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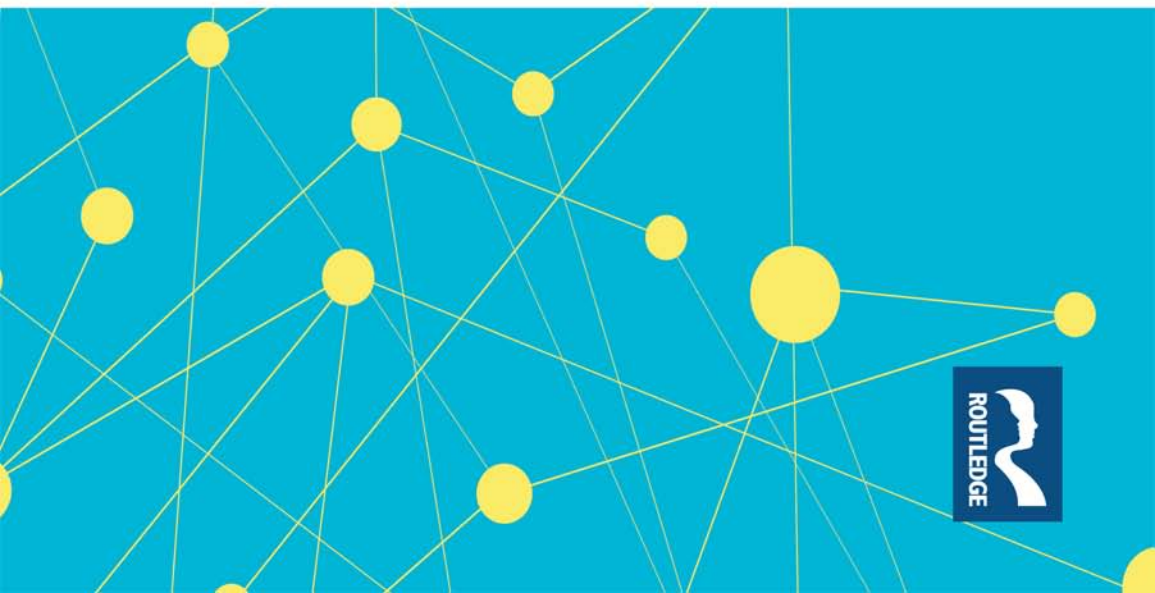
URBANIZATION, REGIONAL DEVELOPMENT AND GOVERNANCE IN CHINA

Jianfa Shen



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Urbanization, Regional Development and Governance in China

Rapid urbanization in China in recent decades and the challenges of social and regional integration and governance have been issues of major concern. This book explores the course of urbanization and development in China over recent decades. It considers a range of issues including urbanization, changing urban and regional systems, regional integration and governance. The book pays particular attention to the economic relations between Hong Kong and mainland China, and how regional development, integration and governance unfold in the Hong Kong–Pearl River Delta region.

Jianfa Shen is a Professor in the Department of Geography and Resource Management and Director of the Research Centre for Urban and Regional Development, Hong Kong Institute of Asia-Pacific Studies, The Chinese University of Hong Kong

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Jianfa Shen

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Abbreviations

AFC	Asian Financial Crisis
AIIB	Asian Infrastructure Investment Bank
BODs	Biochemical oxygen demands
CEPA	Mainland and Hong Kong Closer Economic Partnership Arrangement
DI	Direct investment
EIA	Environmental impact assessment
FCA	Frontier Closed Area
FDI	Foreign direct investment
FYP	Five-year plan
GaWC	Globalization and World Cities Research Network
GDP	Gross domestic product
GNI	Gross national income
GPRD	Greater Pearl River Delta
HKSAR	Hong Kong Special Administrative Region
HZMB	Hong Kong, Zhuhai and Macao Bridge
ICBC	Industrial and Commercial Bank of China
Jing-Jin-Ji	Beijing-Tianjin-Hebei region
LDCs	Less developed countries
MDCs	More developed countries
MLG	Multilevel governance
OCTS	One country two systems
OLGWRD	Office of the Leading Group for Western Region Development
PRD	Pearl River Delta
R&D	Research and development
RLA	Lok Ma Chau river loop area
SAR	Special Administrative Region
SEZ	Special economic zone
SOEs	State-owned enterprises
TEUs	20-foot equivalent units
TNCs	Transnational corporations
TSEs	Time-space envelopes
TVE	Township and village enterprises
WTO	World Trade Organization
YRD	Yangtze River Delta

1 Introduction

Urbanization and development in China

Urbanization and development in China have attracted wide attention (de Blij 2012: 210–240; Friedmann 2005; World Bank and DRC 2014). The book discusses the national context of urbanization and development in Chapters 2 and 3. Given the unique household registration (hukou) system, models of urbanization and development and unique and important roles of local and central governments in China, it has been a great challenge to understand the processes of Chinese urbanization and development, and how different cities and regions in China interact with each other such as Hong Kong and the Pearl River Delta (PRD) region. This book uses Guangdong and Shenzhen to illustrate the change in the urban system and urban development in China. Development in the PRD region has benefited greatly from the inflow of capital and business knowledge from Hong Kong. But the close relation and sometimes tension between Hong Kong and the PRD region, and mainland China in general, have also become a hot issue since 2008. What is the social and economic relation between Hong Kong and Shenzhen? What role do governments play in the regional integration of Hong Kong, Shenzhen and PRD? This book discusses these issues in detail. The book will contribute to the understanding of urbanization, regional development and governance in China.

Recent urban and regional development and transformation are the result of four processes: marketization (market reform), decentralization, urbanization and globalization, which have contributed to the processes of development in China since 1978 (Wei 2001; Shen 2007). The market reform started in the rural areas. Farming households were allocated farmland for production under the "production responsibility system" introduced in the period 1978–1983. Urban reform started in the 1990s by increasing the autonomy of state-owned enterprises (SOEs). Land markets and housing markets have also been nurtured since then. China has transformed from a centrally planned economy to a socialist market economy. Land and housing have been commodified so rapidly that housing prices in Chinese cities have reached extraordinarily high levels, way above the affordable level of urban residents. The current housing bubble definitely affects the life of urban residents and the normal urban, social and economic development.

One important process enabling this marketization is the decentralization process. The central government has decentralized many administrative powers, such as project and investment approvals to provincial, city and other local governments, facilitating more efficient resource allocation and economic activities at local levels. Many cities and local areas have become large and small tigers, actively promoting investment, trading and economic development. It is also noted that centralization has taken place from time to time to regulate regional development and coordination such as regional planning.

Along with marketization and decentralization, urbanization has been considered a positive process since the 1990s in China. Major investments in large cities have been made, and over 200 million rural migrants have moved into urban areas (Shen 2015a). Outstanding examples include the mega projects of Beijing 2008 Olympics, Shanghai Expo 2010, extensive underground networks in Beijing and Shanghai and high-speed railway network of over 20,000 km connecting major Chinese cities. Urbanization has been considered an important means of stimulating economic development. Many cities count on the land revenue for urban finance, resulting in urban expansion and escalating land and housing prices.

China has actively engaged in the globalization process as one of the major development strategies. Open door policy was adopted along with economic reform in 1978, aiming to increase exchange with the outside world, attract foreign investment, and learn advanced technology and management experiences. China has been successful in boosting the inflow of foreign investment and international trade. China has also scaled up its outward investment since 2008. The launch of the "One Belt One Road" initiative in 2013 and the founding of the Asian Infrastructure Investment Bank (AIIB) in 2015 are the important milestones of China's active engagement in globalization.

According to Population Division, Department of Economic and Social Affairs, United Nations (2014: 12), China and India will be the major source of urban population growth from 2014 to 2050. The urban population in the world will increase by 2.5 billion people, including 11.7% from China (292 million) and 16.2% from India (404 million).

The accelerated urbanization and population mobility is a result of two profound changes in the Chinese society: economic decentralization during the transition toward a market economy and deregulation of migration control (Shen 2007). Rural reform and rural development since the 1980s has improved the efficiency of the agricultural sector and released a huge rural labor force. Initially, "leave the land but not the home town" was encouraged, and the rural industrialization and rural urbanization took place based on TVEs (township and village enterprises). Since the 1990s, "leave the land and the home town" has become a popular form of urbanization, and many rural migrants have moved to coastal areas to work in the manufacturing, construction and service sectors. With economic development in rural areas and the source regions of migrants, some migrants have returned to their hometowns or nearby towns and cities, causing a labor shortage in some coastal areas. The settlement intention of these rural migrants has important implications on development and urbanization in China, and some interesting

studies have been conducted (Zhu and Chen 2010). The next section will discuss urbanization and hukou reform in detail.

Urbanization and development are not even processes in China. There has been significant development in eastern China and major cities, resulting in profound urban and regional restructuring. With the transition of the Chinese economy from a highly centralized planned economy to a socialist market economy, the eastern region and major cities have benefited from being one step ahead of economic reforms, a good economic foundation, an inflow of foreign investment and an unbalanced regional development strategy. But coordinated regional development has been emphasized since 1996, and the state has been actively promoting balanced development with particular support to less advanced regions. The most noticeable is the launching of the strategy of developing the western region in 1999. One section will examine the trends of urban and regional restructuring and related studies, especially on regional inequality and three leading economic regions, including Greater Pearl River Delta (GPRD), Yangtze River Delta (YRD) and Beijing-Tianjin-Hebei region (Jing-Jin-Ji).

Along with the growth of major cities, there has also been increasing concern on inter-city competition and cooperation. The GPRD region is an outstanding case of rapid economic growth, spatial restructuring and cross-boundary regional integration. The cross-boundary regional integration and governance in GPRD is dynamic and complicated with the presence of two Special Administrative Regions (SARs) in China, Hong Kong SAR and Macao SAR, under "one country two systems" (OCTS). Another section reviews regional development and governance in GPRD and related studies. An outline of the book is presented in the final section.

Urbanization and hukou reform

China experienced significant underurbanization from the late 1950s to late 1970s (Ran and Berry 1989; Wu and Treiman 2004). The accelerated urbanization process in China has been driven by a massive inflow of rural migrants since the early 1980s (Pannell 1995; Shen 2002a; Shen and Huang 2003; Zhu and Chen 2010). Earlier studies on urbanization in China largely focused either on formal urbanization or small towns (Ma and Lin 1993; Kirkby et al. 2000). The large-scale inflow of rural migrants to large cities and their implications to Chinese urbanization have attracted great attention recently. The main focus has been on the hukou (household registration system) policy, the process of rural to urban migration and the settlement intention of rural migrants (Shen 2002a; Zhu 2000; Zhu and Chen 2010; Chan and Zhang 1999; Fan 2008, 2011). Shen (2015a) examined the question whether the current (informal) urbanization in China is (dis)similar to that of other third-world countries and how to achieve sustainable urbanization (Gilbert 1990; Ginsburg 1991; McGee 1991).

As a fundamental institution of the Chinese society, the hukou system was introduced to control migration nationwide in 1958. Under this system, each person is registered either as "agricultural population" or as "non-agricultural population"

at particular localities. The "non-agricultural population" is usually found in Chinese cities, while the "agricultural population" is mostly found in rural China. A resident should live and work in the place of hukou. The hukou system was relaxed in the early 1980s, and rural migrants were allowed to move into urban areas and be registered as temporary population.

There are two kinds of migrants in China. Permanent migrants refer to those migrants whose hukou have also been transferred to their destination. Temporary migrants refer to those migrants who have left their hukou of origin and mostly are registered as temporary population at their destination. The majority of permanent migrants are non-agricultural population, while temporary migrants are mostly agricultural population (Shen 2006). For simplicity, the increase in non-agricultural population is termed formal urbanization process, while the increase in temporary population and agricultural population is termed informal urbanization process (Zhu 1998; Shen 2006; Shen et al. 2002).

Thus the population at a Chinese city consists of three parts: the local population (further divided into people with local hukou status of non-agricultural population and agricultural population previously), permanent migrants (with local hukou) and temporary migrants (without local hukou) (Shen 2005, 2006, 2015a).

According to recent population censuses (NBS 2011a: 96), the urban population in China more than tripled in the period of 1982–2010, increasing from 210.82 million in 1982 to 458.44 million in 2000 and 665.57 million in 2010. The level of urbanization reached 49.7% in 2010. The temporary migrants contribute to the bulk of the increased urban population and usual residents in Chinese cities based on the census definition.

The formal and informal urbanization can also be indicated by the growth of the urban hukou population and the temporary population. According to an estimation based on census data, the urban non-agricultural population was increased by 147.3% in the period of 1982–2010. The formal urbanization process is strong following the pace of the total urban population growth in China. As a result, the total urban non-agricultural population increased from 144.95 million in 1982 to 309.41 million in 2000 and 358.2 million in 2010 (Shen 2006; PCO and DPES 2012). But there has been even greater increase in the temporary population. It increased from 6.57 million in 1982 to 39.63 million in 1990, 144.39 million (including 35.38 million from the same urban district) in 2000 and 260.94 million (including 39.96 million from the same urban district) in 2010 (PCO and DPES 2012; NBS 2011b). Overall, 66.27% of the urban population had local hukou in China in 2010, down from 75.27% in 2000.

With the increasing number of migrants in Chinese cities, an important question remains as to whether the government should encourage, control or regulate informal but "legal" migration from rural areas. Usually, the rural temporary migrants do not have full rights of employment, housing, education and social welfare at the destination, which has attracted many social and policy concerns (Yang 1993; Shen 1999).

In the late 1990s, various city governments, such as Beijing and Shanghai, still had tight regulations and restrictions on temporary population's access to

certain groups of good occupations (Shen 1999). With the progress of the market economy, various discriminative measures based on hukou have been abolished gradually (Shen 2006). Provisions were made in 1992 for some established rural migrants with stable employment, income and housing to obtain "blue-chop" hukou status with similar education and welfare rights to local hukou status (Wong 1998).

An experiment was started in May 1997 in 450 small towns to grant full permanent resident rights, valid only locally, to migrants who have had stable employment, income and housing for two years (Zhang 1999). Such policies were implemented in all designated towns and urban areas of county-level cities after 1 October 2001 (State Council of China 2000). People can acquire local hukou if they have stable housing or income. Special polices have been adopted by Shanghai to grant local hukou to qualified migrants (Zhang 2010).

The distinction between the hukou statuses of agricultural population and non-agricultural population began to be abolished in Guangdong in 2002 (Shen 2006). Similar policy changes at the national level announced in 2005 caused a debate over whether China is abolishing the hukou system (Chan and Buckingham 2008). This policy benefited people with the hukou category of "agricultural population" in urban areas.

