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Inward Investment and the Transformation of Regional Economies in China

From Regional Convergence to Fragmentation between 1953 and 1996

The main aim of this paper is to contribute to the discussion on the relationships between foreign direct investment (FDI) and regional development in China. More specifically, it identifies the fundamentally different modes of development between the Mao and the post-Mao era, and explores the role of inward FDI in order to understand the regional fragmentation of the contemporary Chinese economy. The paper is divided into three sections. First, it illuminates the transformation of regional economies in China towards FDI and the geography of regional inequality in contemporary China. Then, it explores the limits of Mao's strategies for regional development, which led to the introduction of FDI. The final section highlights the way in which the concentration of FDI in new industrial spaces has led to regional fragmentation in the post-Mao era by analysing the extent to which FDI has influenced industrial production, international trade and employment.

1 Introduction

The Chinese economy has undergone a profound transformation since 1978 due to an economic opening up. Economic structures established under China's state socialist system are being transformed by a number of processes which together constitute an attempt to open the door – the introduction of foreign investment, the privatisation of state-owned enterprises (SOEs) and the development of town and village enterprises (TVEs), are all a part of this "transition to capitalism." However, the transition in China has not been as effective as that witnessed in Central and Eastern Europe (CEE). "China's reforms have not involved a substitution of the centrally planned market as the integrative mechanism for the economy" (Smart, 1998:434) while transformation performed in CEE was based on the assumption that the reduction of state influence over the economy would automatically and quickly stimulate a private sector recovery as long as an appropriate regulatory and incentive framework to support a market economy was put in place (Smart, 1998:429; Angresano, 1994:82). China has, nonetheless, been seen as more successful in achieving an economic transition to capitalism than many other state socialist economies. For example, since 1978 China's real GDP has recorded much higher growth than other state socialist economies, even exceeding other developing Asian economies, comparable to Japan from 1960 to 1974, and South Korea from 1965 to 1978 (Smart, 1998:428). Much of the growth in China has been implemented by a different mode of development than in CEE, for it is based upon export-oriented capitalist industrialisation through the introduction of foreign direct investment (FDI).

The impacts of inward investment on the economy, however, have undergone further regional disparity in China. Nonetheless, only some literature concentrates on the inter-regional dimensions of economic change related to FDI (Fan, 1995, 1997; Leung, 1996), although a vast amount of literature is concerned with assessing the impact of these changes at the national level (for example, see Murphy, 1974; Kleinberg, 1990; Shirk, 1993; Lardy, 1994; Nolan, 1994; Perkins, 1994; Griffin and Khan, 1994; Yusuf, 1994; Chen, Chang and Zhang, 1995; Ma, 1997; Smart, 1998). The paper therefore aims to contribute to the discussion on the relationships between FDI and regional development in China.

The strategy of economic development in China has favoured the eastern region, especially "new industrial spaces," suggesting preferential policies in foreign investment, foreign-exchange retention, revenue-remittance, pricing and finance (Fan, 1995:426). These preferential policies have played a critical role as the institutional mechanism for the introduction of FDI. Along with this, "new industrial spaces" have undergone industrial restructuring dominated by foreign investment. Consequently, it has given rise to the uneven development of transition and regional fragmentation. It is argued that this is a new form of uneven regional development, differentiating development between the *Mao* and the *post-Mao* era. Indeed, in order to understand the regional fragmentation of the contemporary Chinese economy, it is necessary to point out existing regional economic structures and the relationships between central and local government with regard to inward investment. However, such a discussion is beyond the scope of this paper. The paper therefore focuses primarily upon the fragmented pattern of Chinese regional development dominated by FDI.

The paper is divided into three sections. The first section illuminates the process of opening up towards FDI and the geography of regional inequality in contemporary China. It shows that the establishment of new industrial spaces and "preferential policies" for them has led to the dramatic rise of FDI and regional fragmentation. The latter represents the historical contexts of the new forms of uneven regional development. In the Mao era, strategies of regional development were inspired by the ideological concern for regional equality and defence considerations arising from perceived international threats. This mode of development had more or less decreased regional inequality, as state-led investment accelerated big industrial capital investment in the underdeveloped region, especially in the central and the western region. However, regional economic strategies implemented under the Mao era were not able to equalise levels of development. The section focuses on the limit of Mao's development model as the background of FDI introduction. The third section highlights the concentration of FDI in "new industrial spaces" in the eastern region, whose transition is driving the post-Mao era and has led to regional fragmentation. It is analysed by the extent to which FDI has influenced industrial production, international trade and employment.

2 Opening up Towards FDI and the Geography of Regional Inequality in Contemporary China

As a measure of Chinese economic reform, the importance of FDI in China since 1978 cannot be understated. It

	US$ million (% as of world FDI)						
	1984–89	1990	1991	1992	1993	1994	1995
China	2,282 (1.98)	3,487 (1.71)	4,366 (2.77)	11,156 (6.64)	27,515 (13.23)	33,787 (14.97)	37,500 (11.91)
Indonesia	133 (0.12)	162 (0.08)	141 (0.09)	151 (0.09)	273 (0.13)	620 (0.27)	1,750 (0.56)
Malaysia	798 (0.69)	2,333 (1.14)	3,998 (2.53)	5,183 (3.08)	5,006 (2.41)	4,384 (1.94)	5,800 (1.84)
Philippines	326 (0.28)	530 (0.26)	544 (0.34)	228 (0.14)	1,025 (0.49)	1,457 (0.65)	1,500 (0.48)
Thailand	676 (0.59)	2,444 (1.20)	2,014 (1.28)	2,116 (1.26)	1,726 (0.83)	640 (0.28)	2,300 (0.73)
Vietnam	2 (0.00)	16 (0.01)	32 (0.02)	24 (0.01)	25 (0.01)	100 (0.04)	150 (0.05)
Slovakia	–	–	–	–	199 (0.10)	303 (0.13)	250 (0.08)
Czech Rep.	–	–	–	–	563 (0.27)	862 (0.38)	2,500 (0.79)
Former CSFR	43 (0.04)	207 (0.1)	600 (0.38)	1,103 (0.66)	–	–	–
Poland	16 (0.01)	89 (0.04)	291 (0.18)	678 (0.40)	1,715 (0.82)	1,875 (0.83)	2,510 (0.80)
Hungary	–	–	1,462 (0.93)	1,479 (0.88)	2,350 (1.13)	1,144 (0.51)	3,500 (1.11)
World	115,370 (100)	203,812 (100)	157,730 (100)	168,122 (100)	207,937 (100)	225,660 (100)	314,933 (100)

Source: Elaborated from World Bank, 1996

Table 1: Comparative levels of inward FDI in the selected state socialist economies and Southeast Asian economies.

has progressively directed industrial investment policy, leading to the establishment of special economic zones (SEZs) and open coastal cities (OCCs), reshaping attitudes towards work and wealth creation, and helped redesign the business and legal framework. However, it has resulted in further regional inequality. This section illuminates the impact of FDI on the economy and regional inequality in contemporary China.

