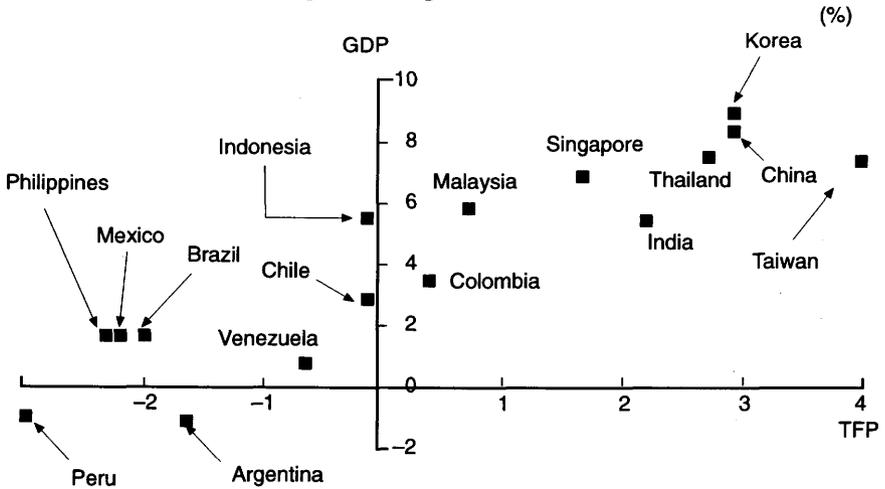
Source: Calculated by the author using 1994 *China Foreign Economic Statistical Yearbook* and ADB, *Key Indicators of Developing Asian and Pacific Countries*.

Figure 4 Share of Foreign Firms in Added Value and Exports in 1993



Source: Calculated by the author using 1994 *China Industrial Economic Statistical Yearbook* and *China Foreign Economic Statistical Yearbook 1994*.

Figure 5 Growth of GDP and TFP
(Average annual growth rates, 1980–90)



Source: Urata (1994:367)

progress, and efficient management) is a crucial factor leading to *sustainable* economic growth." This is confirmed by empirical evidence such as the high correlation between output and productivity growth (see Figure 5). In fact, China was one of the countries that achieved the highest growth of total-factor productivity in the 1980s. If FDI is one of the most important means for acquiring modern technology and management expertise, then openness to FDI is considered to be a major vehicle to help the developing countries catch up in terms of productivity.

According to Blomström (1991), there are two different impacts (both direct and indirect) generated through the process of technology transfer. The direct effect of FDI on developing countries is an international geographical diffusion of modern technology. As the MNEs are expected to bring superior production technology and management expertise into developing countries, the entry of MNEs can help developing countries catch up in terms of productivity.

FDI may also lead to indirect productivity gains for host-country firms through the realization of external economies or spillovers (intra-industry and inter-industry spillovers). There are several ways in which spillovers may occur. MNEs may, for instance, increase the degree of competition in host-country markets, which may force existing inefficient firms to make themselves more productive. MNEs may also provide training for labor and management, which may then become available to the economy as a whole. Another possible channel is the training given to local suppliers of intermediate goods, such as raw materials, parts, and components, to meet the higher standards of quality control and delivery speed required by the MNEs' technology and method of operation.

There is some statistical evidence to show that FDI contributed to improving the productivity level in general. Table 6 shows the comparison of total-factor productivity between foreign and non-foreign industrial enterprises by province. In this paper, two sets of productivity differentials are calculated between foreign and state-owned enterprises depending on the estimates of capital stock. As many scholars emphasize,⁷ inclusion of non-productive capital such as housing, schools, and health clinics creates a problem when calculating the production efficiency of state-owned enterprises. Therefore, two kinds of capital stock estimates are used to obtain productivity differentials.