One major development in hukou reform came in November 2011 when the State Council announced new policies of further hukou reform (General Office of State Council 2011). The document spells out the guideline on hukou reform. On the one hand, the document attempts to control excessive conversion of rural land to urban land by offering urban hukou to rural residents in some cities. On the other hand, the document proposes different policies for granting hukou to migrants in different urban areas. Basically, local hukou should be given to people with stable jobs and accommodations, and family members in urban areas of county-level cities and designated towns. For small and medium-sized cities with urban districts, local hukou should be given to people who have stable jobs and accommodations for over three years, and have joined social insurance schemes for certain years, along with their family members. But more rigorous requirement can be imposed for granting local hukou if population pressure exceeds the comprehensive urban carrying capacity. There is no hukou policy change for cities under central administration, vice-provincial-level cities and other large cities. They will implement existing policy for urban hukou and rationally control population size.

As many rural migrants are not likely to get local hukou in large cities, the document also provides basic policy guidelines on rural development and rural migrants. First, the production and living conditions in the rural areas will be improved so that basic public services will be equalized between urban and rural areas. Second, various policies and regulations should be improved to solve the outstanding problems facing rural migrants such as wages, children's education, skill training, public health, housing purchasing and renting, social security, occupational safety and health. New policy measures to be introduced on employment, free education and skilled training in the future should not be linked with the type

of hukou. Third, continuing efforts will be made to form a unified hukou system for urban and rural areas. The resident cards system for temporary population should be gradually implemented.

The hukou policy reform has been moved back and forth over time. No significant change has been made in granting local urban hukou to most migrants from rural areas, especially in prefecture-level cities and large cities. This will remain one significant focus of urban study and urbanization policy in China. The eventual solution will have profound effects on the urbanization process, urban and regional development and governance discussed in this book.

Urban and regional restructuring

China's economic development in the last three decades was largely driven by industrialization, making use of abundant human resources and foreign capital. China had a very weak industry base in 1949. The total value of fixed assets was just over RMB10 billion. Production technology was obsolete, and primitive mining and handcraft industries accounted for 40% of the industry (NBS 1999). In the period from the founding of the People's Republic of China to 1978 before the economic reform, industries emerged from scratch, focusing on heavy industries. After the first three years of recovery and large-scale economic construction during the first five-year plan (FYP) period (1953–1957), 156 important projects were completed with the support of the former Soviet Union. But in the 20 years, from 1958 to 1978, China's industrial development entered a period of fluctuation, with the fastest growth rate of 34.3% in 1969 and the slowest growth rate of −13.8% in 1967. Economic development was unstable during the periods of the Great Leap Forward in 1958 and the Great Cultural Revolution in 1966–1976. Although the industrial growth rate was 8% on average during these years, the internal industrial structure was poor, with a high proportion of heavy industries. There was severe shortage of light industrial products in the country, and people lived on minimum consumption, which also affected economic growth (Shen 2015b).

In the period of economic reform and opening up from 1979 to the present, Chinese economy transformed from a highly centralized planned economy to a socialist market economy. The industrial reforms experienced two stages of power decentralization and profit concession, and institutional innovations. First, a series of reforms on power decentralization and profit concession were implemented among SOEs during the early years of economic reform. SOEs were given autonomous power over their management to some degree, which strengthened their ability for self-development.

Second, the "Law on State Owned Industrial Enterprises of the People's Republic of China" was passed in 1988, symbolizing the beginning of the institutional innovations of industrial enterprises. This law legalized the autonomous power of state-owned industrial enterprises. The Third Plenum of the Fourteenth Central Committee of the Communist Party of China adopted the "Decision of the Central Committee of Communist Party of China on Some Issues Concerning the Establishment of a Socialist Market Economy System" in 1993. Many enterprises

began to operate following the mode of the modern enterprise system. Through a series of institutional innovations, China has established a market economy system, and enterprises have become the main players in the market economy (Shen 2015b).

While China still retains a number of major SOEs, many small SOEs have been privatized. Foreign companies, joint ventures, private companies and family businesses have become important parts of the Chinese economy. After China joined the World Trade Organization (WTO) in 2001, China opened its domestic market, actively attracting foreign investment and engaging in international trading. China's average tariff rate to foreign products fell from 42.9% in 1992 to 15.6% in 2000 and 9.8% in 2010 (Information Office of the State Council 2011). China's ranking in export rose from 31st in 1978 to 1st in 2009–2014. The rank of China's GNI (gross national income) per capita rose from 175th in 1978 to 80th in 2014 (World Bank 2015).

With a weak economy at the beginning of economic reforms, China adopted an unbalanced regional development strategy, the coastal development strategy, in its sixth FYP for 1981–1985. This was followed by a development strategy of three economic belts for 1986–1992, guided by the ladder-step theory. According to this theory, China is divided into three economic belts. The strategy assigns priority of development to the eastern region, locates energy and raw material projects in the central region and makes preparation for developing the western region (Figure 1.1). According to the theory, development will late diffuse to central and western regions like descending the steps from a ladder.

However, the coastal development strategy resulted in increasing regional inequality in China. Thus adjustment of macroregional development strategy was initiated in 1992, and a coordinative development policy was formally adopted in the ninth FYP (1996–2000) and the National Long-Term Goal Plan for 2010, aiming to reduce interregional development gap gradually. The open policy was extended to central cities and all provincial capitals in the inland, excluding Lasa. The state invested heavily in the mining of rich natural resources and the construction of infrastructure in the western region. This strategic change moved further with the launching of the strategy of developing the western region in 1999. The Office of the Leading Group for Western Region Development (OLGWRD) was established in January 2000, and the state invested heavily in the infrastructure, education and ecological construction in the region. Other regional development strategies have also flourished since 2002, such as Revitalizing Northeast China initiated in 2003, Rise of Central China in 2004, Outline of Regional Planning of YRD in 2007–2009, Pan-PRD Regional Development and Cooperation in 2004/2016, Planning Outline of Development and Reform in PRD in 2008 and the Guangdong-Hong Kong-Macao Bay Area in 2017.

In the 11th FYP (2006–2010), harmonious socialist society and coordinated regional development was emphasized. In the 12th FYP (2011–2015) and 13th FYP (2016–2020), scientific development and coordinated regional development, healthy urbanization (12th FYP) and new types of urbanization (13th FYP) were promoted.

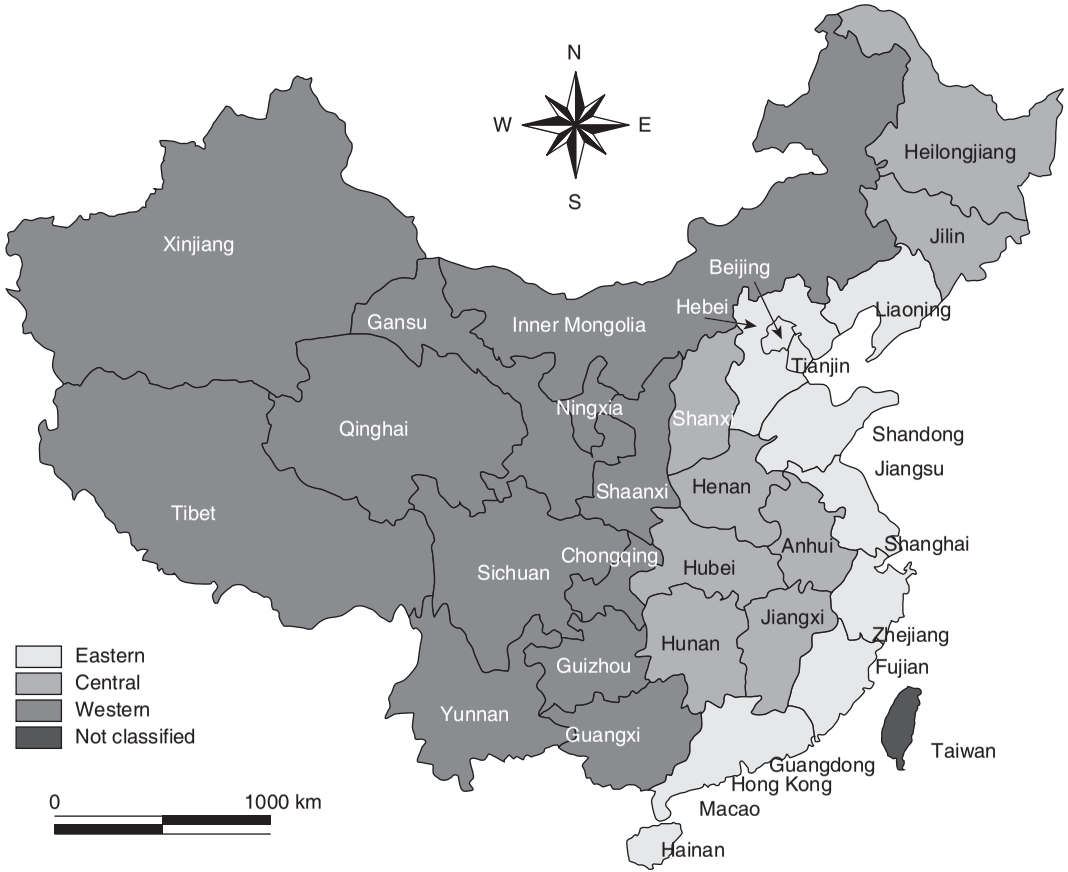

Figure 1.1 Three economic regions in China

Note: Inner Mongolia was included in the central economic belt and Guangxi was included in the eastern economic belt in the development strategy of three economic belts for 1986–1992.

Generally, social inequality and regional inequality have changed over time. The Gini coefficient of China increased from 0.317 in 1978 to 0.479 in 2003, 0.491 in 2008, 0.474 in 2012 and 0.462 in 2015, according to official statistics (Lu 2013; Statista 2017). Using multiple data sources, Xie and Zhou (2014) reported that China's income inequality reached very high levels in the period 2005–2012, with the Gini coefficient in the range of 0.53–50.55. They found that a substantial part of China's high income inequality is due to regional disparities and the rural-urban gap.

According to Fan and Sun (2008) and using the Theil index, there was declining intraregional inequality and increasing interregional inequality among the three regions from 1978 to 2004. Both interregional and intraregional inequalities have declined during 2004–2006, reflecting convergence in the growth rate among provinces and regions. Tables 1.1–1.3 show the changing ranks of provincial regions in terms of gross domestic product (GDP) per capita in the eastern, central and western regions of China. In the eastern region, the ranks of Jiangsu, Zhejiang, Fujian and Shandong rose significantly, while the ranks of Hebei and Liaoning fell greatly in the period 1978–2015. Jiangsu, Zhejiang, Fujian and Shandong benefited from economic development, especially the coastal development strategy (Yeung and Shen 2008a). Liaoning in northeast China suffered a lot in the recent period of economic development, which hosts many SOEs and old heavy industries, facing competition from join ventures, foreign and private enterprises in the coastal region of China. Hebei was a province that lost many development opportunities to Beijing and Tianjin surrounding it. Some attempts have been made in recent years to relocate some functions and industries from Beijing to Hebei. The most outstanding project was the Xiongan New District, as it was the most important national project set up by the central government in April 2017.

In the central region, the ranks of most provinces were stable, while the ranks of Shanxi and Heilongjiang fell greatly. Heilongjiang was one of the three provinces

Table 1.1 Changing ranks of provincial regions in terms of GDP per capita in the eastern region

Year	*1952*	*1978*	*1990*	*2000*	*2010*	*2015*
Beijing	4	2	2	2	2	2
Tianjin	3	3	3	3	3	1
Hebei	21	10	17	11	12	19
Liaoning	6	4	4	8	8	9
Shanghai	2	1	1	1	1	3
Jiangsu	13	12	9	5	4	4
Zhejiang	18	15	7	4	5	5
Fujian	15	18	10	6	10	7
Shandong	25	16	11	9	9	10
Guangdong	10	8	6	7	7	8
Hainan	11	21	18	15	23	18

Data sources: DSC (1999); NBS (1979, 1991, 2001, 2011a, 2016).

Table 1.2 Changing ranks of provincial regions in terms of GDP per capita in the central region

Year	*1952*	*1978*	*1990*	*2000*	*2010*	*2015*
Shanxi	22	14	19	22	18	27
Jilin	9	11	12	14	11	12
Heilongjiang	1	5	5	10	16	20
Anhui	14	30	29	21	26	25
Jiangxi	12	29	28	23	24	24
Henan	20	28	25	18	21	22
Hubei	17	17	14	12	13	13
Hunan	16	13	20	17	20	16

Data sources: DSC (1999); NBS (1979, 1991, 2001, 2011a, 2016).

Table 1.3 Changing ranks of provincial regions in terms of GDP per capita in the western region

Year	*1952*	*1978*	*1990*	*2000*	*2010*	*2015*
Inner Mongolia	8	20	15	16	6	6
Guangxi	29	23	30	27	27	26
Chongqing	23	22	21	19	14	11
Sichuan	26	26	26	24	25	23
Guizhou	31	31	31	31	31	29
Yunnan	24	24	22	28	30	30
Tibet	7	19	24	29	28	28
Shaanxi	30	25	23	26	15	14
Gansu	27	27	27	30	29	31
Qinghai	19	6	13	20	22	17
Ningxia	28	9	16	25	17	15
Xinjiang	5	7	8	13	19	21

Data sources: DSC (1999); NBS (1979, 1991, 2001, 2011a, 2016).

in northeast China that faced many economic problems in the reform period. In the western region, the ranks of Inner Mongolia, Chongqing and Shaanxi rose significantly, while the ranks of Tibet, Qinghai, Ningxia and Xinjiang fell greatly. Inner Mongolia's economy benefited from rapid economic growth, especially the mining industry. Chongqing was one of the four municipalities under the direct administration of the central government with rapid economic development, while Shaanxi had a good economic foundation as well as research and development. Tibet, Qinghai, Ningxia and Xinjiang were located in the sparsely populated areas with poor environment (Yeung and Shen 2004).

Along with the rise of the coastal region in China, three powerful economic regions have emerged in China, and these regions have been further consolidated in the period of 2000–2016. The GPRD rose first in the 1980s with the "one-step ahead" implementation of economic reform and open door policy. Shenzhen's growth as an instant city and special economic zone (SEZ) has been a miracle

(Chen and de'Medici 2010). YRD led by Shanghai took off from the mid-1990s after the development of Pudong New District was launched in 1990. The Jing-Jin-Ji led by Beijing has been growing along with the growth of the national economy, though the growth has taken place mainly in Beijing and Tianjin cities. A rich literature has emerged that studies the planning, development, spatial patterns, urbanization, role of research and development (R&D), economic clusters, transport system, dynamics and mechanism of these regional economies and major cities.

For the Jing-Jin-Ji region, Gu and Shen (2003) examined the changes of urban sociospatial structure in Beijing with the inflow of a large number of migrants. Wei and Yu (2006) examined the role of the state in globalizing Beijing: attracting foreign investment, building a world-class central business district, constructing Zhongguancun as "China's Silicon Valley" and hosting the 2008 Olympic Games. Zhao (2013) analyzed the development potentials and division of functions between different financial centers of Hong Kong, Beijing and Shanghai in China. Gu et al. (2015) demonstrated that a "hybrid" form of planning, combining global concepts and Chinese ideas, is emerging to direct the shape and form of Beijing.