Given the emphasis on FDI in the process of reforming Chinese economies, it comes as no surprise that China has attracted higher inward investment than other state socialist economies and ASEAN in the post-Mao era (World Bank, 1996). Table 1 shows comparative levels of FDI in the selected state socialist countries and Southeast Asian countries between 1984 and 1995. For example, in 1990, China's share in global FDI was only 1.7 per cent. However, data for 1995 show that US$ 37.5 billion was invested in China, accounting for 11.9 per cent of the total global capital flow. This is a result of the response to the abandonment of Mao's policies against foreign capital and technology. [1]

The significance of FDI can be witnessed in three major benefits for the Chinese economy. The first benefit from FDI is the contribution to gross domestic product (GDP). The share of FDI in China's GDP has increased from 0.9 per cent of GDP in 1984 to 16.1 per cent in 1996 (table 2). Secondly, FDI has taken on one of the most important roles in China's international economic activities through increased access to foreign markets. The contribution of FDI to the growth of China's foreign trade has increased. The share of FDI in total exports, for example, increased sharply from only 1.1 per cent of total exports in 1985 to 20.4 per cent in 1992, and to 40.7 per cent in 1996 (SSB 1995; and see table 8). The third benefit is in the form of the creation of employment. Around 5.4 million Chinese were employed by foreign investment enterprises in 1996 (table 3). Although this is only 2.7 per cent of the urban workforce, the significance of FDI for employment is increasing year by year, accounting for a rise from 0.05 per cent of the urban workforce in 1985 to 0.39 per cent in 1990, and 2.7 per cent in 1996.

Notwithstanding the significance of FDI in the Chinese economy, the geography of regional inequality emerged as the result of the interaction of new institutions and foreign business activities. This regional inequality in contemporary China was enforced by the formal

	GDP	Accumulated FDI (RMB 100 million)*)	Accumulated FDI as % of GDP
1981	–	35.0	–
1984	7,171	64.6	0.90
1985	8,964	113.3	1.26
1986	10,202	177.9	1.74
1987	11,962	264.1	2.20
1988	14,928	382.9	2.56
1989	16,909	510.4	3.02
1990	18,531	677.1	3.65
1991	21,617	918.1	4.24
1992	26,635	1,524.6	5.72
1993	34,515	3,005.7	8.70
1994	45,006	4,431.8	9.84
1995	58,478	7,564.8	12.93
1996	68,593	11,031.9	16.08

*) Converted from US$ into RMB using official current exchange rate taken from SSB

Source: Elaborated from SSB, 1995 to1997 a

Table 2: Growth of FDI and GDP in China, 1984 to 1996.

	Total number of employment (10 thousand)	Urban (A)	Foreign firms (B)	B/A (%)
1985	49,878	12,808	6	0.05
1986	51,282	13,293	13	0.10
1987	52,783	13,783	21	0.16
1988	54,334	14,267	31	0.21
1989	55,329	14,390	47	0.33
1990	63,909	16,616	66	0.39
1991	64,799	16,977	165	0.98
1992	75,554	17,241	221	1.28
1993	66,373	17,589	288	1.64
1994	67,199	18,413	406	2.21
1995	67,947	19,093	513	2.66
1996	68,850	19,815	541	2.73

Source: Elaborated from SSB, 1997a

Table 3: The share of employment by foreign enterprises, 1985 to 1996.

adaptation of the "three economic belts division of labour" for the seventh Five-Year Plan (FYP) between 1986 and 1990. They comprise the eastern, central and western regions, according to the region's comparative advantage and regional division of labour. The eastern region specialises in export-oriented industry and foreign trade; the central region in agriculture and energy development; and the western region in animal husbandry and mineral exploitation (Fan, 1997:623). In order to promote export-led industry and foreign trade in the eastern region, the Chinese government established new industrial spaces to attract foreign investment. The government also provided "preferential policies" for investment, foreign-exchange retention, revenue-remittance, pricing and finance to promote these locations. As inward investment in these locations has boosted economic growth, China has undergone new forms of regional fragmentation.

The introduction of FDI in China was underpinned by the adoption of the *Law of the People's Republic of China on Joint Ventures Using Chinese and Foreign Investment* at the Fifth National People's Congress in July 1979 (Lardy, 1994:63). It was further stimulated by the establishment of SEZs in Shenzhen, Zhuhai and Shantou in Guandong Province, and Xiamen in Fujian Province, which had been established along the southeast coast. These SEZs played important roles as testing grounds for experimental economic and social reforms. The central Committee of the Communist Party (CCP) of China and the State Council extended the concept of SEZs to a further 14 coastal open cities [2] between 1984 and 1986. In 1985, three "development triangles," the Yangtze River Delta, the Pear River Delta in Guangdong province, and the Min Nan region in Fujian, were also opened to foreign investors (Chen, Chang and Zhang, 1995). Complementing the opening up policy, new provisions such as the *Joint Venture Implementing Regulation* in 1983 and the *Patent Law* in 1985 further encouraged FDI, making China even more attractive to investors (Kleinberg, 1991:196). These measures were followed, in 1988, by a CCP decision to set up Hainan Province as the biggest and fifth SEZ, and to extend the open coastal areas into an open coastal belt. More recently, the concept of SEZs has been expanded to include Pudong new zone in Shanghai. In 1992, 13 free trade areas were established in major port cities. Until 1990, SEZs were exclusively coastal. Since then they have gravitated inland to include even autonomous regions.

The expansion of these economic liberalisation zones has closely corresponded to the growth of cumulative inward investment. As table 2 indicates, the initial response of foreign investors to the opening of China was less than enthusiastic. From the opening in 1979 to the establishment of SEZ in 1981, the amount of accumulated investment (RMB 3.5 billion) was only half of the 1984 figure (RMB 6.4 billion). Although during the establishment of the 14 OCCs (1984 to 86) China attracted considerable FDI, real growth in FDI did not happen until after the mid-1980s. This was due to uncertainty about property rights and the fear of a Chinese government policy reversal (Kamath, 1990, 1994). Further setbacks occurred between 1988 and 1991, when foreign investment almost ground to a halt in the wake of the Tiananmen Square episode and years of political uncertainty. However, since then FDI has accelerated dramatically, each year accounting for around twice the growth of the previous one. It is important to note the reasons for the post-1991 growth rate. The increase in FDI seems to be associated with a more laissez faire and positive attitude on the part of the Chinese authorities towards foreign investors. Related to this were moves to extend SEZs into inland regions, the Chinese government simplified the contract approval process and improved the security of property rights for foreign investors (Chen, Chang and Zhang, 1995:693; Kamath, 1994). Thus, the expansion of the concept of SEZs and various legislated investment incentives gave rise to a significant increase in FDI.

The statistics in table 4 bear witness to this. The estimated average national per capita GDP for 1996 was RMB 6,123 (US$ 716). [3] Recently published state data for regional GDP suggests that there are significant regional variations from these national figures. The poorest region – Guizhou Province in the western region for instance – records a per capita GDP of only RMB 2,025 or US$ 245 (33 per cent of national average per capita GDP). In contrast, the wealthiest region, Shanghai municipality, recorded a figure of RMB 20,452 or US$ 2,473 (more than three times the national average). Between these two extremes, most regions in the east have a per capita GDP of over 125 per cent of the national average, while only three provinces in the central region – Jilin, Heilongjiang and Hubei – show figures close to the average per capita GDP and only one province in the west, Xingiang, shows a per capita GDP over 65 per cent of the country wide figure. All regions that record above average per capita GDP have received significant levels of FDI.