In this paper, the positive sign indicates the superiority of foreign over non-foreign sectors in terms of total-factor productivity. For instance, using the original data for capital stock, the total-factor productivity level of foreign enterprises is calculated to be 69 percent higher than that of state-owned ones throughout the nation as a whole. According to Table 6, the superiority of the former over the latter is valid in all of the regions except three. This result is not affected by the use of revised capital stock

Table 6 Comparison of Total Factor Productivity between Foreign and Other Types of Enterprises in 1993

(%)

	State1	State2	Collective	H.M.T
Total	69.03	58.09	30.89	23.19
Beijing	126.35	115.42	41.24	19.49
Tianjin	112.64	101.71	58.30	45.42
Hebei	24.83	13.90	-9.10	-19.25
Shanxi	105.56	94.62	46.09	18.82
Inner Mongolia	37.44	26.51	39.86	54.91
Liaoning	34.08	23.15	-21.58	-26.26
Jilin	72.95	62.02	53.87	70.90
Heilongjiang	10.62	-0.31	-3.88	33.78
Shanghai	108.81	97.87	86.79	64.67
Jiangsu	58.72	47.78	18.94	11.66
Zhejiang	53.83	42.90	18.02	-6.34
Auhui	44.05	33.12	15.02	56.30
Fujian	36.57	25.63	5.77	15.84
Jiangxi	88.18	77.24	24.10	61.58
Shandong	28.64	17.71	-22.10	10.05
Henan	39.63	28.69	19.02	28.22
Hubei	99.79	88.86	76.88	72.70
Hunan	25.41	14.48	7.81	39.73
Guangdong	37.60	26.67	35.66	31.17
Guangxi	-15.47	-26.41	-36.11	-13.44
Hainan	135.66	124.73	115.03	57.95
Sichuan	84.89	73.96	28.97	-49.02
Guizhou	94.45	83.51	76.96	47.26
Yunnan	-31.63	-42.57	15.92	16.45
Tibet	32.76	21.83	2.16	N.A.
Shaanxi	155.17	144.24	98.98	22.04
Gansu	82.20	71.26	28.97	22.29
Qinghai	-29.63	-40.56	-43.02	N.A.
Ningxia	12.13	1.19	-2.39	-77.22
Xinjiang	57.39	46.45	54.48	146.37

Note: 1. The following equation was used to calculate the productivity difference between foreign and other types of enterprises.

$$\ln(\text{TFP}_f) - \ln(\text{TFP}_i) = \ln(\text{VA}_f) - \ln(\text{VA}_i) - 0.5 * [\text{Sl}_f + \text{Sl}_i] * [\ln(\text{EMP}_f) - \ln(\text{EMP}_i)] - 0.5 * [\text{Sk}_f + \text{Sk}_i] * [\ln(\text{K}_f) - \ln(\text{K}_i)],$$

where VA = Value added

EMP = Number of employees

K = Fixed assets

$0.5 * (\text{Sl}_f + \text{Sl}_i)$ = Average value share of labor input

$0.5 * (\text{Sk}_f + \text{Sk}_i)$ = Average value share of capital input

f=Stands for foreign-owned firms

i=Stands for state, collective, and H/M/T

2. To obtain factor input shares, refer to Otsuka, Liu and Murakami (1995), and Kuan, et al. (1988).

3. H/M/T stands for industrial enterprises invested in by overseas Chinese from Hong Kong, Macao, Taiwan and others.

4. State1 uses original capital stock data of state-owned enterprises, and State2 uses adjusted capital stock data excluding nonindustrial investment. To obtain adjusted capital stock data, refer to Jefferson, Rawski and Zheng (1992).

Source: Calculated by the author.

data. Moreover, the same kind of tendency is observed in comparison with other non-state enterprises such as collectively-owned and overseas Chinese enterprises, although to a lesser extent.⁸

Due to the limited availability of data, it is not possible in this chapter to examine spillover effects or the degree of FDI externality on the rest of the economy. However, several available studies demonstrate the existence of positive FDI spillover effects. For instance, Wei (1995) empirically showed the existence of spillovers of technological or managerial expertise across firms within cities through FDI by employing two city-level data sets.