For the YRD region, Yusuf and Wu (2002) examined the national and municipal policies and their implementation that may facilitate Shanghai to become a global city. Wei et al. (2006) assessed the role and significance of foreign investment in the transformation of Shanghai into a global city. Zhang (2006) analyzed the forces affecting the inter-city relationship among cities in the region, and regional alliance was proposed as a solution. The central and local relation is an important aspect of spatial and economic governance in China. Li and Wu (2013) examined the YRD Regional Planning as recentralization from the perspective of state restructuring and changing regional governance. The importance of territorial administrative divisions was highlighted (Li and Wu 2017).

GPRD has been the focus of numerous studies. Tremendous land-use changes have taken place in the region since the economic reform in 1978. Li and Yeh (2004) analyzed land-use changes over two time periods, 1988–1993 and 1993–1997, to demonstrate the effects of land-use policies on the direction and magnitude of landscape change. Gu et al. (2001) examined the trend of regional polarization in the reform period in Guangdong province. They found that some emerging cities, such as Shenzhen, Zhuhai and Zhongshan in the core PRD region, have become strong growth centers. The dominant role of Guangzhou has been weakened in the post-reform period. Local government revenue and savings per capita were found to be the key factors determining the level of local development, confirming the key role of "local state corporatism" in regional development in China. Liao and Wei (2012) found that there has been increasing inequality in Guangdong since the early 2000s, caused by the widening gap between the core region of PRD and the rest of the province (periphery) and between the urban and rural areas. Regional development and dual-track urbanization were studied by Shen (2002b) and Shen et al. (2001, 2002).

There are also comprehensive studies on PRD and Pan-PRD on regional development and governance (Lin 1997; Wong and Shen 2002; Yeung and Shen

2008a). Rapid economic development in PRD has much to do with the local state entrepreneurial governance, with a close relationship between the local state and enterprises. Xue and Wu (2015) revealed the limits of a developmental approach and how this approach led to a severe fiscal crisis, especially at the village level, following the global financial crisis.

The previous studies have revealed significant urbanization, regional development and spatial transformation under the influences of internal and external economic forces and changing modes of regulation and governance. There is a clear tendency of polarized urban development so that major urban centers are dominating the Chinese spatial economy. Table 1.4 shows the indicators of four major cities in mainland China. In terms of population, it was more than doubled in Guangzhou, Shenzhen, Shanghai and Beijing in the period of 1980–2015. Shanghai had the largest population in the whole period, while Shenzhen had the most rapid population growth.

Shanghai had the highest GDP per capita in 1980, well above other cities. By 2015, Shanghai had a smaller GDP per capita than Shenzhen, Guangzhou and

Table 1.4 Demographic and GDP indicators of Guangzhou, Shenzhen, Shanghai, Beijing and China, 1980–2015

Year	*Guangzhou*	*Shenzhen*	*Shanghai*	*Beijing*	*China*
Population (millions)					
1980	5.02	0.33	11.57	9.04	987.05
1990	6.30	1.68	13.32	10.86	1,143.33
2000	9.95	7.01	16.21	13.64	1,267.43
2010	12.71	10.37	23.03	19.62	1,340.91
2015	13.50	11.38	24.15	21.71	13,74.62
GDP per capita (current price, yuan per person)					
1980	1,160	835	2,719	1,544	463
1990	5,418	8,724	5,891	4,635	1,644
2000	25,626	32,800	29,786	24,122	7,858
2010	87,458	94,296	76,074	75,943	29,992
2015	136,188	157,985	103,796	106,497	49,992
Average annual growth rate of GDP (based on fixed price, percent)					
1981–1990	11.8	35.7	7.4	8.8	9.3
1991–2000	16.6	23.2	12.3	11.0	10.3
2001–2005	13.8	16.3	11.9	12.0	9.9
2006–2010	13.5	13.2	11.2	11.4	11.2
2011–2015	10.1	9.6	7.5	7.5	9.7

Data sources: Compiled or calculated using data from BMBS (2006, 2016); GDPBS (1992, 2006); GMSB (2006, 2011, 2016); NBS (2006, 2016); SMSB (2001, 2006, 2011, 2016); SSB (2006); Guangzhou Economic Yearbook Editorial Committee (1983).

Note: All population data refer to usual residents, except the 1980 figure for Guangzhou, which is based on the *hukou* population. The 1990 figure for Guangzhou is from the 1990 census (GDPBS 1992: 132).

Beijing, while its GDP per capita was still 100% more than the national average. This is the result of different economic growth rates among these cities. Shenzhen and Guangzhou led the GDP growth rate in the period of 1981–2005 and 2006–2015, respectively. The GDP growth rate in Shanghai was the lowest in all periods except 1991–2000. The GDP growth rates in all cities slowed down to around 7.5%–10% a year in the period of 2011–2015 as they moved toward quality growth, emphasizing innovation and advanced services.

Regional development and governance

Along with the growth of major cities, there has also been increasing concern over inter-city competition and cooperation, such as the relationship between Shanghai and other cities in YRD (Zhang 2006; Li and Wu 2013; Luo and Shen 2008, 2009). Wu (2016) argued that the Chinese government adopted administrative annexation, spatial plan preparation and regional institution building to cope with regulatory deficit at the regional level.

The GPRD region is an outstanding case, as the region is very complicated in terms of administrative systems. It has nine cities from the Guangdong province, plus Hong Kong SAR and Macao SAR. "One country, two systems" have been introduced between Hong Kong and mainland China, and Macao and mainland China. Hong Kong and Macao are separated from PRD by clear boundaries regulated by official immigration control and custom procedures.

The economic, social and political relations between Hong Kong and mainland and Shenzhen in particular are outstanding cases of cross-boundary regional integration (Chu et al. 2002; Cheung 2005; Yang 2005; Shen and Luo 2013) that have been taking place in Europe and America. According to Ratti (1993), a border has two functions: as a dividing line with a separation function and as a contact zone for exchange and cooperation. With the emergence of a cross-border production system, its function as a contact zone will be enhanced. The main hypothesis on cross-border regions proposed by Brunet-Jailly (2005) is, if each analytical lens enhances or complements one another, what emerges is a borderland region that is culturally emerging and is integrating. But Brunet-Jailly also pointed out that a borderland that is economically, politically and culturally emerging, and integrating is an ideal case. Barter (2006) argued that regional economic integration and cooperation, not to say political and social integration, have never been a smooth process. Sparrow (2001) concluded that the relationship between San Diego-Tijuana is driven by factors of economics not friendship or trust. Following over 100 years as neighbors, the two cities are still learning to coexist with each other. Similar competition tension exists in the development of airports, container ports, convention centers and cross-boundary infrastructure in the Hong Kong and PRD regions (Shen 2008).

In GPRD, Hong Kong has been a leading world city and has played an important role in the development of the PRD region since 1978 via massive investment and trade. During the period 1997–2003, Hong Kong's economy suffered from the Asia financial crisis, while PRD cities caught up with Hong Kong quickly

in terms of GDP per capita and GDP (Figures 1.2 and 1.3). In the 1980s and 1990s, GDP per capita in Hong Kong was far above that of mainland cities. But Shenzhen's GDP per capita as a percentage of Hong Kong increased from 11.4% to 59.8% in 1997–2015. By 2015, GDP per capita in Shenzhen and Hong Kong were US$21,866 and US$42,433, respectively. In terms of GDP, Hong Kong was overtaken by Shanghai in 2009 and by Beijing in 2012. Guangzhou's GDP as a percentage of Hong Kong's GDP increased from 11.5% to 93.9% in 1997–2015. Shenzhen's GDP as a percentage of Hong Kong's GDP increased from 8.9% to 90.8% in 1997–2015

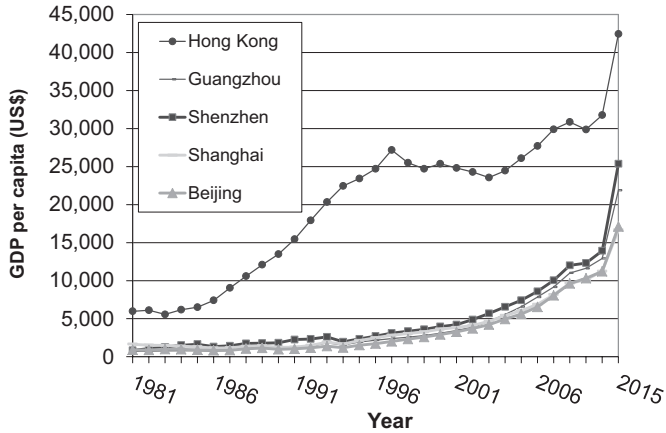

Figure 1.2 GDP per capita in Hong Kong and four main cities in mainland China 1981–2015

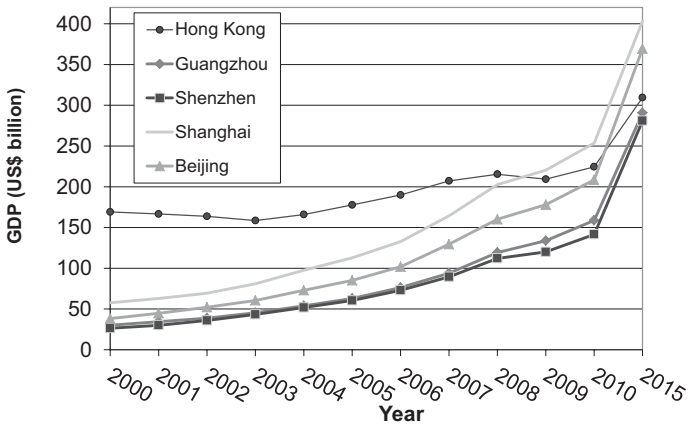

Figure 1.3 GDP in Hong Kong and four main cities in mainland China 2000–2015

Hong Kong was a British colony before 1997, and it was returned to China peacefully in 1997 according to the Sino–British Joint Declaration signed in 1984. While close economic relations have been building up since 1978 when China adopted its reform and open door policy, the political relationship between Hong Kong and mainland China was weak. Before 1997, many Hong Kong people had little confidence in China, which is a socialist country ruled by the Communist Party of China. Even after 1997, some officials of the Hong Kong SAR government (many also served in the former colonial government) and others did not want to develop a close social and political relationship with mainland China. They were also not enthusiastic about enhancing economic integration, while the chief executives were keen on close economic integration.

The situation was changed during 2003–2008 when the Chinese central government rolled out a series of policies to stimulate Hong Kong's economy, including the CEPA (Mainland and Hong Kong Closer Economic Partnership Arrangement) and the "individual visit scheme" for mainland tourists to visit Hong Kong (Yeung and Shen 2008b). The year 2008 was the peak time that Hong Kong people and society were in favor of close economic integration and had the most positive perception of the central government.

The tension between some stakeholders in Hong Kong and mainland China has increased significantly because of three significant developments since 2009. First, tens of thousands of mainland women came to Hong Kong to give birth, as their children would get the right of abode in Hong Kong according to the existing ruling of Hong Kong's Court of Final Appeal in 2001. Some Hong Kong women had difficulties finding hospital beds to give birth. Second, a new policy was introduced in April 2009 allowing Shenzhen residents with local hukou to apply for multiple-entry travel permits to visit Hong Kong. Third, the high number of shoppers from the mainland resulted in a shortage of baby formula in Hong Kong. Some Hong Kong residents demonstrated on the streets and questioned the capacity of Hong Kong to accommodate large numbers of mainland tourists (40.75 million in 2013 [CSD 2016]).

The HKSAR government has taken measures to solve these problems. First, it set up a quota for mainland women coming to give birth from 2010 to 2012, and it set the number to zero for 2013. Second, it introduced a new regulation on 1 March 2013 to limit the export of baby formulas to a maximum of 1.8 kg per each individual in a period of 24 hours. Third, it also asked the central government to change the travel policy for Shenzhen residents. A new travel permit was adopted and announced by the central government on 14 April 2015 with immediate effect. A Shenzhen resident with the new travel permit can only travel to Hong Kong once a week. The number of mainland visitors to Hong Kong declined by 3.0% in 2015 and 6.7% in 2016. It fell from 47.25 million in 2014 to 42.78 million in 2016 (CSD 2016; Hong Kong Tourism Board 2017).

The situation has been further complicated by the political struggle on the 2014–2015 Hong Kong electoral reform regarding the universal suffrage election arrangement for the chief executive and the subsequent "occupying Central" event during 28 September to 15 December 2014. The Legislative Council rejected the

government electoral reform proposal on 18 June 2015. A new chief executive was elected on 26 March 2017, using the previous method via an election committee of 1,200 members, for the term 2017–2022. The situation was complicated by the emergence of radical groups and protesters, some of them seeking Hong Kong independence. Hong Kong society has been polarized politically, and the new government is attempting to reunite various political and social groups that may have different standings on political, economic and social relationships with PRD and mainland China. These conditions will certainly have major implications for Hong Kong's role and development in the new context of the Guangdong-Hong Kong-Macao Bay Area and the One Belt One Road initiative proposed by the Chinese government.

Outline of the book

Using urbanization, development and governance as key links, this book systematically studies the critical issues for understanding the rapid urbanization in China: the role of state and scale in urbanization, the new process of dual-track urbanization, the changing regional urban systems and sustainable urban development, and the regional development, integration and governance in the Hong Kong–PRD region. The theoretical perspectives of the scale theory of social-spatial transformation, dual-track urbanization, time-space envelopes (TSEs) and theory of borderland studies are applied to the Chinese cases.

The book has nine chapters. Chapters 1 and 9 are the introduction and conclusion. Chapter 2 discusses the scale, state and urban transformation in China, and Chapter 3 introduces the conceptual model of dual-track urbanization for China, providing the national context of urbanization and development in South China. Chapter 4 is a provincial case study of the spatial analysis of the urban system in Guangdong. Chapter 5 is a city case study of urban growth and sustainable development in Shenzhen city. Chapter 6 studies the economic relations between Hong Kong and mainland China under globalization. Chapter 7 examines the cross-border urban governance in Hong Kong. Chapter 8 studies the cross-boundary integration in Hong Kong and Shenzhen. The details of each chapter are introduced in the following.

Chapter 1 provides an overview and background on the following aspects: urbanization and development in China, urbanization and hukou reform, urban and regional restructuring and regional development and governance.

Multiscalar in perspective, Chapter 2 examines the urban spatial transformation and reconfiguration as rescaling and territorialization processes. Globalization has resulted in the change of scalar relations of the state and the city in the contemporary world. The scale theory is developed mainly in the context of capitalist societies. Using a general sociospatial theory, Chapter 2 argues that the general principle of scale theory is also relevant to transitional socialist economies, where scalar configuration has been rearticulated by liberalization and globalization. It is adopted to describe the profound transformations of the state and the city in China.