This is especially seen in eastern regions where per capita GDP is over 150 per cent of the national average. For example, inward FDI in Beijing, Shanghai, Tianjin, Fujian and Guang-

	FDI per capita	Index	GDP per head	Index
Eastern	**1,207**	**204**	**9,395**	**157**
Beijing	1,233	289	12,833	210
Tianjin	2,271	531	11,629	190
Hebei	128	30	5,325	87
Liaoning	422	99	7,672	125
Shanghai	2,777	650	20,452	334
Jiangsu	733	171	9,837	161
Zhejiang	350	82	9,547	156
Fujian	1,253	293	7,994	131
Shandong	301	71	6,821	111
Guangdong	1,689	395	9,365	153
Guangxi	145	34	4,074	67
Central	**94**	**22**	**4,345**	**74**
Shanxi	44	10	4,199	69
Inner Mongolia	31	7	4,269	70
Jilin	173	40	5,123	84
Heilongjiang	152	36	6,445	105
Anhui	8 3	20	3,854	63
Jiangxi	73	17	3,696	60
Henan	57	13	4,016	66
Hubei	117	27	5,099	83
Hunan	116	27	4,118	67
Western	**27**	**6**	**3,469**	**56**
Sichuan	39	9	3,688	60
Guizhou	9	2	2,025	33
Yunnan	16	4	3,690	60
Xizang	0	0	2,654	43
Shaanxi	92	22	3,317	54
Gansu	36	9	2,895	47
Qinghai	2	0	3,762	61
Ningxia	11	2	3,716	61
Xingjiang	38	9	5,478	89
National average	**467**	**100**	**6,123**	**100**

Source: Elaborated from SSB, 1997a

Table 4: Regional per capita FDI and GDP in China, 1996 (RMB).

dong was 4 to 6 times the national average. By contrast, inward FDI per capita in most central and western regions was less than 10 per cent of the national average.

To sum up, the integration of former industrial space in some eastern regions and the new institutional arrangements for attracting foreign investment has facilitated rapid changes in the eastern region, while weaknesses inherent in areas lacking any significant form of industrial base or policies that lead to economic enhancement have seen the central and western regions fall even further behind the east in development terms, as the gulf between the regions has widened in modern times. The contemporary geography of China, therefore, hints at a high degree of regional fragmentation. However, it needs to be placed within the context of the general tendency towards regional economic convergence during the Mao era. The following section highlights the historical pattern of regional policy for regional convergence.

3 The Strategy of Regional Economic Convergence and Regional Development During the Mao Era

The central government of China played a critical role in regional economic development in the Mao period. The economic programmes of state socialism in China were explicitly oriented towards the eradication of the regional inequalities arising from the earlier concentration of foreign investment in the eastern region. [4] Mao inherited this regional inequality from pre-1949 days. Most of the developed areas were in the east and 70 per cent of the assets and output of Chinese industries originated in large coastal cities in 1949 (Fan, 1995:422). Mao's new communist government saw the closure of foreign investment as a way of dealing with the problem of regional inequality. In keeping with Lenin's view that the export of capital from capitalist countries acted as the central mechanism of imperialism and that international companies were "double" parasites, exploiting the working class in their own nation as well as those of colonial or more backward countries (Hayter and Han, 1998:5 to 6), Mao demanded the elimination of spatial inequality by diverting resources from east coast regions to inland regions in accordance with the notion of a socialist ideological commitment to equality. The strategy of the plan was mainly implemented by state investment in capital construction, based on an ideological concern for spatial equality and geo-political responses to national defence considerations, arising from a perceived international threat. State investment thus became the main strategy used to largely equalise regional economic development during the Mao era. However, this development model did not result in the achievement of regional equality. Therefore, this section explains the historical context of the failure of Mao's development model as the background to the introduction of FDI.

To reveal a general trend of regional transformation, the coefficient of variation (hereafter CV) [5] of per capita regional state investment and per capita regional industrial output is calculated for the period from 1953 to 1996. In the absence of data pre-1949, an overview of regional inequality is given for this period. Fig. 1 represents the pattern of regional inequality between 1953 and 1996. The CV represented in fig. 1 is based on data in current rather than constant prices because time-series of provincial price indices are not available. The provincial analysis is based on State Statistical Bureau (SSB) data and provincial statistical data for 1953 to 1992. Data for Tibet province is omitted because data for the province is poor in both quality and availability. Hainan province is aggregated as it has only been recognised in a separate

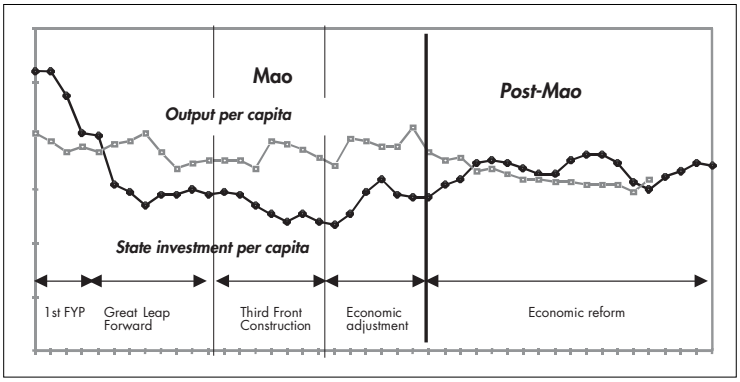


Fig. 1: Regional inequality in China, 1953 to 1996.
Source: Elaborated from Huseh, Qiang and Shucheng, 1993; SSB, 1991 to 1997a

provincial unit since 1988. Therefore, the provincial analysis includes 28 provinces.

Trends in output per capita depend on the relationship between output and population growth. The explanation of variations in the growth of regional industrial output per capita can be differentiated from regional population growth, which depends on natural increases and migration. During the Maoist regime, there was a general decline in state investment inequality, while there was little fluctuation at the level of regional output inequality. Maoist redistributive policies led to paradoxical results, contributing, it seems, to the rise in inequality. This implies the limits of Mao's development model for reducing regional economic unevenness. One of the reasons why was that this measure encouraged relatively rapid population growth in the less developed parts of China.