Bruno (1995:10) states that technological spillovers, contrary to what is sometimes claimed, do not appear to explain much of the rapid growth in East Asia. Grossman and Helpman (1990:91) emphasize that although developing countries potentially stand the most to gain from the large stock of knowledge capital already accumulated in the industrialized world, the technology flows are anything but automatic. Fortunately, in the case of China, technological diffusion and spillovers seem to have occurred by inviting FDI. Further investigation of the mechanism by which knowledge and technology spread across international borders is a very important future research topic.

In summary, in China FDI seemed to have contributed to the very rapid and swift expansion of the non-state sector, and has become an engine of growth by bringing a package of both tangible and intangible assets.

4. FUTURE PROSPECTS FOR THE ROLE OF FDI, AND IMPLICATIONS FOR OTHER REFORMING ECONOMIES

4.1 Future Prospects for the Role of FDI

From the perspective of growth, one of the most important contributions of FDI in China was empirically found in the improvement of the productivity level possibly through the transfer of technology and managerial expertise. Foreign capital from Hong Kong and Taiwan brought about the modern concept of management and marketing, a concept that helps to transfer mass military-related heavy industries into consumer-related light industries (Chen, Chang and Zhang 1995:700).

However, for several reasons Chinese observers consider this to be somewhat disappointing in regard to the transfer of advanced technology through FDI (Chen, Chang and Zhang 1995:699). First, as observed above, FDI in the nonproductive service sector amounted to a considerable share, mainly in commerce and real estate. Second, the major suppliers of FDI are Hong Kong and Taiwan, which have never been

recognized as major sources of advanced technology, and whose investment is considered to involve either low or quite standardized technology

Chinese observers' dissatisfaction with such technology transfer can be verified to some extent in Tables 7(a) and 7(b). Both tables indicate changes in the composition of export commodities. Since the economic activities of foreign enterprises are most apparent in trade, the characteristics of trade are thought to describe the behaviors of foreign firms

Table 7(a) Exports by Type of Commodity

(Share,%)

	Agriculture- intensive goods	Mineral- intensive goods	Unskilled labor- intensive goods	Technology- intensive goods	Human capital- intensive goods	Total
1984	21.40	25.23	32.62	6.12	3.43	100.00
1985	23.10	28.54	34.58	5.37	3.41	100.00
1986	23.11	14.44	46.02	6.16	4.04	100.00
1987	20.86	14.74	47.12	6.44	4.53	100.00
1988	20.77	13.33	41.08	10.14	14.69	100.00
1989	19.51	11.56	40.39	11.46	17.08	100.00
1990	16.92	11.91	40.01	11.98	19.18	100.00
1991	15.93	9.87	41.74	12.50	19.96	100.00
1992	14.64	8.64	47.53	13.32	15.86	100.00

Note: The sum of shares of the five categories does not necessarily come to 100 percent due to the existence of goods that do not belong to any of the above categories.

Table 7(b) Exports by Type of Commodity

(Share,%)

	Food, etc.	Crude materials	Processed materials	Capital goods	Consumer non-durable goods	Consumer durable goods	Total
1984	14.57	30.86	10.45	5.74	11.75	0.64	100.00
1985	16.46	34.06	16.37	2.76	10.42	1.56	100.00
1986	16.79	19.39	18.79	3.46	12.69	2.03	100.00
1987	14.21	19.29	19.74	4.85	12.73	2.49	100.00
1988	14.28	15.66	23.31	10.38	20.38	10.00	100.00
1989	13.55	14.79	21.84	12.81	22.85	11.68	100.00
1990	12.26	12.96	21.52	14.30	22.97	12.66	100.00
1991	11.72	10.38	21.05	15.96	25.10	13.35	100.00
1992	10.69	8.84	19.06	13.59	29.77	15.52	100.00

Note: The sum of shares of the five categories does not necessarily come to 100 percent due to the existence of goods that do not belong to any of the above categories.

well. According to these tables, the most dominant categories of export commodities are, respectively, unskilled labor-intensive goods and consumer non-durable goods, which are usually characterized by low or standardized technology. Therefore, at the least it can be said that the technology and managerial expertise transferred to China so far have not fulfilled the Chinese government's initial expectations for FDI as an outstanding means of transferring high and advanced technology.