Chapter 3 examines dual-track urbanization in China, consisting of spontaneous urbanization and state-sponsored urbanization. The chapter first develops a consistent interpretive framework of urbanization in pre-reform and post-reform China. The key components in the framework include the mode of industrialization, central and local states, urban and rural economies, urban and rural citizens and the hukou system and global linkages. Dynamic changes in these components and their interactions drive the urbanization process in China. The chapter then examines how each of the two tracks of urbanization contributed to the urbanization process that occurred in China between 1982 and 2000.

Chapter 4 attempts to reveal the emerging urban system hierarchy in the 1990s in Guangdong province under a socialist market economy using rank-size distribution as a yardstick. As there was substantial discrepancy among the rank-size distributions of cities in terms of population and economic indicators especially because of the existence of "temporary population" and the policy of "designating a whole county as a city," the urban system in Guangdong province was analyzed using demographic and economic indicators. The significant role of economic development in urban growth was also identified through cross-sectional comparison and correlation analysis of time-series data on economic and urban indicators.

Chapter 5 examines the rapid urban growth in the city of Shenzhen with a particular focus on urban economic growth, population growth, agriculture and environmental changes. With the rapid expansion of population and the built-up area, there is increasing demand for the provision of urban infrastructure. The volume of environmental pollution is also increasing. The problems of environmental pollution and the negative effect on agriculture are also examined in the chapter. Shenzhen's agriculture has undergone a transition from general agriculture to the rise and eventual decline of suburban agriculture. Shenzhen's case indicates that it is possible to move toward balanced development in social, economic and environmental dimensions, even for new large cities such as Shenzhen.

Chapter 6 presents an array of statistical data that place Hong Kong among the world's leading financial, foreign trade and air cargo handling centers. The chapter's main focus is the economic relationship with mainland China, which has grown and expanded since the change of the city's sovereignty in 1997. Included in the presentation is a review of economic integration before and after the handover by the UK to China, the pattern of cross-border investments and foreign trade, the growth of the logistics and tourism industries and the challenges posed by changing economic relations, partly because of the rapid development of Hong Kong's hinterland.

The rapid development in the Hong Kong–PRD city-region has taken place alongside complicated cross-border governance. In Chapter 7, the framework of TSEs is adopted for a study of cross-border governance in Hong Kong, especially in the role of the state – i.e., the Hong Kong government – in cross-border urban governance. This chapter argues that tension-free regional integration has never existed because of a complex governance network. The shift from ''cross-border protectionism'' to a ''cross-border free trade zone'' in Hong Kong's cross-border

urban governance since 2001 is a result of the rearticulation of the state cutting through the geoeconomic and geopolitical TSEs.

The integration of cross-border regions involves at least three dimensions – economic integration, institutional integration and social integration. The empirical focus of Chapter 8 is the cross-boundary integration of Hong Kong and Shenzhen, two major cities that have played a pivotal role in China's urbanization, development and internationalization over the last three decades. It is revealed that economic integration prevails in the Hong Kong–Shenzhen region. Economic integration has necessitated the institutional integration, which in turn attempts to facilitate economic integration. But both economic and institutional integration cannot change the pace of social integration. Social integration lags significantly behind economic and institutional integration. Brunet-Jailly's main hypothesis of the theory of borderland studies is only partially valid in the Hong Kong–Shenzhen region. The chapter concludes that Hong Kong–Shenzhen has not yet become a twin city.

Chapter 9 revisits the key empirical findings and theoretical insights. Prospectus of urbanization, regional development and governance in China are discussed.

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2 Scale, state and the urban transformation in post-reform China[1]

Introduction

There is a hierarchical administrative system in China from the top of central government (State Council) down to provincial, city, county and town/township governments. Before 1978, the system was highly centralized. Since the early 1980s, there has been a clear tendency toward decentralization. Various scales and forms of state activity have been rearticulated through a complicated process involving twin issues of governance and scale.

Such changes are not unique in China. They are parallel to widespread transitions taking place in North American and Western European cities and regions, but possibly because of different processes (Ohmae 1995; Lauria 1997; Brenner 1999). The triple processes in Western countries, denationalization, destatization and internationalization, have resulted in the rescaling of regulatory codes, norms and institutions downward or upward (Macleod and Goodwin 1999; Swyngedouw 1997: 156; Storper 1997). The transition process from state socialism to market economy in China involves three processes: decentralization, marketization and globalization (Wei 2001a).

The scale theory has been developed to describe the scalar organization of capitalism. It is argued that the general principle of scale theory also applies to socialist transitional economies where scalar configuration has been rearticulated by liberalization and globalization.

The relation between the central and local governments in China has been the focus of some studies. Most studies focused on the central-local fiscal relationships such as those between the central and provincial governments and those between the provincial and city/county governments (Wong et al. 1995; Lam 1999; Hsu 2000). The rising local state has been described with the notions of "local state corporatism" and "local governments as industrial firms" (Oi 1992; Walder 1995).

Urban transformation in transitional China has been the focus of previous studies (Wu 1997; Fan 1999; Ma 2002; Pannell 2002; Shen 2004a, 2004b, 2006; Shen, Feng and Wong 2006). Zhu (1999) cautiously used concepts of urban regime and urban growth machine in an analysis of the urban dynamics in China. He found that an informal local growth coalition is formed between local states and

enterprises. Zhang (2002) formally adopted the urban regime theory in the study of Shanghai. He concluded that the concepts of urban governance work well with the economic dimension but differ from the political dimension of urban governance because of a strong government and tight social control.

The explanation power of the urban growth machine and urban regime theory are considered internalistic paradigms of urban politics (Macleod and Goodwin 1999: 508). The model of the urban growth machine is also criticized for overemphasizing the role of property in economic development. Indeed, in terms of scalar analysis, the global forces, the central state and the local actors in a city should be taken into consideration because of the relativization of scale (Jessop 2002: 27).

Urban space reorganization has become an essential measure of urbanization in China (Wang 2001). Since 1978, the urban space in China has been expanded/reorganized tremendously with the designation of new cities and the constant adjustment of city boundaries. The role and function of the state have been contested and reconfigured, consequently, at various spatial levels.

Previous studies concerning the central-local relations, the rising of "local state corporatism" and the application of the "urban growth machine" and "urban regime theory" are relevant in the explanation of urban spatial transformations in China. But few studies have examined the urban transformation in post-reform China as rescaling and territorialization processes (Shen 2003; Ma 2005). Ma (2005) adopted the scale approach in his study on the urban administrative restructuring as a rescaling process of the state power. He emphasized the importance of the administrative status of a city. But further efforts are needed to theorize the rescaling process in the context of urban transformation and urban space reorganization in China. Although many studies have been done to describe the urban changes in China, largely in non-scalar languages (Chan and Zhao 2002; Ma 2002; Shen 2004a, 2004b), it is insightful to reexamine these changes from the perspective of the scale theory.

The scale theory is adopted to describe the profound transformations of the state and the city in China in this chapter. It examines the urban spatial transformation and reconfiguration as rescaling and territorialization processes. The chapter contributes to theorizing the urban space reorganization as a politically constructed process. The empirical analysis also contributes to the theoretical debates on the central-local relations and the role of the state in the background of China's reforms, globalization, marketization and decentralization.

Scale theory and sociospatial transformation

There have been keen debates on globalization. Some argued that the world is becoming placeless and no longer subject to territorially based states and institutions (Ohmae 1995). However, Storper (1997) did not agree that the locus of control in the development process is being passed from territorialized institutions such as state to deterritorialized institutions. There is continued territorial specificity in development patterns.

The processes of deterritorialization or territorialization have important implications on the state and governance at various spatial scales. The key concepts in this debate of globalization and sociospatial transformation are scale, territorialization, deterritorialization and rescaling of scalar relations. Several leading scholars such as Smith (1992, 2000), Storper (1997) and Brenner (1999, 2001) have attempted to clarify these concepts.

According to Smith (2000: 725), "Specific geographical scales can be conceived as platforms for specific kinds of social activity." Smith recognized "a loose hierarchy of geographical scales, from that of the BODY, the home and the COMMUNITY through the local, regional, national and global." The concern about scale is on the "production of scale" rather than the "scale" itself. This idea is rooted in Lefebvre's (1990) "production of space." Although scale is only a spatial metric, the meanings of "scale" and "space" in the two earlier phrases are essentially close. Such usage often leads to the confusion in the meanings of "scale" and "space."

The notion of the "politics of scale" is introduced by Smith (1992) to theorize the role of geographical scales as frameworks for a broad range of social activities and struggles. The production and construction of geographical scale involve a number of processes responsible for sociospatial transformations. Most important of all are the scaling and rescaling processes. First, scaling refers to "the establishment of geographical differences according to a metric of scales – etches a certain order of empowerment and containment into the geographical landscape" (Smith 2000: 726). It is a means of both containment and empowerment.

Second, rescaling refers to the shifting in the power and control over scales. It involves two or more scales. But it is often named after one scale that is another source of confusion in the scaling studies. For example, according to Brenner (1999: 441), rescaling the state means reterritorializing state power onto multiple spatial scales that do not converge with one another on the national scale. In this case, the state power is scaled down, while the power of urban scale and global scale are scaled up.

Indeed, territorialization and de-territorialization are involved simultaneously in such a rescaling process. A general term for such processes may be rescaling of territoriality (Brenner 1999: 435). In China, the introduction of the "system of city governing county" is an example of rescaling of territoriality or rescaling of cities precisely.

Territorialization is a concept related to economic organization in the discussion of globalization. According to Storper (1997: 21),

> An activity is fully territorialized when its economic viability is rooted in assets (including practices and relations) that are not available in many other places and that cannot easily or rapidly be created or imitated in places that lack them.

Such territorialization of economic activities determines the ability of territorially bounded states and institutions to bargain with transnational corporations (TNCs).

The concept of territorialization is also applicable to cities and states that are considered forms of territorial organization (Brenner 1999). In addition to territorially bounded practices and relations, one important and explicit form of de- and reterritorialization is the shrinking or expansion of physical space. This includes the urban space reorganization that is the focus of this chapter.

The third process of the production of scale is the interaction of scales. For example, "jumping scale" refers to the case that political power established at one geographical scale is expanded to another scale (Smith 2000). The abolishment of metropolitan governments by the Thatcher government is one such example. "Penetrating scale" refers to the case that acts in one particular scale attempt to exert their influence in other scales. Rather than a result of rescaling cities (Brenner 1999), "world city" formation may be regarded as an example of the penetration of global forces into the urban scale. It is a process that takes place within the city boundary. "Conquest scale" refers to the case in which actors attempt to position themselves in a particular scale. Struggling to organize a labor union at the local, regional or national level is one such example (Smith 2000). "Overlapping of scales" refers to the case that the lower scale has certain power and property over the upper scale. For example, a vice-provincial city in China is under the administration of a province, but it also possesses much provincial-level power.

The fourth process of the production of scale is the territorialization taking place at the same scale. This issue has been neglected because of overwhelming attention to scalar relations. Sociospatial transformation within the same scale is also significant in the contemporary world. This is especially so in the case of China, where locals have become the center of development. Their realignment and spatial reconfiguration have long-term implications for regional and local development.

The popular scale theory has also been subject to serious criticism. Marston et al. (2005) argued that the hierarchical concept of scale has many problems, and that hierarchical scale can be abandoned and replaced by a flat ontology. However, scalar concepts can be considered as heuristic abstractions, and scholars should pay attention to the strategic interplay of scalar and non-scalar processes (Jonas 2006). Scales are not fixed geographical structures. They are dynamic and constituted through strategic actions and struggles (Swyngedouw 1997). Thus scale approach is a useful framework to understand sociospatial transformation in China (Shen 2003; Ma 2005).

While many scholars argue that the urbanization process is unique in China (French and Hamilton 1979; Ma 2002), some scholars believe that Chinese cities and Western cities share similarities in the broad urbanization process, and the concepts and theories of urban change developed in the Western context are also relevant to Chinese cities (Wu 1997; Zhu 1999; Zhang 2002). Nevertheless, the specific ways of the rescaling of governance will vary within and between nations, regions and their respective contexts (Macleod and Goodwin 1999: 515). Thus much theoretically informed empirical research is needed to understand the complex articulation of social, economic and political forces through space and over time.

Rescaling the central and local states

Because of globalization and cross-border investment, competition between nations has become competition between cities (Brenner 1999; Zhu 1999: 535; Shen 2004a; So and Shen 2004). In the Western countries, local government has emerged as a major actor in urban restructuring. The concept of "urban regimes" has been used to describe local growth coalitions in American cities (Lauria 1997).

Without the direct influence of the American experience, the urban government has assumed an increasing role in local development in China because of tremendous changes in the political economy and governance since 1978. There is a hierarchical administrative system in China from the top of the central government down to provincial, city, county and town/township governments. Before 1978, the system was highly centralized, meaning that the central government had overwhelming power in the decision making of the society through its sectoral controls from the central to local, and even enterprises and rural collectives.

Since the early 1980s, there has been a clear tendency of decentralization initiated and settled by the intense interaction of central and local governments, SOEs (state owned enterprises), non-SOE enterprises and residents. Various scales and forms of state activity have been rearticulated, involving twin issues of governance and scale. The four scales of concern are the national scale, the local scale (especially cities), enterprises and residents (Figure 2.1). In China, cities have four different kinds of status with different political and economic power, including county-level cities, prefecture-level cities, vice-provincial-level cities and provincial-level cities. They can be considered as four sublocal scales. A city's status can be downgraded or upgraded in the process of urban space reorganization. This chapter will focus on the rescaling of the central and local states at national and urban scales, as well as urban spatial transformation: changing city scales and urban territorialization. Enterprises and residents are two independent scales, but they will not be examined in detail in this chapter. The central state, local state, enterprises and residents are also important actors in urban governance.