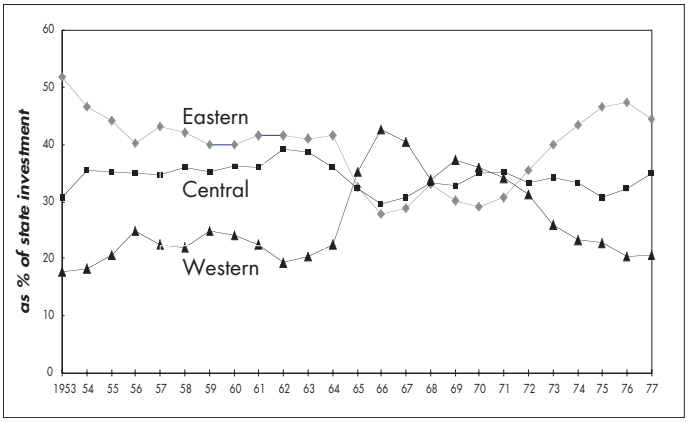
The process of regional transformation can be divided into three periods (fig. 1). The first period, 1953 to 1964, covered the First Five-Year Plan (FYP) and the Great Leap Forward and its aftermath, which successfully reduced the level of regional inequality. The second, 1965 to 1971, was the Third Front period, when there was a concentration of heavy industries input in the inland region. The third period, 1972 to 1977, marked a crisis in the pathway of economic convergence with programmes for economic adjustment.

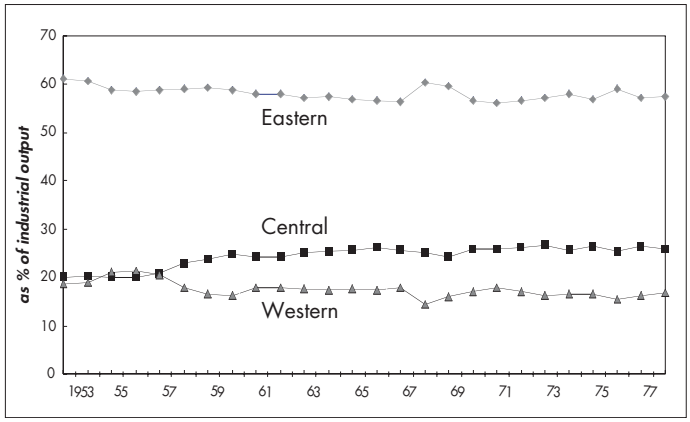
First of all, a strategy aimed at regional equality began as early as the first FYP between 1953 and 1957. During the first FYP, the central government promised to give serious attention to backward inland regions through the provision of state investment. Financial remittances were channelled from more developed regions to less developed inland regions. In order to achieve this, large cities in the less developed regions were permitted to retain most of their revenue and further subsidies were also given (Lardy, 1975). In this way, the allocation of state investment for regional development in the interior region increased significantly from 48.2 per cent in 1953 to 59.7 per cent of total state investment in 1956 (fig. 2a). It contributed to a reduction in regional output inequality. However, the failure of the next development model, the Great Leap Forward, due to famine in the interior between 1959 and 1961, increased it again.

The second major development model was the "Third Front Construction" programme [6] between 1965 and 1971, which was devoted to preparing for war in a geo-political response to a rising international threat. As relations between the United States and the former Soviet Union deteriorated in the early 1960s, and the United States became embraced in the turmoil of the Vietnam war in 1966, China's perception of international threat grew.

In addition, concerns about national security arose from Chinese border clashes with Russia due to the ensuing deployment of a substantial number of Soviet troops in Mongolia in response to the mutual defence treaty signed by both countries in 1966 (Ma and Wei, 1997:220). The threat of war led China to construct three different strategic fronts, which represented a clear defence-oriented strategy. This model advocated the construction of new and large-scale heavy industries, such as iron, steel and military machinery in the third front that were less vulnerable to foreign attack. During this period more than two thousand large and medium-sized industrial, research and educational projects were built, giving rise to 45 new production centres and 30 new industrial cities (Ma and Wei, 1997: 220). As a result, between 1964 and 1970, state investment in the interior increased dramatically from 58.5 of total

Fig. 2a+b: Regional distribution of state investment in capital construction in state-owned enterprises and industrial output in China, 1953 to 1977.
Source: Elaborated from Huseh, Qiang and Shucheng, 1993





Annual average growth rate

	1953–1957		1957–1964		1964–1971	
	Population	RGIO	Population	RGIO	Population	RGIO
Eastern	**3.3**	**11.3**	**2.8**	**6.7**	**1.8**	**10.6**
Beijing	9.3	13.2	9.2	11.6	0.3	10.0
Tianjin	3.4	10.8	2.5	4.4	0.7	10.1
Hebei	2.3	8.8	1.2	5.9	2.1	13.2
Liaoning	4.0	12.3	1.9	5.4	2.0	8.6
Shanghai	2.8	6.5	6.5	7.2	-0.3	7.7
Jiangsu	2.3	8.0	1.1	7.3	2.3	12.8
Zhejiang	2.5	14.5	2.0	9.0	2.4	8.4
Fujian	2.7	11.4	2.3	6.9	2.9	10.2
Shandong	2.2	13.3	0.6	4.3	2.3	13.2
Guangdong	2.5	12.0	1.8	7.6	2.6	8.2
Guangxi	2.1	13.2	1.4	3.7	2.9	14.7
Central	**2.9**	**13.7**	**2.1**	**10.1**	**2.9**	**10.4**
Shanxi	2.7	18.8	2.0	11.2	2.4	9.4
Inner Mongolia	5.3	22.7	4.2	18.5	3.1	4.3
Jilin	2.4	11.2	3.5	9.5	2.6	8.7
Heilongjiang	5.4	8.3	4.7	9.9	3.5	8.9
Anhui	2.1	16.8	–0.7	6.6	3.5	12.0
Jiangxi	2.2	9.9	2.1	8.4	3.0	12.4
Henan	2.2	8.4	0.7	9.5	2.8	14.9
Hubei	2.2	14.5	1.6	8.7	2.7	10.8
Hunan	1.8	13.0	0.7	9.2	2.8	12.4
Western	**3.3**	**13.9**	**1.5**	**5.0**	**3.4**	**10.7**
Sichuan	2.1	16.2	–0.4	4.4	3.1	10.7
Guizhou	2.5	12.5	0.6	5.4	3.6	13.6
Yunnan	2.3	15.5	1.4	5.4	3.1	9.9
Xizang	n.a.	n.a.	n.a.	n.a.	2.0	n.a.
Shaanxi	2.8	10.7	2.2	4.2	2.4	12.0
Gansu	3.3	12.4	0.4	3.9	3.4	10.7
Qinghai	5.6	21.9	0.9	2.8	4.3	11.1
Ningxia	4.3	9.9	2.6	8.6	4.1	13.3
Xingjiang	3.9	12.7	4.1	5.3	4.4	4.5
China	**2.5**	**11.2**	**1.4**	**6.9**	**2.7**	**10.1**

Note: The calculation way of annual average growth rate is as follows $g = \frac{\log(At/Ao)}{t}$

t denotes time

Ao denotes initial year value

At denotes final year value.

Source: Elaborated from Hsueh, Li and Liu, 1993 and SSB, 1990 to1997a

Table 5: Trends in regional gross industrial output and population in China, 1953 to 1996.

state investment to 70.9 per cent (fig. 2a). In particular, it was concentrated in the western region, which accounted for 40.3 per cent of total state investment in 1967.