FDI will continue to be involved in the further expansion of non-state sectors governed by market principles and to make the transition process easy and continuous in China. However, the quality rather than the quantity of FDI will become more important in the future, as China has to keep upgrading its products and enhance its international competitiveness. If not, China will not be able to survive in global competition. That, in turn, will require a greater amount of FDI from more developed countries such as Japan, the U.S., and the EU.

Attracting FDI from more developed countries, however, depends greatly upon political stability and the progress made in domestic economic reforms. Until 1994, for instance, the FDI flow from Japan to China expanded at an astonishing rate. But this surge of FDI to China cooled down somewhat in 1995, and some Japanese companies once again began to consider ASEAN as an investment site. Thus, FDI's future role is conditioned very much by the stability and consistency of Chinese government policies.

The second role of FDI expected by the Chinese government is its contribution to reforming state sectors. It is true that the essential feature of China's economic reforms was to achieve very rapid growth in non-state sectors without disrupting state sectors. However, at some point in time China must tackle state sector reforms in order to sustain the current level of economic growth, which may require supplying the state sectors with modern technology and managerial expertise.

Fulfillment of this second role will, however, depend very much on the extent to which China's government forgoes control over state sectors. According to Blomström (1991), "The more modern and complex the technology, the less willing the multinationals are to accept any arrangements other than wholly owned subsidiaries, in order to avoid leakages." Unless MNEs are given a great extent of control over the operation of firms, they will not be willing to make large investments in state sectors.

4.2 Implications for other Reforming Economies

What can we learn from the experiences of economic reforms in China? First of all, an essential part of the reform process is the rapid expansion

of non-state sectors without disrupting state sectors. The reform of state sectors is time-consuming because adjustment costs are usually enormous and the creation of new institutions is very difficult. High but sustainable growth can be achieved only by combining the high growth of non-state sectors with the smooth transition of state sectors.

Second, FDI can contribute to the transition process greatly by bringing a new stream of resources from overseas into the non-state sectors, which are more efficient than state sectors. FDI can be one of the important means to smooth the transition process. It is important to note, however, that FDI is determined by both supply and demand factors. Therefore, the ability of FDI to fulfill the expectations of host countries is influenced also by the conditions of suppliers. In one sense, China was lucky because economic reforms were initiated just when the countries of the Asia-Pacific region were growing more dependent upon one another through FDI and trade. Other developing countries may not be able to expect very much from liberalization and deregulation in the way of attracting FDI because there is no guarantee that liberalization itself automatically leads to a large FDI inflow. The conditions of supply as well as demand must be taken into consideration when developing FDI policy.

Appendix A Value Added per Employee

(Yuan)

	Nation				
		State	Collective	Foreign	H/M/T
Total	15,473	16,202	11,859	42,051	26,720
Beijing	19,583	18,017	16,100	62,939	34,267
Tianjin	12,424	10,441	11,582	45,942	27,622
Hebei	13,697	15,072	10,798	27,597	21,128
Shanxi	11,062	11,362	9,753	31,083	17,929
Inner Mongolia	9,470	11,196	4,934	18,164	11,540
Liaoning	15,776	18,084	11,305	51,010	36,962
Jilin	11,919	14,106	6,751	40,924	13,239
Heilongjiang	13,495	16,021	6,668	21,062	20,682
Shanghai	26,002	26,077	13,651	89,250	36,945
Jiangsu	16,119	16,574	14,434	35,703	25,333
Zhejiang	15,333	16,848	13,367	27,285	28,079
Auhui	13,612	16,320	10,272	30,581	15,381
Fujian	15,222	14,592	9,712	24,451	17,283
Jiangxi	11,385	11,223	10,758	33,879	22,632
Shandong	19,317	19,450	18,283	28,725	21,367
Henan	11,744	13,383	8,087	29,587	12,714
Hubei	16,692	19,133	12,221	67,958	25,406
Hunan	9,294	11,507	5,505	54,361	8,957
Guangdong	23,903	25,944	15,940	46,366	27,574
Guangxi	17,112	17,843	13,003	18,741	20,812
Hainan	19,353	15,922	12,044	100,894	47,517
Sichuan	12,207	12,268	10,454	47,067	50,971
Guizhou	15,290	16,825	9,094	47,199	42,473
Yunnan	23,759	29,138	10,700	23,292	17,530
Tibet	13,465	15,727	7,136	10,363	N.A.
Shaanxi	12,486	12,142	10,249	87,639	58,085
Gansu	13,266	14,369	9,992	48,925	11,563
Qinghai	14,823	17,421	6,410	3,067	N.A.
Ningxia	10,809	12,297	6,648	10,707	25,858
Xinjiang	14,986	17,048	7,828	23,099	7,926