The open door policy can be regarded as a response to the globalization trend to bring China back into the world economy. With the entry of China into WTO (World Trade Organization), external forces of globalization will increasingly drive institutional reforms. For example, China has been reforming its administrative system to make its economic regulation consistent with WTO rules since 2001. Many government regulations and administrative rules inconsistent with WTO will be abolished. It is estimated that the central government has about 20,000 kinds of administrative power to approve various projects and applications; a provincial government has over 10,000 kinds of power, and the urban government of a prefecture-level city has over 5,000–6,000 kinds of power. More than 11,000 kinds of power of the central government have been reviewed to simplify bureaucratic procedures according to a report in *Mingpao Daily* (2002). By September 2006, the State Council cancelled the approval requirement for 1,795 items, accounting for about 50% of the items that need approval of State Council previously. 31 provincial governments and 58 ministries and bureaus of the State

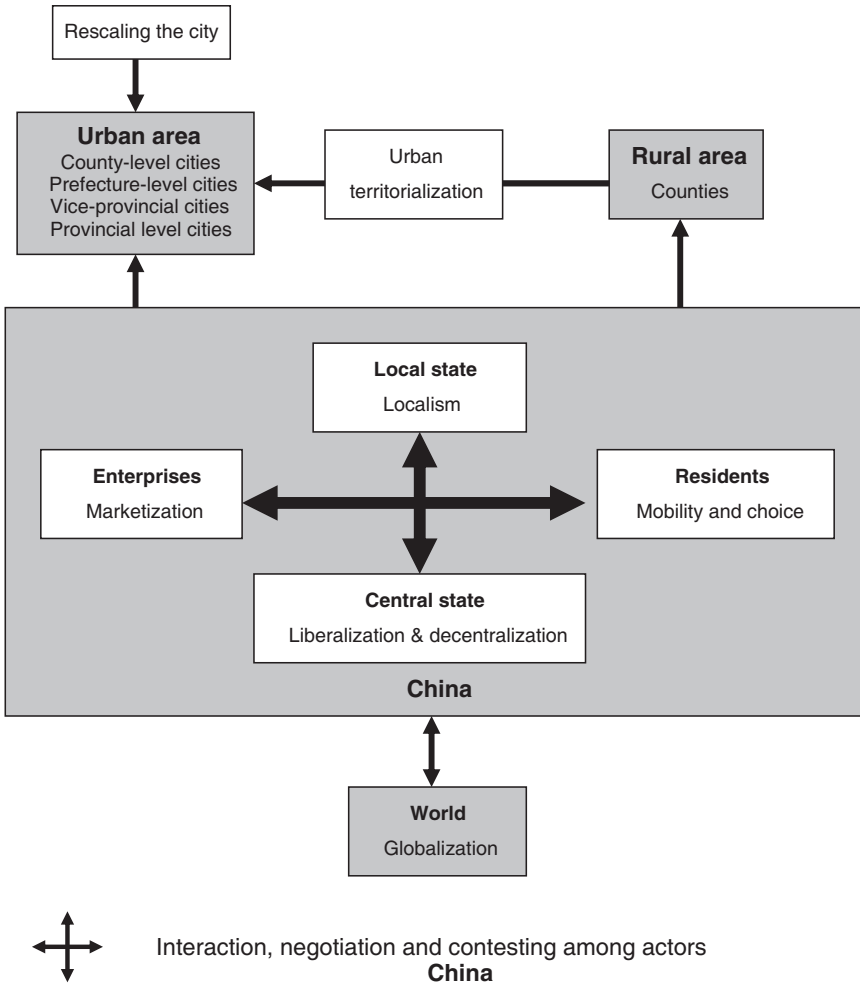

Figure 2.1 Rescaling of political economy in post-reform China

Council also assessed 25,797 approval items. Some 8,666 items were cancelled and 1,841 items were adjusted (Law Office of State Council 2006).

The impact of globalization on the restructuring of Chinese cities has been examined in detail recently and is not the focus of this chapter (Wei et al. 2006; Wu 2006; Hsing 2006; Cook 2006; Batisse et al. 2006). Apparently, much has been going on in the politics and struggle between the global and national scales such as regulating the inflow of global capital, bidding to host international events, joining of WTO and the import of natural resources and energy.

Economic reforms have been set in motion to reconfigure the economic, social and institutional organization of the country. The decentralization and marketization processes are perhaps the most influential in the rescaling of political economy and governance in China. The central planning system has been gradually replaced by the market mechanisms in China. By 1998, most industrial and agricultural production was based on the market. The share of industrial production based on the state plan in the total value of industrial output was reduced from 70% in 1979 to 4.6% in 1998. The share of goods with prices under state regulation in the total value of traded goods reduced from over 95% in 1979 to only 7.2% in 1998 (Wang et al. 1998). The central state has also been reconfigured to cope with the emerging market economy. Through four major reforms in 1982, 1988, 1993 and 1998, the number of ministries and commissions in the State Council was reduced from 100 before 1982 to 53 in 1998 (Wang et al. 1998).

During the rescaling process, the local states gained great autonomy in fiscal operation, financing, investment and enterprise administration (Zhang 2002). Oi (1992) argued that local states have taken control of economic development, giving rise to "local state corporatism."

Because of intensive intervention of the state in Chinese economy under both state socialism and market socialism, it is useful to examine how the power has been rescaled between central and local states. The central-local relations involve the division and sharing of power on policy matters, personnel matters and fiscal matters (Chien and Gordon 2008). The power related to fiscal matters is very important. The fiscal arrangement between the central and local governments is also closely related to policy matters.

A highly centralized fiscal system prevailed in China under state socialism before 1978 (Lu and Sit 1997). The most extreme of central control was in the period 1949–1953 when the share of central government in the total fiscal revenue was over 44%. Various forms of central and local fiscal arrangement were tried in the 1970s, and the share of central fiscal revenue was reduced to only 13% in 1976. The central government faced a poor fiscal situation.

A fiscal reform was started in 1980 in China to reduce the central state's own fiscal burden, to make local governments fiscally self-sufficient and to provide incentives to local governments to stimulate economic development (Oi 1992). There have been four major reforms in the fiscal system (Chan et al. 2002). A fiscal contracting system between the central and provincial governments was introduced and improved continuously in the first three reforms in the period 1980–1989.

Under the fiscal contracting system, a fiscal contract was signed between the central state and each provincial government, between each provincial government and each of its prefecture-level administrations or city governments (Oi 1992; Wong et al. 1995: 103; Chan et al. 2002: 53). For example, the fiscal contract stipulated that the revenue to be turned over to the provincial government of Guangdong should increase 7% a year for Foshan, Jiangmen, Shaoguan and Maoming, and 6% for Zhanjiang beginning in 1985 (Lam 1999).

In the fourth reform, a tax assignment system was formally introduced in 1994. Different kinds of taxes were designated as revenue for central or local government. The power of local government to offer tax concessions was reduced, and the revenue of the central government increased. After the reform, the share of central government in fiscal revenue increased from 22% in 1993 to 55.7% in 1994.

Local governments become dependent on the revenue transfer from the central government. Many local governments are keen to bargain with the central government for more revenue support and more investment projects. The local governments have also been induced to collect tax more seriously for local fiscal balance. In recent years, all county-level governments in Jiangxi, Shanxi, Anhui and Shandong achieved fiscal balance (Wang et al. 1998: 63).

Stimulating economic growth and expanding the revenue base have become two key goals of the local state under an aggressive pro-growth development strategy. According to a survey of 56 officials in 11 cities in Jiangsu in 2000, increasing economic growth rate and local fiscal revenue were top two focuses of local governments and the top-two motivations of investment by local governments (Table 2.1). They are keen to invest in and serve the firms that are the sources of revenue while doing little to provide public facilities such as education and medical services to residents, especially in newly developed residential areas (DRE and JICA 2001: 196). In 1999, the fiscal expenditure of local governments on firms was RMB60 billion, while that on urban maintenance and construction was only RMB47 billion in China (186).

To capture financial gains within their boundary, local states have adopted a number of strategies. First, the local states are keen to improve their infrastructure such as highways for local development (Shen 2002). Second, the local states are keen to attract foreign investment by offering tax concessions and other policy incentives. Cheap land has been offered to foreign investors (Zhu 1999: 541).

Third, they have developed close relations with local firms by direct or indirect participation and intervention. An informal local growth coalition is formed between local state and enterprises. Under "soft budget constraints," SOEs often get financial subsidies and even subsidized land supply to keep them surviving. This tendency indeed is in opposite to the central state's reform agenda to separate

Table 2.1 The focus of local governments

Focus	*%*
Increase economic growth rate	77
Increase local fiscal revenue	53
Create living environment	43
Improve investment environment	37
Improve social security	17
Increase employment	15

Data source: DRE and JICA (2001: 185). Based on a survey of 56 officials in 11 cities in Jiangsu in Aug. 2000.

the state from SOEs, while, in 1992, prohibiting government departments and officials from running any businesses (Editorial Committee 1995: 54–55). It is likely that the local growth coalition in China has a long way to move closer to the urban growth coalition in Western countries in terms of sound legal foundation and wide community participation.

The scaling of central and local states has major implications on the relations of local states in the same scale. Under the protection of local government, many similar firms have been established to produce goods for the local market resulting in surplus production capacity. In China, color TV firms were found in 27 provincial regions in 1988 and motor industry was listed as a pillar industry in 22 provincial regions in 1996 (Wei 2001b: 2–29). According to the national industrial census in 1995, among 285 main industrial products, only 25 products had the utilization rate of production capacity over 85%, 42 products between 75%–85%, 128 products between 50%–75% and 90 products below 50% (Wei 2001b: 4).

Fourth, the three aforementioned strategies, if successful, will generate significant land revenue for local states by creating a huge rent gap when agricultural land is turned into industrial and urban land. This is similar to the case in the inner city of Western countries where the rent gap can be created by "continued urban development and expansion" (Smith 1996: 68).

According to the Law of Urban Housing Property Administration of China (Wang et al. 1998: 58), the land revenue from the transfer of land-use rights is a part of the fiscal revenue of the local government and will be used to support the construction of urban infrastructure and land development in the locality, which may further boost the land price. According to the revised Law of Land Administration of China that was in force on 1 January 1999 (PRC 2001), either the state or rural collectives owned all the land. The land owned by rural collectives can be converted to state-owned land, and rural collectives will be compensated based on the original land use, six to ten times the average output for arable land. Resettlement aid, six to ten times the average output for arable land, will also be provided. The land revenue from the transfer of land-use rights using such new state-owned land would be shared by the central state (30%) and the local state (70%). Thus the local state has every incentive to control large areas and to convert much arable land for industrial and urban development. This is a major force driving the urban space expansion in China. The total urban built-up area increased from 9,386 km^2 in 1985 to 19,264 km^2 in 1995 and 32,521 km^2 in 2005 (NBS 2001: 344, 2006: 395). As a result, the total arable land of China decreased by over 46.7 thousand km^2 in the period of 1986–1998 (Ye 2004). It further decreased from 1.30 million km^2 in 1996 to 1.22 million km^2 in 2005 (Sheng 2006). The revenue of land sales reached RMB35 billion and RMB 49.2 billion in 2000 and 2001, respectively (Wang 2004).

In summary, industrial and land development in China can bring huge financial returns to local governments in forms of land revenue and industrial-commercial tax. Every local state is interested in attracting and concentrating the development in their own land – a kind of urban territorialization. Acquiring urban status and expanding the spatial boundary under the jurisdiction of local states has become

a new strategy for lasting growth, resulting in the most massive urban space reorganization in Chinese history. Other than urban growth and urbanization, social, political and administrative considerations are also causes for changing urban administrative areas in China.

Changing city scales and urban territorialization

Changing city scales and urban territorialization are two major forms of urban space reorganization in China: one vertical and one horizontal. City scale changes when a city is promoted in the administrative hierarchy from county level to prefecture level, vice-provincial level or provincial level, which are three basic levels of government administration in China below the central government. Urban territorialization takes place when a city's territory expands to put more areas under its control. It is not just a kind of spatial expansion. More importantly, a city gains control over the land and economic interest in the new area. This section will examine these processes and the interaction among various scales.

A city is an important kind of political unit in China. The "Law on the Organization of Local Governments," revised in 1995, stipulated the political power structure of a city (Editorial Committee 1995: 29). The People's Congress of a city is the organization with the state power. The city government is not only the executive arm of the People's Congress of a city but also the local administrative arm of the state. Thus the city government was responsible to both the People's Congress of the city and the state administrative organization at the higher level. Such a power structure ensured that the central government had the ultimate power in initiating changes and controlling local governments at various levels. The central government has been influential in the changes of city scales, i.e., the promotion of a city from one level to another in the administrative hierarchy, and urban territorialization, i.e., city boundary change, both before and after 1978.

The current processes of city designation and boundary changes are stipulated by relevant laws such as "the regulation on the management of administrative divisions" announced by the State Council in 1985. Economic consideration is the main reason for reconfiguration of urban space. Cities are regarded as places for efficient wealth creation and to act as economic centers to enhance the integration of urban and rural economies. Two major events in the change of city scales are the designation of a new municipality and vice-provincial cities (Shen 2004b).

First, a new kind of vice-provincial cities was introduced in 1994, recognizing their increasing role in the economy. The key consideration is to facilitate the autonomy of some larger cities for economic development. These cities are given a privileged position in the national plan that their economic plans would be listed separately from their provinces. In 1997, there were 15 such cities, including Shenzhen, Dalian, Qingdao, Ningbo, Xiamen and 10 provincial capitals of some provinces with strong economic and political status. These vice-provincial cities are still under the administration of provincial governments, but they have the same power as a provincial government in economic planning and administration.

Second, a new provincial-level municipality, Chongqing, was established in 1997. The old prefecture-level city of Chongqing in Sichuan province was scaled up to the provincial level and expanded to include two prefecture-level cities and one prefecture. The new municipality was established to cope with the migration and development related to the construction of the "Three Georges Project," which was constructed during the period of 1994–2009. The upgrading of Chongqing's city scale has had an important effect on its development path, and it now acts as a leading central city in the southwestern region of China.

Horizontally, urban territorialization takes place when a city's territory expands to put more areas under its control. One important form in which cities expand their influence is the designation of new cities. Local governments are keen to negotiate with the central state for urban status for economic, land and strategic interests.

A city has several advantages over a county. First, when a county is designated as city, it will acquire greater administrative power and gain much autonomy. According to the Central Staffing Committee (Editorial Committee 1995: 73), a city government may set up 30–60 commissions/bureaus, while a county government may only set up 20–30 bureaus. A county-level city government has greater administrative power than a county government. It can approve a construction project up to US$30 million, while a county government can only approve a project up to US$1 million (Dai 2000: 222). Second, a city will be listed separately in the provincial plan. Third, a county-level city can use 7% of the local fiscal revenue for urban maintenance and construction, while a county can only use 5% (Wang 2001: 228). Fourth, a city is much easier to attract investment and talents, and market its "urban" products than a "rural" county.

"Separating a city from a rural county" is one form of city designation used mainly before 1978. An original county is divided into two administrative units, with the county keeping most of the area of the original county and the city with a small area of the central town. The new city is fully surrounded by the new county, which is deprived of its central town. Urban and rural areas are completely separated into a city and a county. Such kind of city designation can create serious governance problems because of the overlapping of governments. In 24 cases, city and county governments are stationed in the same city, while the county does not have its own urban center (Wang 2001: 242, 252). For example, in the urban proper of Shaoxing city, there were three governments: one for Shaoxing city, Shaoxing county and Yuecheng district, respectively, in an area of 101 km^2 in 1998. The officials of the county government and their dependents are not residents of the county and their legitimacy as local county officials is questionable. The county will either lose its momentum of urbanization or become the rival of the city by developing a new urban center in its own territory.