It represented a pathway towards industrialisation, especially in backward rural economies, which rapidly established a heavy industrial base by way of preparing for the international threat. Notwithstanding the concentration of state investment in the interior, the distribution of regional gross industrial output (RGIO) in the western region remained steady with few fluctuations (fig. 2b). Two factors explain this outcome; (1) the location and (2) the production system of invested industries. The location of construction was based on the premise of geographical isolation: mountains and caves were preferred, since these minimised the effect of possible bombing. This industrialisation in the remote regions resulted in heavy costs and economic inefficiencies. It also led to a lack of agglomeration economies and infrastructure in the production systems as the backward region was lacking technology and human resources. Branches and workshops were located in different regions for the same reason, and each branch unit was complete with its own transportation system, following the Maoist notion of "self-reliance" or "self-sufficiency" (Fan, 195:423).

This discouraged the integration of industrial production into other locations. Because of this, regional output did not increase as fast as state investment in less developed areas. Inequalities in output per head also did not diminish, despite the decline in the gap of state investment inequality.

One of the reasons, however, for the failure to induce greater equality was differentiated population growth in the western and eastern regions. During this period (1964 to 1971), the annual average population growth in the central and western regions was higher than in the eastern region, pulling the growth in output per capita downward while the annual average growth of regional industrial output in the central and western regions was similar to that in the eastern region (table 5). For example, the annual average growth of Beijing, Tianjin and Shanghai in the eastern region was 0.3, 0.7 and –0.3 per cent respectively in 1964 to 1971, while in Qinghai, Ningxia, and Xingiang in the western region it was 4.3, 4.1 and 4.4 per cent respectively (table 5).

Finally, as the international threats disappeared in the early 1970s, China's top leadership promoted a shift of state investment into the eastern region. As fig. 2a indicates, for example, after the abandonment of Three Front Construction, state investment in the eastern region increased significantly from 30.6 per cent of total state investment in 1971 to 44.4 per cent in 1977, whereas in the western region it decreased from 34.2 to 20.6 per cent. It shows that the end of defence-oriented strategies resulted in a crisis on the path to convergence in both state investment and regional output. It is the result of the process of regional economic development implemented by the historical model of development under the Maoist regimes, which created a mis-match between regional economic structure and the production system.

4 Inward Investment and Regional Economic Fragmentation in the Post-Mao Era

A key theme in the last regional policy for economic convergence under Mao's rule was national economic collapse. For example, per capita GDP in 1978 was at a similar level to mid 1950s' levels (Perkins, 1994:23). In addition, the eastern region was still producing some 60 per cent of China's GIO in 1978 (see fig. 3). This continued underdevelopment during the Maoist period led to the new policy of economic and regional development through China's opening-up to the world economy. This development was implemented through the establishment of new regional spaces to attract foreign business enterprises. This transition to capitalism resulted in a new form of regional unevenness during the post-Mao regimes. In this section, the process of regional fragmentation is identified, first by briefly charting the fragmentation of the regional economy, and then by considering the regional implications of FDI on the Chinese economy.

The main point here is that foreign capital has played a critical role in Chinese regional fragmentation along with the establishment of new industrial zones in the eastern region. For example, the level of FDI in 1996 in the western region was only 2.1 per cent of total FDI and the share of the central region amounted to only 9.7 per cent of total FDI, while the eastern region accounted for 88.2 per cent of total FDI (calculated from SSB, 1997:608). The significant growth and concentration of FDI in the eastern region has added to the importance of foreign capital in regional economies. In particular, because FDI has been concentrated in new industrial zones, its impact on the regional economy is significant. This is clearly seen in the contribution of FDI to GDP in Fujian and Guangdong provinces, where new industrial spaces are concentrated (table 6). For example, the contribution of FDI to both regions' GDP was 56.3 and 65.1 per cent respectively in 1996. Also, the establishment of the new Pudong SEZ in Shanghai in 1992, and OCCs, EDTZs, and free trade zones (FTZs) in Jiangsu, Zhejiang and Shandong in the late 1980s accelerated the impact of FDI on regional economic development. Because of this fast growth and great contribution of FDI to regional GDP in a few provinces, as shown in table 6, the low contribution of FDI to regional GDP in the central and western regions has been seen as much less central to the restructuring of their economies. The geographical pattern of FDI in China suggests that the integration of foreign capital activities into the new industrial zones in the eastern region has reinforced regional fragmentation, while the contribution of FDI to regional GDP, especially in central and western regions, has been limited.

Nonetheless, fig. 1 shows that regional inequality in the post-Mao period appears contradictory. Some statistics hint that regional output is converging, despite the fact that regional state investment has diverged. Many commentators have tried to describe this apparent contradiction (Lakshimanan and Hua 1987; Lo 1990; Tusi 1991; Lyons 1991; Wei 1993; Huo 1994; Fan

	FDI as % of GDP						
	1985	1987	1989	1991	1993	1995	1996
Eastern	**0.86**	**2.72**	**4.41**	**7.66**	**14.79**	**26.76**	**30.29**
Beijing	1.01	3.92	9.66	15.03	18.07	30.89	34.53
Tianjin	0.93	4.07	4.43	7.80	13.15	34.12	44.57
Hebei	0.06	0.21	0.46	0.97	2.40	5.20	6.27
Liaoning	0.15	0.92	1.72	4.61	8.12	17.04	19.57
Shanghai	0.68	3.21	6.09	8.60	25.50	35.48	41.25
Jiangsu	0.15	0.64	1.36	2.52	9.73	22.71	22.85
Zhejiang	0.19	0.57	0.89	1.61	4.82	9.48	11.07
Fujian	1.82	3.40	6.65	13.01	29.57	52.47	56.30
Shandong	0.17	0.75	1.32	2.41	7.67	14.92	16.14
Guangdong	3.45	10.37	13.87	24.95	35.02	57.27	65.12
Guangxi	n.a	1.91	2.15	2.73	8.59	14.77	15.57
Central	**0.08**	**0.30**	**0.55**	**0.87**	**4.44**	**5.14**	**5.94**
Shanxi	0.01	0.08	0.23	0.33	1.38	2.02	2.57
Inner Mongolia	0.05	0.32	0.38	0.56	1.39	2.27	2.52
Jilin	0.07	0.48	0.59	1.21	3.66	8.18	9.68
Heilongjiang	0.03	0.37	1.09	1.41	2.50	5.75	6.76
Anhui	0.03	0.37	0.51	0.82	2.23	5.28	6.30
Jiangxi	0.15	0.26	0.53	0.75	3.01	5.56	6.19
Henan	0.05	0.20	0.65	0.98	19.00	3.94	4.37
Hubei	0.06	0.33	0.52	1.02	3.72	7.49	7.91
Hunan	0.23	0.32	0.45	0.74	3.09	5.79	7.12
Western	**0.07**	**0.40**	**0.67**	**0.92**	**1.49**	**3.08**	**3.22**
Sichuan	0.14	0.43	0.56	0.98	2.57	5.67	5.60
Guizhou	0.23	0.49	0.71	1.24	1.83	3.45	3.28
Yunnan	0.03	0.21	0.33	0.40	1.22	2.26	2.19
Xizang	0.00	0.00	0.01	0.01	0.00	0.00	0.00
Shaanxi	0.25	2.00	3.71	4.71	5.95	10.55	11.19
Gansu	0.01	0.05	0.10	0.23	0.37	2.65	3.09
Qinghai	0.00	0.00	0.17	0.19	0.35	0.54	0.53
Ningxia	0.00	0.00	0.02	0.06	0.72	1.19	1.28
Xingjiang	0.00	0.45	0.41	0.46	0.39	1.39	1.81

Note: The figure in the table is the degree of contribution of accumulated FDI on GDP. The amount of accumulated FDI is converted from US$ into RMB using official current exchange rates taken from SSB

Source: Calculated from SSB, 1985 to 1997a

Table 6: Trends in the regional contribution of FDI to GDP in China, 1985 to 1996.