Note: H/M/T stands for industrial enterprises invested in by overseas Chinese from Hong Kong, Macao, Taiwan and others.

Source: *Chinese Industrial Yearbook 1994*.

Appendix B Comparison of Value Added per Employee by Type
of Enterprise Ownership

(Foreign=100)

	State	Collective	Foreign	H/M/T
Total	38.5	28.2	100	63.5
Beijing	28.6	25.6	100	54.4
Tianjin	22.7	25.2	100	60.1
Hebei	54.6	39.1	100	76.6
Shanxi	36.6	31.4	100	57.7
Inner Mongolia	61.6	27.2	100	63.5
Liaoning	35.5	22.2	100	72.5
Jilin	34.5	16.5	100	32.4
Heilongjiang	76.1	31.7	100	98.2
Shanghai	29.2	15.3	100	41.4
Jiangsu	46.4	40.4	100	71.0
Zhejiang	61.7	49.0	100	102.9
Anhui	53.4	33.6	100	50.3
Fujian	59.7	39.7	100	70.7
Jiangxi	33.1	31.8	100	66.8
Shandong	67.7	63.6	100	74.4
Henan	45.2	27.3	100	43.0
Hubei	28.2	18.0	100	37.4
Hunan	21.2	10.1	100	16.5
Guangdong	56.0	34.4	100	59.5
Guangxi	95.2	69.4	100	111.0
Hainan	15.8	11.9	100	47.1
Sichuan	26.1	22.2	100	108.3
Guizhou	35.6	19.3	100	90.0
Yunnan	125.1	45.9	100	75.3
Tibet	151.8	68.9	100	N.A.
Shaanxi	13.9	11.7	100	66.3
Gansu	29.4	20.4	100	23.6
Qinghai	567.9	209.0	100	N.A.
Ningxia	114.9	62.1	100	241.5
Xinjiang	73.8	33.9	100	34.3

Note: H/M/T stands for industrial enterprises invested in by overseas Chinese from Hong Kong, Macao, Taiwan and others.

Source: *Chinese Industrial Statistical Yearbook 1994*.

Notes

1. Summaries of several hypotheses are well presented in Lin, Cai and Li (1994).
2. This point is stressed by Lin, Cai and Li (1994).
3. Only since the recent publication of the 1994 issue of *the Chinese Industrial Statistical Yearbook* can we analyze industrial development by type of ownership and by region. Unfortunately, however, the yearbook does not yet break industrial activities down into different categories.
4. It is important to note, however, that the contribution of foreign enterprises could be much higher if indirect impacts are included. For instance, local enterprises may be established or enlarged if the entry of foreign enterprises develops linkages with the rest of the economy. Investment linkage will be an important future topic in assessing the indirect impacts of FDI in terms of employment.
5. Krugman and Obstfeld (1991) describes the economic growth of China after 1979 as a classic demonstration of the potential of export-oriented industrialization.
6. See footnote 1 of p. 15 in Pomfret (1991).
7. See Kuan, et al. (1988), Jefferson, Rawski and Zheng (1992), and Otsuka, Liu, and Murakami (1995).
8. For the purpose of comparison, Appendixes A and B show labor productivity by province and by type of enterprise ownership.

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