The second form of city designation is called "re-designation of a whole county as a city." A whole county is redesignated as a city if it meets the criteria for city designation. Over 70% of the current cities in China are designated in this form. For example, Conghua county was designated as a county-level city in 1994 (DCA and MPH 2000). It had an area of 2,009 km^2 and a population of 0.47 million in

1998. Such a city is different from the conventional concept of a city with a central built-up area. A county-level city often consists of several towns and townships. Conghua city consists of 15 towns and 1,865 rural settlements spreading over its territory.

Urban territorialization also takes place when a city annexes a county or a county-level city as its urban district and when two or more cities are merged. When a city's territory is expanded, it will acquire much land for industrial, commercial and housing expansion, and be able to gain substantial land revenue and tax income. Urban expansion is an important territorialization strategy to strengthen a city's political and economic power, and to curb rising localism in subordinated areas.

For example, Guangzhou city had eight urban districts with a total area of 1,274.41 km^2 and a population of 4.2 million in 1998. It also administrated four county-level cities with an area of 6,022 km^2 and a population of 2.7 million in 1998. Industrial and urban development in Guangzhou's urban districts was constrained by limited land. To solve the problem and to gain control of the new international airport being constructed in Huadu city and the port facilities in Panyu city, Guangzhou city annexed Huadu and Panyu as two new urban districts with the approval of the State Council in May 2000. Such a move often meets stiff resistance from a county or county-level city, which was the case with Panyu (Dai 2000: 112). When a county or a county-level city was designated as an urban district, it was totally absorbed by a high-level city. Generally, a county or county-level city is an independent political unit and has much political and economic power. An urban district is a part of a city and is not an independent and complete political unit (Dai 2000: 99). After the change, an urban district has less power and less conflict with the city.

"The merging of two cities" usually involves one prefecture-level city and one county-level city, both with strong economic power. This is different from when a city or a county is annexed by a dominant city. The merging of two cities also involves the reshuffling of the government organizations in the two cities. Before the merge, two cities often have intense interest in the urban development. It is typical that the county-level city would attempt to develop its own urban center either near the prefecture-level city or some distance away from the prefecture-level city so that it can gain control over its own urban development. This may be regarded as an overstretched strategy of territorialization (Storper 1997; Brenner 1999). It has the effect of reducing the agglomeration effect and the duplication of urban facilities. Problems of co-coordinating the urban infrastructure will arise. In Jiangsu province, steps have been taken to merge cities to solve such problems. In 2001, county-level city Xishan was merged with prefecture-level city Wuxi. Before the merge, Xishan was emerging as a strong county-level city. It had a GDP of RMB 28.5 billion and a population of 0.989 million in an area of 1,114.3 km^2 in 1999 (USES 2001). On the other hand, the urban area of Wuxi city only had an area of 517 km^2. It had a GDP of RMB 37.8 billion and a population of 1.117 million in 1999.

As mentioned before, vertical rescaling and horizontal territorialization can take place simultaneously. For example, when the "system of city governing

county" is introduced to replace a prefecture, a county-level city is often promoted to become a prefecture-level city, which also puts other county-level cities and counties in the former prefecture under its administration. The city is scaled up from county-level to prefecture-level, while the urban space under its administration is also expanded.

The "system of city governing county" is an important way of expanding the area under the jurisdiction of a city. By 1994, the system was implemented in all provincial units except Hainan province in China. A total of 741 counties, 31 autonomous counties, 9 banners and 2 special districts were put under the administration of 192 cities. Two hundred and forty county-level cities were also administrated by prefecture-level cities on behalf of provincial governments.

The "system of city governing county" is designed to enhance the integration of a central city and its surrounding hinterland. But in some cases, there are intense conflicts in administrative power and economic interest between the governments of the central city and the county-level units (Dai 2000: 156). When a county is under the administration of a province, it has much autonomous power. But when it is governed by a prefecture-level city, the city tightens its administration on the county. The central city is interested in the overall planning and administration (centralization) of the whole city. But because of limited resources, the government and the mayor of a central city often focus on the urban proper (Dai 2000: 155). A central city may give priority to its urban proper in bidding for large construction projects, foreign investment and the right for direct foreign trade. Thus "system of city governing county" is regarded as a system of "city exploiting county" and "city suppressing county," instead of "city helping county" (Liu and Wang 2000). The mayors of about 20 county-level cities shared this view in a survey (DRE and JICA 2001: 97). According to another survey on the system of city governing county in 1990 (Zhou and Hu 1992), 88% of counties responded that there was competition between counties and the central cities on the supply of raw materials, investment, projects and duplication of factories.

The urban system has changed dramatically since the aforementioned changes. The number of total cities increased from 193 in 1978 to 668 in 1997. The number of total cities was reduced to 661 in 2004 because of the merging of cities mentioned before (NBS 2005). On the other hand, the number of prefecture-level cities increased from 112 in 1982 to 268 in 2004. The number of municipalities, vice-provincial cities and county-level cities were 4, 15 and 374, respectively, in 2004.

Under a hierarchical administrative system, the central government has substantial power in the process of changing city scale and territorialization. Its influences build on three major vehicles. First, the National People's Congress or the State Council is empowered by the nation's constitution to approve city designation and boundary changes. For example, because of the rapid increase of city numbers, the State Council decided to freeze all applications for redesignation of a county as a city in 1997. Second, the State Council, via the ministry of civil affairs, has the power to set up and revise criteria and guidelines for city designation and boundary changes. Third, the power of central government is implemented

through the hierarchical administrative system. Thus local governments are not completely autonomous. Compared to Western countries, the central government is more powerful in making changes in the administrative regions, including city boundaries in China. It holds the important political and administrative power.

The local governments also participate in the process of changing city scale and territorialization actively. First, any new forms of city designation and boundary changes are often initiated, experimented and tried by a local government. Once successful, the central government would endorse such forms and introduce them to other areas all over the country. Thus there are bottom-up initiatives and feedbacks from local to central governments in addition to the top-down directions and guidelines in the Chinese hierarchical administrative system. For example, five cities were designated on the basis of the central towns in five counties in Zhejiang province in 1978 (Dai 2000: 67). The city and the county were combined to form a large city based on the previous whole county in 1981 to overcome the conflict between the city and the county after the State Council approved the province's application. This means that a whole county was designated as a city in Zhejiang province in 1981. Such a model of city designation was later accepted by the ministry of civil affairs in 1983 and was introduced nationwide.

Second, generally, the process to designate a new city or change/enlarge the boundary of a city is initiated by the local governments concerned. For example, if a county would like to be designated as a city, it will prepare relevant documents and data to support the case that will then be examined by its provincial government. If there is no objection, the case will be passed on to the State Council for approval.

Third, putting a county or a county-level city under the administration of a prefecture-level city and designating part or all of a county-level city as an urban district involves an adjustment of the administrative relation between a prefecture-level city and areas under its administration. Usually, the power of a prefecture-level city will increase while that of a county or county-level city will be reduced. Local county-level governments are the largest stakeholders, but they are required to follow the decisions of higher level governments. Open disputations are rare in this regard. Most issues are solved behind doors. Nevertheless, as mentioned before, some conflicts do exist, which have to be handled properly (Dai 2000: 112).

Fourth, city designation and boundary changes are a matter of local and central governments. Public participation is rare in China. Clearly, community participation is important, but it is not sufficient under the socialist market system in China (Zhang 2002).

Conclusion

While many scholars argue that the urbanization process is unique in the pre-reform period of state socialism and the reform period of market transition (French and Hamilton 1979; Ma 2002; Chan and Zhao 2002), some scholars believe that Chinese cities and Western cities share similarities in the broad urbanization process,

and the concepts and theories of urban change developed in the Western context such as "urban regime theory" and "urban growth machine" are also relevant to Chinese cities (Zhu 1999; Zhang 2002). But "urban growth machine" and "urban regime theory" focus on the forces of urban transformations within cities, largely ignoring external forces on the national and global scales. The scale theory is a more general theory, emphasizing the struggle over scales and analyzing internal and external factors and players within and beyond city scales. Because of the relativization of scale, the global forces, the central state and the local actors in a city, as well as the scalar interactions should be taken into consideration in scalar analysis.

The scale theory is developed mainly in the context of Western capitalist societies to describe the scalar organization of capitalism, paying little attention to the transformation in socialist countries such as China. As a general sociospatial theory, the chapter argues that the general principle of scale theory is also relevant to transitional socialist economies where scalar configuration has also been rearticulated by liberalization and globalization.

After reviewing the key concepts of scale, territorialization, deterritorialization and rescaling of scalar relations, the scale theory is adopted to describe the profound transformations of the state and the city in China. In addition to territorially bounded practices and relations, one important form of deterritorialization and reterritorialization is the shrinking or expansion of physical space. This includes the urban space reorganization, which is the focus of this chapter. This chapter examines the scaling of central and local states. It considers the urban spatial transformation and reconfiguration as rescaling and territorialization processes.

The rescaling of central and local states is a politically constructed process. It does not just mean the declining of the central state and the rise of local state. There have been intensive interaction and negotiation between local and central governments over administrative powers, revenue sharing, taxation, investment projects and loans.

The central government itself plays an important, sometimes leading, role in facilitating the functioning of the local state. The local state has been encouraged to develop the local economy using various means. The central government has also introduced recentralization from time to time to gain control over financial resources and administrative power. Regulatory intervention and frequent reshuffles of key local officials are important measures of the central state to curb rising localism. This is similar to the case of Western countries, in terms of scale theory, in which "state institutions have arguably played a particularly significant – but hardly exclusive – role in demarcating, reproducing, modifying, destroying and creating anew the major scalar hierarchies and partitions in which everyday life within capitalist society has been configured" (Brenner 2001: 607).

Industrial and land development in China can bring huge financial returns to local governments in forms of land revenue and industrial-commercial tax. Decentralization has led to the emergence of localism. Every local state is interested in attracting and concentrating the development in their own land – a kind of urban territorialization. To meet increasing needs for the expanding industrial and land

development, acquiring urban status and expanding the spatial boundary under the jurisdiction of local states have become a new strategy for lasting growth.

Changing city scale and urban territorialization are two major forms of urban space reorganization in China: one vertical and one horizontal. City scale changes when a city is promoted in the administrative hierarchy from a county level to a prefecture-level, vice-provincial level or provincial level. Urban territorialization takes place when a city's territory expands to put more areas under its control. Through spatial expansion, a city gains control over the land and economic interest in the new area.

Economic consideration is the main reason for reconfiguration of urban space. Cities are regarded as places for efficient wealth creation and to enhance the integration of urban and rural economy. A new municipality and a new kind of vice-provincial cities have been designated in China. Many county-level cities have also been designated, and a "system of city governing county" has been introduced. Most changes are in the interest of the local areas concerned. But in some cases, such as the conversion of county-level cities to urban districts, the merging of two cities and the introduction of a "system of city governing county," the power and interests of lower units are affected. In some cases, there are intense conflicts in administrative power and economic interest between the governments of the central city and the county-level units under the "system of city governing county."

The chapter also examined the role of central and local states in the processes of rescaling the city and urban territorialization. Under a hierarchical administrative system, the central government has substantial power in the process of changing city scale and territorialization. The local governments also participate in the process actively.

One major difference between the Western and Chinese cases lies in the nature of rescaling process. In Western countries, scalar configurations are often remade through intense socio-political struggles, as a stable and rigid system has been well established (Brenner 2001: 592). Once scalar fixes are established, they often exercise strong structuring effects on the future evolution of scales representing a situation of "path-dependency" (607). In the Chinese context, a mature socialist market economy is yet to be established after abandoning the command economy in 1978. Thus both the central and local states have been actively initiating a new arrangement of scalar relations among the central, provincial and local governments. Although there have been conflicts, intense interaction and negotiation between the central and the local states has been an outstanding feature, and the central state often assumes a leading role in the final resolution of scalar reconfiguration.

Note

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3 Dual-track urbanization in post-reform China[1]

Introduction

Urbanization and subsequent urban problems such as the persistence of the informal economy and urban poverty in developing countries have been the focus of many studies (Potter and Lloyd-Evans 1998). Roberts (1978, 1995) suggested that the issue of the coexistence of wealth and poverty, modernity and traditionalism in cities of underdeveloped countries could be explained using a political economy approach in terms of the way in which capitalism has expanded in these countries. The role of the government was also found to be important:

> Governments have differed both in the scale of their intervention in the economy and in their style of intervention, leading to differences in the size of the informal sector and in the nature of its links with the formal sector through subcontracting.
>
> (Roberts 1995: 117)

Although there are significant differences between urbanization processes in socialist and capitalist economies, the political economy approach has relevance to both and is helpful in understanding urbanization in China. Indeed, the government has a much stronger role in China than in other developing countries, such as those in Latin America, which have been more subject to external forces and where dependency theory has been usefully engaged to explain urbanization problems (Roberts 1978, 1995; Smith 1996). China was largely closed to the outside world between 1949 and 1978, and, consequently, the causes and consequences of urbanization were more driven by internal factors such as government policy in that period.

There was remarkable underurbanization in the first three decades of the People's Republic of China from 1949 to 1976 under the influence of Maoist anti-urban ideology (Ran and Berry 1989; Chen 1973; Ma 1976). The household registration (hukou) system was an important apparatus in such underurbanization by controlling population migration directly. Two hukou statuses, *agricultural population* (nongye renkou) and *non-agricultural population* (feinongye renkou), were assigned to people who were generally living in rural and urban

areas, respectively. The non-agricultural population was sponsored by the state and experienced various employment, housing, education and social welfare privileges, and this urban bias was more powerful than in other developing countries because of an explicit and formal state apparatus based on the hukou system (Lipton 1977; Smith 1996). During the period of 1964–1981, prior to the 1982 census, only people with the hukou status of non-agricultural population were counted as "urban," while people with the hukou status of agricultural population who lived in cities and towns were not counted as part of the official "urban" population by the state (Shen 2005a). Thus urbanization refers to the growth of the population with hukou status of non-agricultural population. This was called the single track of state-sponsored urbanization in China before 1978.

The single track state-sponsored urbanization described earlier, in combination with "development from above" in the pre-reform period, has been well documented (Man and Fan 1994; Zhu 1999; Lei 2001). An interesting theoretical development was a model of urban growth under central planning developed by Sjoberg (1999) that focused on the effects of investment and priority in a shortage economy. Unlike most structuralist approaches that failed to detail the process of intermediation between bureaucratic socialism, international division of labor and empirical world, Sjoberg developed an interpretive framework for analyzing urbanization in socialist countries as well as spatially differentiated urbanization within individual countries.

There have been significant changes in the political economy in China since 1978 when economic reforms were introduced (Ma 2002; Wu 2002; Pannell 2002; Shen 2005b). With profound social and economic changes, deepening decentralization and the transition toward a market economy, urbanization has been accepted as a positive process conducive to modernization and development in the country. A new political economy of urbanization has nurtured a new mode of dual-track urbanization in China. The dual-tracks of urbanization consist of a new track of spontaneous urbanization involving people with hukou status of agricultural population and a reconfigured track of state-sponsored urbanization involving people with hukou status of non-agricultural population. The term "spontaneous urbanization," or non-state-sponsored urbanization, refers to the migration and growth of an "urban agricultural" population that is not entitled to many benefits and privileges designated for the non-agricultural population by the state.