	1979	1981	1983	1985	1987	1989	1993	1995	1996	Trend[1]	Industrial Production %[2]	Employ-ment %[3]
Eastern	**211.0**	**214.0**	**201.9**	**195.4**	**189.4**	**184.6**	**187.9**	**181.9**	**179.0**		**17.9**	**3.0**
Beijing	373.9	375.0	362.9	325.8	299.4	299.4	261.7	186.8	167.8	⇓ C	13.3	1.0
Tianjin	407.6	417.5	396.0	365.6	332.2	323.4	290.9	272.3	287.0	⇓ C	15.1	0.4
Hebei	76.9	69.8	67.4	72.3	76.4	76.2	79.6	76.0	88.7	↑ C	17.4	4.4
Liaoning	198.0	201.9	192.1	193.7	188.4	174.2	167.0	148.9	155.2	↓ C	15.0	1.0
Shandong	74.7	74.9	77.1	81.8	88.4	102.7	132.8	119.0	119.1	C↑ D	19.6	5.0
Shanghai	845.4	825.9	734.5	653.9	585.1	521.6	474.3	443.8	407.1	⇓ C	12.7	-0.5
Jiangsu	112.7	127.8	128.1	151.3	170.4	167.0	195.9	204.7	185.3	⇑ D	23.3	1.8
Zhejiang	71.7	93.8	97.8	125.9	141.2	138.3	179.1	229.3	231.6	C ⇑ D	21.8	2.8
Fujian	49.8	52.7	51.6	58.8	64.4	73.6	94.4	105.9	112.2	C ⇑ D	19.0	5.8
Guangdong	72.7	78.5	79.2	86.8	102.6	119.4	152.4	170.0	172.5	C ⇑ D	22.0	5.7
Guangxi	37.4	36.4	34.7	33.1	35.1	34.3	39.2	44.9	43.1	↑ C	17.8	5.8
Central	**69.1**	**68.4**	**71.0**	**70.0**	**70.5**	**66.9**	**58.4**	**61.4**	**65.0**		**16.8**	**3.2**
Shanxi	84.4	79.0	85.4	83.6	77.0	76.7	69.9	69.8	75.4	↓ D	16.4	2.8
Inner Mongolia	53.0	49.6	54.4	49.9	49.5	50.0	44.8	41.9	46.4	↓ D	16.0	2.7
Jilin	98.5	94.4	100.2	102.8	104.3	96.3	77.8	67.5	67.1	↓ D	14.5	2.2
Heilongjiang	125.0	121.4	122.0	108.9	112.1	100.0	73.6	72.9	72.6	⇓ D	13.4	2.0
Anhui	42.6	42.5	45.0	49.6	50.8	50.1	50.8	64.3	68.0	↑ C	19.6	4.6
Jiangxi	44.2	46.9	45.3	48.3	49.4	48.0	45.4	38.9	37.1	↓ D	16.1	3.1
Henan	46.2	46.7	46.7	48.0	50.8	50.6	52.5	63.5	65.6	↑ C	19.5	5.8
Hubei	74.3	81.3	87.3	87.4	87.7	81.0	67.5	87.0	94.7	↑ C	18.7	1.9
Hunan	54.0	54.0	53.1	51.5	53.6	49.4	43.8	47.0	58.2	–	17.4	4.4
Western	**52.5**	**46.0**	**49.0**	**49.1**	**46.9**	**47.7**	**41.2**	**41.3**	**37.4**		**12.9**	**3.0**
Sichuan	44.6	43.7	45.9	48.1	47.3	46.8	48.9	47.9	41.6	–	16.2	3.9
Guizhou	28.4	24.1	29.2	30.5	27.9	27.7	21.5	19.4	20.2	↓ D	15.1	3.4
Yunnan	34.0	34.6	37.9	36.8	34.9	36.4	34.2	37.0	36.4	–	17.5	2.2
Shaanxi	64.4	58.4	59.1	59.0	56.9	55.6	45.4	41.2	39.9	↓ D	11.3	1.8
Gansu	72.7	59.0	58.6	57.0	51.2	50.1	41.1	41.4	38.6	⇓ D	10.6	4.6
Qinghai	60.1	48.6	50.5	49.9	49.4	53.6	38.7	37.7	32.5	↓ D	8.8	0.9
Ningxia	66.2	48.5	53.2	53.3	51.7	55.7	46.2	47.0	44.0	↓ D	11.6	3.8
Xinjiang	49.3	51.1	57.6	58.3	55.8	56.2	53.7	59.1	45.8	–	12.4	3.3
Average	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**		**17.3**	**3.3**

Note 1: Trend of GIO indices from 1979 to 1996, and of FDI indices from 1985 to 1996

↑ increased by more than 5 – stable trend with little change
↓ decreased by more than 5 C converging to national average
⇑ increased by more than 50 D diverging from the national average
⇓ decreased by more than 50

Note 2: Growth rate of RGIO is based on the period from 1978 to 1996
Note 3: The annual growth rate of the number of regional employed is based on the period from 1985 to 1996

Source: Elaborated from Hsueh, Li and Liu, 1993 and SSB, 198 to 1997a

Table 7: Trends of per capita regional gross industrial output, 1979 to 1996.

1995; Ma and Wei 1997). Fan (1995: 427 to 428) suggested that these contradictory findings are the result of variations in analysis. By using different though overlapping time periods, the effect of scale can produce different results, reflecting real divergence in the trends of the different variables. Fan argued, therefore, that there is a need for a finer scale analysis, perhaps an intra-provincial analysis. Analysis of a specific province with significantly higher or lower growth than other provinces is often more revealing than the analysis of overall inequality. However, although this may provide evidence of clear regional inequality within specific provinces, it does not explain the extent to which regions within specific provinces diverge or converge within the Chinese regional economy. Therefore, it is necessary to carry out analysis at both country and city levels, but it is difficult to reveal regional inequality at the city levels due to the paucity of time serial data. Therefore, this section focuses on the extent to which regions have fragmented as a result of inward FDI in the level of inter-provincial inequality analysis, although there are certain limits to analysing the level of regional fragmentation.

There are four general factors that reduced regional inequality during the post-Mao era despite the concentration of economic development strategies on the eastern region (see fig. 1). First, there was economic development across the whole of the eastern region. Of an estimated average national per capita RGIO for 1979, as can be seen in table 7, there were only six provinces that recorded above average per capita RGIO, while 8 provinces were below half the national average. Two decades later, 9 provinces were above the national average per capita regional RGIO in the eastern region, while 11 provinces were less than half the national average. Secondly, the existing developed industrial region has under-

Employment creation and exports by foreign enterprises, in percent

	Employment				Export				
	1993	1994	1995	1996	1992	1993	1994	1995	1996
Eastern	**3.5**	**4.7**	**5.6**	**5.9**	**17.0**	**24.3**	**25.9**	**27.7**	**38.0**
Beijing	3.6	4.9	5.7	6.2	10.6	12.5	12.8	11.9	19.5
Tianjin	2.9	4.8	6.5	6.7	12.1	24.9	33.5	44.8	63.0
Hebei	1.1	1.5	2.0	2.1	5.8	11.1	14.6	13.1	22.7
Liaoning	1.0	1.7	2.3	2.2	18.8	28.0	31.4	33.4	43.5
Shanghai	4.3	4.8	6.4	7.6	14.6	23.5	26.8	30.6	41.5
Jiangsu	2.1	3.7	3.8	4.2	17.9	27.9	29.7	29.2	42.4
Zhejiang	3.0	3.7	4.2	3.9	12.0	20.1	15.9	13.4	23.4
Fujian	10.0	13.8	14.1	15.6	46.9	51.5	47.2	43.7	53.3
Shandong	1.3	2.0	3.6	3.6	9.0	19.1	24.4	28.1	38.5
Guangdong	8.2	9.2	11.4	11.4	31.6	38.2	37.3	43.6	51.2
Guangxi	1.2	1.4	1.8	1.8	8.0	10.2	10.9	13.3	19.0
Central	**0.6**	**0.9**	**1.0**	**1.1**	**2.7**	**6.2**	**7.2**	**8.1**	**12.8**
Shanxi	0.8	1.1	0.6	0.7	0.7	5.9	7.2	6.4	7.2
Jilin	0.7	1.0	1.2	1.4	1.2	4.4	8.5	17.2	24.1
Heilongjiang	0.4	0.8	1.0	1.0	1.0	2.5	3.9	5.4	8.0
Anhui	0.4	0.7	1.1	1.0	4.4	7.8	7.5	7.3	11.9
Jiangxi	0.6	0.7	0.9	0.8	3.1	7.1	6.6	5.2	7.6
Henan	0.6	1.1	1.5	1.6	3.3	7.7	8.7	7.9	15.5
Hubei	0.7	1.0	1.2	1.2	5.6	10.5	10.3	10.3	20.2
Hunan	0.5	0.5	0.8	0.7	2.2	3.9	5.0	5.0	8.0
Western	**0.3**	**0.5**	**0.6**	**0.7**	**2.1**	**3.8**	**4.3**	**4.8**	**9.0**
Sichuan	0.4	0.3	0.7	0.8	3.0	6.5	0.1	4.5	7.3
Guizhou	0.4	0.7	0.7	0.7	2.7	2.4	7.0	7.1	10.8
Yunnan	0.2	0.4	0.7	0.8	2.6	3.4	2.8	2.9	4.2
Tibet	0.0	0.0	0.0	0.0	0.0	2.0	5.6	2.5	10.5
Shaanxi	0.5	0.4	0.4	0.6	3.7	4.6	5.2	4.0	8.5
Gansu	0.5	0.2	0.7	0.6	1.1	6.1	4.5	5.6	8.6
Qinghai	0.1	0.6	0.3	0.3	0.0	0.0	0.0	5.1	7.3
Ningxia	0.4	2.0	1.6	1.6	0.9	3.8	6.0	5.4	12.3
Xinjiang	0.4	0.2	0.6	0.6	5.1	5.5	7.5	5.8	11.1
China	**1.6**	**2.5**	**2.9**	**2.7**	**20.4**	**31.3**	**28.7**	**31.3**	**40.7**

Source: Calculated from SSB, 1993–1997a, and SSB, 1994b

Table 8: Trends in regional employment and export by foreign investors in China.

gone slow growth. Five of the six developed provinces in 1979 were downwardly converging in per capita RGIO. This trend towards convergence could explain the overall decline in interprovincial inequality. In particular, the rapid downward convergence in the three municipalities, Beijing, Shanghai and Tianjin, which constitute the highest level of wealth in the Chinese economy, could alone produce this trend. Thirdly, there has been rapid economic growth in the underdeveloped eastern region. Four of five underdeveloped provinces – Guangdong, Zhejiang, Shandong, and Fujian – have gone through rapid upward divergence in per capita RGIO. This is closely linked to the concentration of new industrial zones in these regions, accompanying significant industrialisation and substantial growth in employment.

What is more, annual average growth rates of 17.3 per cent in total industrial production and 3.3 per cent in employment occurred between 1978 and 1996, and between 1985 and 1996 respectively (table 7). However, the geographical subtext to this improvement is the inequality of the huge steps China has taken towards development. The annual growth rate of industrial production in Beijing, Tianjin and Shanghai has been lower than the national annual average growth rate, accounting for 13.3, 15.1 and 12.7 per cent respectively (table 7). This is the result of the concentration of investment and industrialisation in the emerging new regional economies, although they have still maintained the highest levels of per capita RGIO over other provinces. The growth in industrial production and employment between 1979 and 1996 was strongest in the open regional economies of the southeastern region (Guangdong, Fujian, Zhejiang and Shandong province). For example, in 1979 per capita RGIO in Fujian and Shandong was only 49.8 and 74.7 per cent of the national average respectively. One and a half decades later, these provinces recorded annual average growth rates of 19.0 and 19.6 per cent respectively in 1978 to 1996, all of which helped to create more employment. Also, Guangdong and Zhejiang underwent rapid growth, experiencing annual average growth rates of 22 and 21.8 per cent in 1978 to 1996. It shows that the greatest degree of industrial change has been witnessed in the new regional industrial zones, especially the relatively prebackward regions of the east, where rapid growth in response to foreign capital investment is now inherent.

Regional fragmentation as a result of attracting FDI can be found in the levels of the regional share of the labour force by foreign enterprises and the global integration of the regional economies through export-led foreign enterprise activities. The regional impact of foreign investment on employment is uneven, although the proportion of employment creation by foreign investors is diminutive, accounting for only 2.7 per cent of urban employment in 1996 (table 8). However, the proportion of employment creation as a result of foreign investment in the open coastal regions, where new industrial spaces are concentrated, is significant. For example, in Guangdong and Fujian, where SEZs are located, it accounted for 11.4 and 15.6 per cent of total urban employment in 1996, whereas employment by foreign firms in the inland regions accounted for less than one per cent.

What is more, foreign investment has not only influenced employment, but also foreign trade at the regional level. The influence of FDI on trade has increased rapidly, mirroring the rapid growth in FDI in the early 1990s. Exports by foreign enterprises have had a significant effect on China's export figures, accounting for 40.7 per cent of total Chinese exports in 1996 (table 8). More specifically in Tianjin, Guang-

dong and Fujian provinces, over 50 per cent of total regional exports could be traced to foreign investment, contrasting sharply with the inland regions, where it accounted for less than 10 per cent. This indicates that the integration of new industrial regions in certain eastern coastal regions into the global economy is dominated by the activities of foreign business enterprise. As a result, the degree of global integration in these regions has increased significantly, accompanying the dramatic growth in regional exports. Exports by foreign enterprise have further helped to develop the regional economies in which they are based by earning foreign currency. Inward investment in China and the provision of platforms for foreign firms has promoted these regional economies. However, unevenness in the allocation of foreign funds in these regions and the polarisation of the activities they generate has led to regional fragmentation and uneven regional economic development.