Many studies have considered rural urbanization and the migration of peasant migrants to urban areas, which are the two streams of spontaneous urbanization (Fei 1984; Ma and Fan 1994; Yan 1998; Cui and Ma 1999; Fan 2001; Shen 1995; Goodkind and West 2002; Shen and Huang 2003). Although most studies remain empirical, some scholars have been exploring the political economy of migration and the roles of the state and market in these migration processes (Solinger 1999a, 1999b; Lei 2001). Attempts have also been made to theorize Chinese urbanization. Ning (1998) argued that the government, and especially local governments, enterprises and individuals, played a significant role in recent urbanization in China. Cui and Ma (1999) drew attention to the key roles of state policy, capital, local government, peasants and foreign investment in rural urbanization.

The evolving hukou system has also been the focus of some studies (Wong 1998; Chan and Zhang 1999). These studies provide a solid foundation for understanding various aspects of urbanization – rural urbanization, rural-to-urban migration and reform in the hukou system in post-reform China. But they have not been joined together neatly to provide a comprehensive framework of contemporary urbanization process in post-reform China. Furthermore, the changing nature of state-sponsored urbanization has been largely ignored because of an overwhelming interest in rural urbanization and rural-to-urban migration with a few exceptions. In the context of urbanization in the Fujian province, Zhu (1999) recognized the existence of a single track of state-sponsored urbanization before 1978 and made an effort to integrate spontaneous urbanization into the urbanization process in Fujian after 1978, along with the old state-sponsored urbanization. It is clear that Zhu's focus was on the role of spontaneous urbanization. Shen et al. (2002) formally articulated the process of dual-track urbanization in detail in a case study of the PRD in China.

This chapter develops a conceptual framework for dual-track urbanization using a political economy perspective. The term "political economy" refers to the political/economic relationships between the economy (the market and the employers in the reform period), government (central and local states) and urban and rural citizens in China, which are subject to negotiation, domination or contestation by various stakeholders. It is argued in this chapter that the path of urbanization in both pre-reform and post-reform China is determined by old and new configurations of a specifically Chinese political economy. The chapter also analyses dual-track urbanization empirically, focusing on how each track of urbanization contributed to the urbanization process in China between 1982 and 2000.

An interpretive framework of Chinese urbanization

Chinese urbanization in the pre-reform period and its transformation in the post-reform period is an integral part of the on-going socioeconomic changes in China. Any narrow analysis of Chinese urbanization focused on a particular aspect, such as state policy or demographic change, would not be complete. Thus it is important to develop an integrated framework for understanding Chinese urbanization. Following previous studies on urbanization in China (Ma and Fan 1994; Sit 1995; Chan and Zhang 1999; Shen 1995, 2005b; Solinger 1999a), the following key components can be identified in the urbanization process in China: mode of industrialization, central state, local state, urban economy, rural economy, urban citizens, rural citizens, hukou system and global linkage.

In Figure 3.1, the central part is the state, consisting of both the central and the local states, and within this the hukou system is a unique apparatus of the state. The changing power relation between the central and local states is a fundamental force in China (Huang 1996; Shen 2005b). The central state and local state are instrumental in choosing the mode of industrialization, which affects urban and rural economies dramatically in terms of both relative shares of public and private sectors and relative strength of state investment in the economy. The urban and

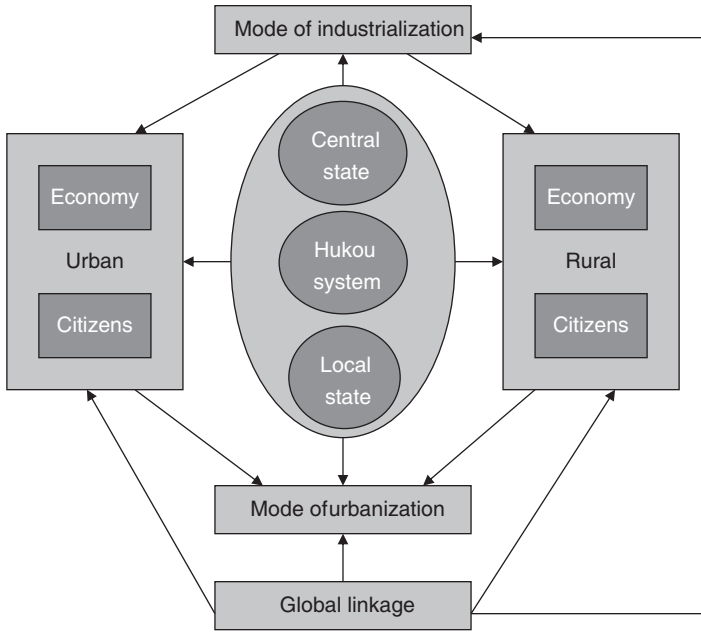


Figure 3.1 An interpretive framework of Chinese urbanization

rural economies themselves have a significant bearing on the urbanization process, especially providing employment opportunities to urban and rural citizens.

Urban and rural citizens are, of course, the subjects of urbanization. In the pre-reform period, the statuses of urban and rural residents were determined mainly based on the hukou statuses of non-agricultural population and agricultural population, respectively. In the reform period, many state benefits and privileges were still granted on the basis of the hukou status of the non-agricultural population. As many people with the hukou status of agricultural population had moved into cities and were at last counted as part of the "urban" population in the 1982 and 2000 censuses, urban citizens in this chapter refers to both local people with the hukou status of non-agricultural population and people, mainly non-local, with the hukou status of agricultural population in the reform era. This is in contrast to the definition used by some scholars who continued to refer to urban citizens as only those people with a local hukou status of non-agricultural population (Solinger 1999a). On the other hand, rural citizens consist mainly of people with hukou status of agricultural population. Of course, some people with the hukou status of agricultural population worked in urban areas on a seasonal basis, especially in the early years of rural industrialization and urbanization, and this temporary population would only be considered as urban if they stayed in urban areas for more than six months per year.

Global linkage indicates the effect of globalization on urbanization as well as the mode of industrialization and the importance of this has increased during the post-reform period. Key interactions between global linkage and urbanization include foreign investment, employment growth, new patterns of consumption and new urban spaces owing to investment in housing and the real estate sector (Haila 1999; Li 2005). Large-scale foreign investment and labor-intensive, export-oriented industrialization are important forces of economic development and urbanization in the coastal regions of China especially (Sit and Yang 1997). Anderson and Ge (2004) found that a city's openness to foreign investment has a positive effect on development. However, globalization also has profound institutional and cultural effects and conforming to the rules imposed by the WTO is one important catalyst for further domestic economic and institutional reforms.

Table 3.1 presents the key characteristics of the transition from the pre-reform mode of urbanization to the post-reform mode of urbanization. The table describes changes involving people with the hukou statuses of non-agricultural population and agricultural population rather than urban and rural citizens, as "urban" citizens consist of people with two different hukou statuses.

Figures 3.2–3.4 describe two modes of urbanization in the pre-reform and post-reform periods, and an equal mode of urbanization in the future. Four kinds of settlements, city, town, market town and village, are identified. The inner circle represents urban areas and the outer ring represents rural areas. People can have hukou status of either agricultural population or non-agricultural population (divided by a vertical line) and can be engaged in either the agricultural or non-agricultural sectors (divided by a horizontal line). The figures are designed in such a way that the location of a particular settlement indicates whether it consists of people with a hukou status of agricultural or non-agricultural population and whether such people engage in the agricultural or non-agricultural sectors.

In the pre-reform period, people with the hukou status of non-agricultural population had full state sponsorship and were concentrated mainly in cities and towns (Figure 3.2). Only a few people with the hukou status of non-agricultural population, such as local government officials, lived in market towns of rural areas. On the other hand, people with the hukou status of agricultural population were concentrated in villages without state sponsorship. In the pre-reform period, the distinction between urban and rural areas generally matched that of the non-agricultural and agricultural populations and that of non-agricultural and agricultural sectors under the hukou system within the socialist command economy.

In the reform period, because of economic reforms and the transition toward a market economy, an increasing number of people with the hukou status of agricultural population engaged in non-agricultural sectors, either in market towns/towns involving TVE development, or in cities and towns through spontaneous migration as temporary population (Figure 3.3). The boundary between urban and rural areas was, therefore, blurred. State sponsorship for people with the hukou status of non-agricultural population was reduced and both the non-agricultural population and agricultural population coexisted in urban areas. Their access to

Table 3.1 The political economy of urbanization before and after the economic reforms

Items	*Pre-reform period*	*Post-reform period*
Mode of urbanization	Single-track, state-sponsored urbanization	Dual-track urbanization
Mode of industrialization	SOEs and state investment	TVE-based rural industrialization, reformed SOEs, FDI, private sector
The central state	Central planning, sponsorship of people with hukou status of non-agricultural population, anti-urbanization	Decentralization, open policy, reduced sponsorship for people with hukou status of non-agricultural population, pro-urbanization
The local state	Under control of the central state, little autonomy	Increased autonomy, defending local interest
Urban economy	Based on SOEs and manufacturing	Multiple modes of ownership, FDI, based on manufacturing and services, absorbing rural migrants
Rural economy	Based on rural collectives and agriculture	Farming based on "household production responsibility system," TVEs, sending migrants to urban areas
People with hukou status of non-agricultural population	Privileged status in the society, state sponsorship, life-long guaranteed employment. Only people with hukou status of non-agricultural population were counted as urban population	Reduced state sponsorship and protection by the state, contracted employment with increasing risks of unemployment. People with hukou status of *non-agricultural population* was a main part of urban population
People with hukou status of agricultural population	Confined to rural areas and agricultural sector. Income and welfare based on the rural collectives	Increased economic freedom and mobility. Engaged in non-agricultural sector both in local TVEs and urban areas. Increasing migration to urban areas as temporary population. Urban population also include some people with hukou status of agricultural population
Hukou system	Rigid system separating people with different hukou statuses of agricultural population and non-agricultural population spatially, socially and economically	Hukou system in transformation. Reduced benefit attached to people with hukou status of non-agricultural population. Creating quasi non-agricultural population status, locally valid hukou status and permitting registration of temporary population in urban areas
Global linkage	Negligible	Increasing influence of globalization

Notes: TVEs: township and village enterprises; SOEs: state-owned enterprises; FDI: foreign direct investment.

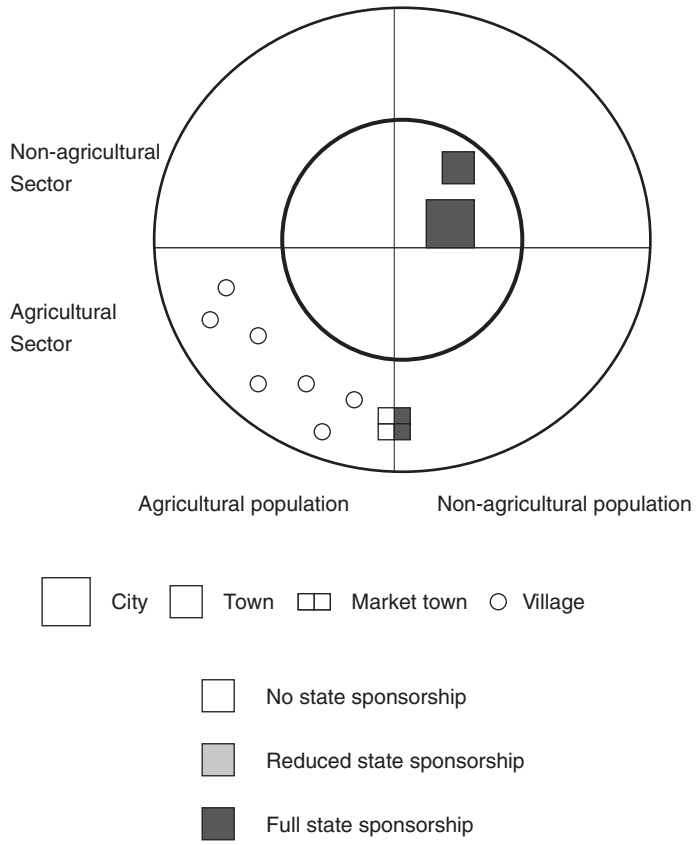


Figure 3.2 Single-track, state-sponsored mode of urbanization in the pre-reform period
Note: The inner circle represents urban areas and the outer ring represents rural areas

many state benefits was still different, although such inequality was narrowed because of reduced state sponsorship.

Figure 3.4 shows a possible equal mode of urbanization in the future when the distinction between the hukou statuses of non-agricultural population and agricultural population will be completely abolished, and both the urban and rural populations will enjoy the same status, based on a mature market economy, and there will be no particular state sponsorship for the non-agricultural population. Indeed, some initial experiments are already underway in small towns and some cities (Xiamen Municipal Government 2003; Wang 2004), but it may take some time to realize such an equal model of urbanization throughout China.

The framework for Chinese urbanization proposed here is useful to help understand the complicated relationships involving the urban or rural residential

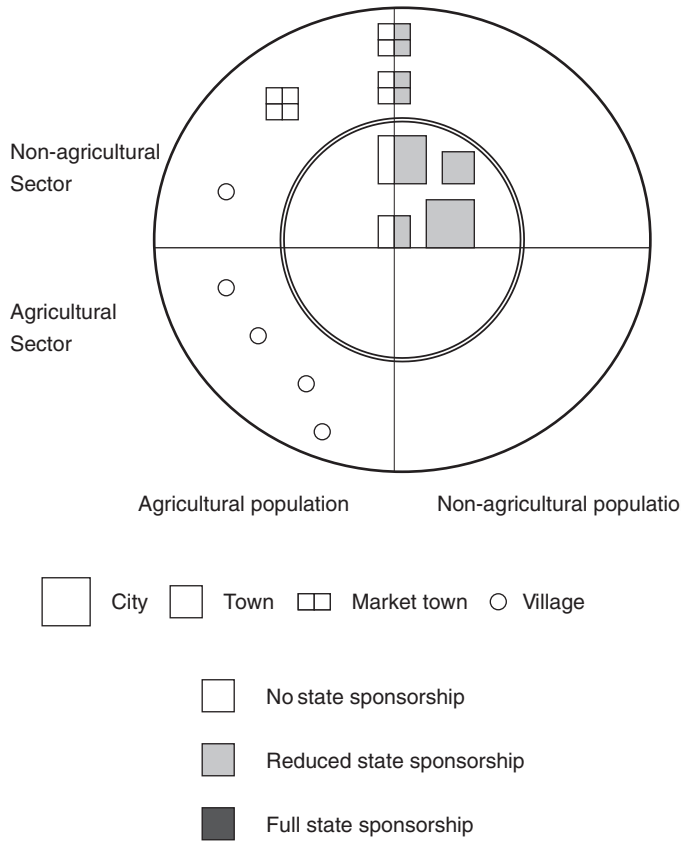


Figure 3.3 Dual-track urbanization in the post-reform period

Note: The inner circle represents urban areas and the outer ring represents rural areas

location of people with the hukou statuses of non-agricultural population and agricultural population, their occupational attachment to non-agricultural and agricultural sectors and their entitlement to state sponsorship. More importantly, it helps provide a systematic analysis of the dynamics of Chinese urbanization – changes in the various relationships described earlier between the pre-reform and post-reform periods.