5. Conclusion

This paper has identified the mode of development in the Mao period between 1953 and 1977 as a background of the opening-up policy, and the nature of the economic development model associated with the introduction of inward investment in the post-Mao period since 1978. In particular, it has emphasised new "regional transformation" from regional equality in the Mao era to regional fragmentation in the post-Mao era. After the Mao era, the reform of the Chinese economy has accelerated mainly through opening up, especially to foreign investment. The historical policies of Mao's economic development neglected the institutional arrangements of the region, regional economic structures and production systems, leading to regional isolation and recession. Therefore, this paper argues that the introduction of FDI was a result of the limits of Mao's economic development model.

During the post-Mao era, the increase in FDI has led to a set of regional pathways which underlie the contemporary fragmentation of the Chinese economy. First, there is a set of new industrial regions in which FDI has been concentrated. These regions created new economic structures and institutional arrangements to attract and co-ordinate foreign enterprises. This led to a higher level of industrialisation and improved export-led growth in these regions. This, in turn, has produced a higher level of employment creation with an increasing dependency on the global economy. Secondly, there is a group of existing developed industrial regions such as Tianjin, Shanghai, Beijing and Liaoning Province, whose economic structure has undergone adjustment, often through inward FDI. Finally, there is a large group of marginalized and increasingly peripheral regional economies in the central and the western region which have experienced underdevelopment, the result of adopting the "three economic belts division of labour" in the seventh FYP, which promotes export-led growth in the eastern region. Consequently, the divergent pathways created by FDI related to its strategies of regional development resulted in regional fragmentation, which is the new form of regional inequality.

Along with changes in regional structure towards regional fragmentation, there is a need to consider different strategies for regional development, for the consideration of spatial planning and the task of sustainable development in China. First of all, regional cross-border production networks (CPNs) [7] should be established on the basis of regional characteristics. The establishment of CPNs in Guangdong, Fujian and Shandong Provinces is a good example. According to the statistics of Chinese foreign economic relations and trade (CFERT) (1998), FDI in Shandong is dominated by Korea, accounting for 27.3 per cent of total inward FDI in Shandong, and in Guangdong is dominated by Hong Kong, accounting for over 54.8 per cent in 1996. In Fujian, although FDI from Hong Kong still dominated, the proportion of Taiwanese FDI increased significantly from 14 per cent in 1992 to 33.3 per cent in 1996. The main reasons why a particular country's FDI is concentrated on these regions are (1) geo-governance based on ethnic network [8] between Guangdong/Fujian and Hong Kong/Taiwan, and (2) neighbouring economies based on geographical proximity between Shandong and Korea (see Lee 2001 for the detail discussion of geo-governance and neighbouring economies in China). Secondly, the technology of foreign investors should be integrated into the regional economy on the basis of a regional industrial competitive advantage. The strategy for regional development through the introduction of FDI in China has not based on the regional competitive advantage industry, but focused on the enrichment of technology and management methods. It has resulted in the isolation of foreign investors from the local economy due to the lack of appropriated suppliers and buyers, and therefore the local economy has faced some limitations in receiving key tacit knowledge and technology from foreign investors (Lee 2001). As a result, the establishment of CPNs based on regional characteristics and technology transfer from FDI aimed at the development of regional competitive advantage industry are critical strategies for sustainable regional economic development in the future of China.

Notes

[1] Mao's bias against foreign capital can be seen in his manifesto in the National People's Congress. He stated that "ours is an independent and sovereign socialist state. We have never allowed, nor will we ever allow, foreign capital to invest in our country. We have never joined capitalist countries in exploring our natural resources: nor will we explore other countries' resources. We never did, nor will we ever, embark on joint ventures with foreign capitalists." (cited from Red Flag, Beijing, March, 1977).

[2] It includes Shanghai municipality, Tianjin municipality, Dailian and Qinhuangdao in Liaoning province; Yantai, Qingdao and

Lianyungang in Sandong Province; Nantong and Ningbo in Jiangsu; Wensu in Zhejiang province; Fuzhou in Fujian province; Guangzhou, Zhangjiang and Beihai in Guangdong Province.

[3] The US $ figure for 1996 assumes an exchange rate of RMB 8.27 = US$ 1.

[4] Foreign investment in China began with the establishment of the British East India Company in Guangzhou in 1715. Subsequent expansion concentrated along east coast regions such as Shanghai, Guangzhou, Fuzhou, Xianmen and Ningbo between the 1840s and 1850s as a result of the Opium Wars, resulted in opening several treaty ports. After that, in the twentieth century, foreign investment in China was geographically biased towards Shanghai and North China (Hayter and Han 1998:4–5). It is initial concentration of foreign investment in treaty ports pre-1900 and the lack of interaction between treaty ports and inland (Murphy, 1974), that is said to be responsible for the early phases of regional inequality. This was further exacerbated between 1900 and 1940 by the emphasis on Shanghai and northeastern China.

[5] To give a coefficient of variation (CV), weighted standard deviation is expressed as percentage of the mean (M). As regional units vary significantly in size, standard deviation is weighted by the region's share in the total population (TP). If Pi denotes the population of the ith region (i = 1,2,3,4…n), Yi denotes its per head output or state investment in the ith region, and denotes the average of per head output or state investment, the population-weighted standard deviation (WSD) is given by the equation (Dunford, 1993):

$$WSD = \sqrt{\frac{\sum_{i=1}^{n}(Yi-\bar{Y})^2 \times Pi}{TP}}$$

Therefore, the coefficient of variation is given by the equation:

$$CV = \frac{WSD}{M}$$

[6] "The first front refers to the coastal and border areas that would be the first to face attacks in a war. The third front included the vast interior region, south of the Great Wall and west of the Beijing-Guangzhou railway. The second front is in between." (Ma and Wei, 1997:220).

[7] The definition of "CPNs" is "described as relationships among firms that organise, across national borders, research and development activities, procurement, distribution and design, manufacturing and support services in a given industry." (Borrus, 1997).

[8] The concept of "geo-governance" is introduced by Sum (1997) in the context of cross-border regional modes of growth as providing a mode of co-ordination mediated by a multi-layered network of social relations. It involves a new spatially specific structure of social co-ordination for a more or less coherent mode of growth. Especially, Sum (1997: 160–164) refers to emerging global tendencies which are significant in the triad growth poles and their various modes of regional growth in four aspects: (1) the financial time-space moment of mode of growth structured by the practices of networks of multinational banks and trans-local organisations; (2) industrial and technological time-space moments shaped by the practice of various global networks of multinational production firms in interaction with regional and more locally based firms; (3) commercial time-space moments influenced by the practices of networks of multinational service firms and their regional counterparts; (4) culture time-space shaped by social practices embedded in intra- and/or cross culture networks. Here, I simply adopted geo-governance as culture time-space moments based on ethnic networks.

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