State-sponsored urbanization in the pre-reform period

China embarked on industrialization with limited urbanization under a socialist central planning system before 1978 (Chen 1973; Ma 1976; Ran and Berry 1989; Sit 1995). Industrialization relied heavily on SOEs and state investment under a model of "development from above." The country was relatively closed

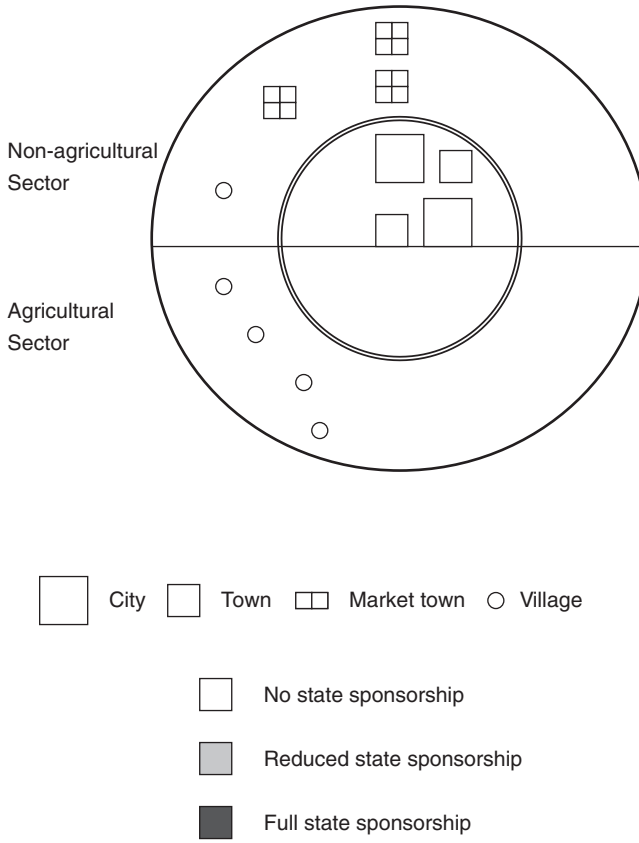


Figure 3.4 Equal mode of urbanization in the future

Note: The inner circle represents urban areas and the outer ring represents rural areas

to the outside world and self-reliance was emphasized in the development strategy. The central state dominated the local state, which had little autonomy, so the central and local states were effectively parts of one single integrated state. There were clear divisions of labor between the urban and rural economies, and between urban and rural citizens that were facilitated by the hukou system. In this period, only people with the hukou status of non-agricultural population were considered as urban citizens, and people with the hukou status of agricultural population were considered rural citizens. The hukou system acted as an institutional apparatus to separate the urban and rural populations, and some have even compared it to the pass system in apartheid South Africa (Alexander and Chan 2004).

There was no control over migration in the early years of the People's Republic of China after its foundation. The freedom for citizens to migrate was actually stipulated in the first constitution of the country adopted in 1954. But this

changed as a response to rapid rural to urban migration in excess of the pace of industrialization in the later 1950s, and the nationwide hukou system was formally introduced in 1958 to control these flows. Each person was registered at a place with one of two hukou statuses: non-agricultural population and agricultural population. The conversion from a hukou status of agricultural population to that of non-agricultural population, and rural to urban migration, were both tightly controlled by the state; the Ministry of Public Security administrated the hukou system for purposes of population registration and controlling population migration. Because of the country's poor economic performance, especially in the period of 1959–1961 after the "Great Leap Forward" movement and in the cultural revolution period 1966–1976, the hukou system was used as a key tool for central planning up to the late 1970s. Various government departments linked entitlements for grain rationing, employment, housing, education and social welfare with the hukou status of the non-agricultural population. Eventually, hukou became a key institution in Chinese society, which distinguished between people with two different statuses (Chan and Zhang 1999; Lei 2001).

The hukou system had three functions in the pre-reform period: population registration, migration control and administration of the allocation of various state benefits to the non-agricultural population (Table 3.2). The Ministry of Public Security was only responsible for the routine administration of population registration and migration, while key polices regarding migration and resource allocation were determined by other ministries in the government. Thus the basic function of population registration of the hukou system was not discriminative against any population group; rather, it was the controlling and additional administrative functions that discriminated against people with the hukou status of agricultural population in rural areas. Most administrative functions were not an essential part of the hukou system from the very beginning, and they were added subsequently according to the needs of the socialist planning economy. Thus such administrative functions could be cut off to restore the hukou system only as an apparatus for population registration, giving no privilege to any particular kind of population.

In the pre-reform period, urbanization, officially defined as an increase in population with the hukou status of non-agricultural population sponsored by the state, was largely a result of state planning. The political regime of central planning in pre-reform China created two separate worlds and pursued industrialization at the expense of urbanization by keeping the majority of the rural population in rural areas (Sit 1995). The only exception was the development of rural industries in the early 1970s in some provinces such as Henan, Jiangsu and Zhejiang, which provided a foundation for rapid rural industrialization in the post-reform period. Only a single track of state-sponsored urbanization prevailed in the pre-reform period. As the state was also the major investor in both the urban economy and infrastructure, the pre-reform mode of urbanization was also called "urbanization from above" (Ma and Fan 1994).

The mode of urbanization in the pre-reform period is presented in Figure 3.2, as elaborated in the previous section. As summarized in Table 3.1, the

Table 3.2 Functions of the Chinese hukou system in the pre-reform and post-reform periods

Basic function	*Controlling function*	*Additional administrative functions*
Pre-reform period		
Population registration	Migration control	Grain rationing Job allocation Housing allocation Access to education and medical services Social subsidies Social welfare
Post-reform period		
Population registration	Weakened migration control	Employment restrictions Housing benefit Access to education and medical services Social subsidies Social welfare

political economy of urbanization in the pre-reform period has the following characteristics. First, the mode of industrialization was driven by SOEs and state investment. Second, the central state was in charge of central planning with an anti-urbanization mentality, while the local state had little autonomy. Third, urban and rural economies had a clear division of labor. They were based on SOEs and collectives, and engaged in manufacturing and agriculture, respectively. Fourth, people with the hukou status of non-agricultural population and agricultural population lived in urban and rural areas, respectively, according to a strict hukou system. Fifth, China adopted a closed door and self-reliance policy with few global linkages in the period.

Dual-track urbanization in the post-reform period

The new political economy of urbanization in China in the post-reform period was a result of, and a response to, profound socioeconomic changes in Chinese society. Under the influence of an emerging market economy and because of the demands of the grassroots population, especially in rural areas, the state has relaxed its tight control on both industrialization and population migration in urban and rural areas. A new track of spontaneous urbanization has emerged, and this section examines the political economy factors that have underpinned the emergence of spontaneous urbanization and the reconfiguration of state-sponsored urbanization.

The economic reforms and open door policies introduced since 1978 have had a profound effect on urban and rural economies. Their initial objective was to revive the economy through decentralization, relaxing state control and planning on production, exchange, distribution and consumption through both rural and urban reforms (Shen 2005b).

Farmers generally relied on themselves for sustenance. Thus rural reform took place first, as the risk of reform was minimal to the state. A "household production responsibility system" was introduced in 1978 so that a rural household could make its own production decisions once it had met the production quotas imposed by the state. By 1983, 90% of rural households had adopted such a system, and one direct result of rural reform was the emergence of a large surplus labor force in rural areas (Banister and Taylor 1989). At that time, the urban economy was still in a poor situation, and the state was not prepared to allow surplus laborers in rural areas to move into urban areas where few jobs were available. However, a consensus between the state and rural residents was reached so that industrialization and urbanization would proceed within rural areas. A dramatic change in state policy was that rural industrialization and TVEs were encouraged in rural areas to absorb the escalating number of surplus rural laborers (Shen 1995). In the Chinese context, TVEs refer to industrial and other enterprises established in rural areas that are owned and operated by rural collectives consisting of people with the hukou status of agricultural population. The defining feature of TVEs is that they are located in rural areas using rural land owned by rural collectives instead of urban land owned by the state. Since the 1990s, many TVEs have been privatized, and their growth has resulted in dramatic changes in local economies. In Jiangsu province, the output of TVE enterprises increased dramatically from RMB 6.2 billion in 1978 to RMB 785.7 billion in 1997, and its share in the province's total industrial output increased to 62.6% (Statistical Bureau of Jiangsu 1998). In coastal provinces, such as Jiangsu, TVEs have become the major force of manufacturing, reflecting a dramatic shift in the mode of industrialization and the nature of the rural economy.

Rural industrialization stimulated the development of both designated and market towns, which supported the manufacturing and trade services (Fei 1984), and the development of TVEs has been recognized as a major driving force of "invisible" rural urbanization (Yan 1998; Cui and Ma 1999). Thus many rural people now officially live in "rural settlements," but they engage in industrial and other non-agricultural activities, and such settlements should therefore be considered *de facto* "urban" settlements. This "rural urbanization" is different from the urbanization, which occurs through the expansion of designated urban areas. Thus a second track of spontaneous urbanization has opened to rural residents, most of whom retain the hukou status of agricultural population (Zhu 1999). The most active urbanization has taken place in rural areas, where there has been a transformation of market towns into urban centers along with a demographic migration of villagers to towns, and a shift of employment out of agriculture into non-agricultural occupations. Such rural urbanization has been called "urbanization from below" (Ma and Lin 1993; Ma and Fan 1994; Cui and Ma 1999).

Many small towns have been developed to retain that rural population that will "leave land but not hometown." This slogan reflects the intention of the state to keep rural residents in rural towns and is only a small step away from the old idea of urban-rural separation. Nevertheless, "leaving land as well as hometown" has also become a common phenomenon since the 1980s. The migration

of the temporary population (or floating population) to urban areas actually forms another stream of spontaneous urbanization, resulting in a growing number of people without a local hukou status, because migrants retain their agricultural population hukou status.

If there is a consensus on rural industrialization and rural urbanization between the state and rural citizens, the migration of people to urban areas with or without permission is more controversial and often results in contestation between rural migrants, urban residents, local urban authorities and the central state (Solinger 1999a, 1999b; Shen 2005b). Thus in some large cities, such as Beijing, Shanghai and Guangzhou, there were repeated attempts during the 1980s and 1990s to expel the "floating population" (Yu and Hu 1998). Since then, the state eventually responded to the new demands and circumstances of the evolving market economy by adjusting its migration policy and hukou control (Pannell 2002; Shen 1995; Wang 2004). The three major policy changes are as follows.

The first was to issue temporary resident permits to most migrants who moved from rural areas to urban areas after 1985 (Ministry of Public Security 1985). This opened the gate for many rural migrants, even though such migrants only got a "temporary" status because they were not granted a local hukou status (Goodkind and West 2002; Zhu 2003), and although their original hukou status may have been either agricultural population or non-agricultural population, the vast majority of the temporary population was agricultural population.

The urban agricultural population, therefore, included original agricultural population in urban areas and temporary migrants who had agricultural population hukou status. According to the 2000 census, which defined the temporary population who left their hukou place for more than half the year as usual residents in urban destinations, urban areas in China had a temporary population of 113.44 million, accounting for 78.57% of the total temporary population (PCO and DPSSTS 2002). In Shanghai, the temporary population increased from 0.60 million in 1984 to 3.87 million in 2000 (National Population and Family Planning Commission 2001).

The second policy change was the introduction of some quasi non-agricultural population statuses so that some rural migrants could achieve a "better" status in cities, even though they were not formally given a hukou status of non-agricultural population. One type of new status was introduced in 1984 and was defined as those households that supplied their own grain, but were not entitled to the various urban services and welfare provided to urban residents with local hukou status. Further provisions were made in 1992 for some established rural migrants with stable employment, income and housing to obtain "blue-chop" hukou status that was valid in a specific city at a cost of up to RMB 10,000 to cover the so-called urban construction fee. The status of "blue-chop" hukou grants similar education and welfare rights to holders as those of urban residents with a local hukou status (Wong 1998). As further hukou reform has been carried out, as will be detailed next, most holders of such quasi status have eventually achieved a formal hukou status of non-agricultural population.

The third change was the adoption of relaxed policies for converting hukou status from agricultural population to non-agricultural population, especially after 1997. Experiments with hukou reform started in some small towns in 1997 and were implemented in all designated towns and urban areas (i.e., central urban areas) of county-level cities after 1 October 2001 (State Council of China 2000). In these areas, all people can acquire local hukou if they have stable housing or income.

In the large urban centers, even in Beijing and Shanghai, hukou policies have also been relaxed for converting hukou status, but with different kinds of requirement (*Mingpao Daily* 2002, 2003). If a person has the hukou status of non-agricultural population, then his or her spouse, children and elderly dependents are allowed to acquire the hukou status of non-agricultural population. Skilled people with certain levels of education, such as a bachelor's degree, or those in the middle- or senior-ranked technical/professional occupations can acquire the local hukou status of non-agricultural population easily. Similarly, those who invest in businesses or buy commercial housing units can also acquire such local hukou status. Specific requirements are set up by local urban governments and vary between cities, but the general principle was endorsed by document number (1998)24 of the State Council issued in July 1998 (Sina.com 2001; *China Daily* 1998).

Members of the temporary population who participate in spontaneous urbanization are not treated as ordinary urban residents in Chinese cities. Such people have to struggle for their employment, accommodation and survival against both institutional constraints and discrimination by some local residents and employers. They form a special group of non-local residents with low socioeconomic status and few rights of access to employment, housing, medical service, education and social welfare, such that an unequal urban society has emerged to replace the pre-reform homogenous society that once existed in urban China (Solinger 1999a; Qian and Wong 2000; Shen and Huang 2003; Wu 2004). In addition to the role of the state and its changing policies, the market behaviors of employers and rural migrants in the emerging market economy in China also influence this process.

First, employers and companies have been able to recruit rural migrants for low wages with few fringe benefits, and the government either allows or at least tolerates this recruitment policy. It can be argued that this differential, sometimes discriminative, wage policy is the ultimate cause of the formation of new poor urban class. Such a recruitment policy may result in excess migration and rising unemployment among local residents; in Shanghai, the unemployment rate among the local urban residents increased from 2.4% to 4.9%, while its temporary population increased from 2.51 million to 4.13 million in the period 1992–2003 (Zhou et al. 2004). If rural migrants and local residents were treated equally in the urban labor market, their differential labor market outcomes would be the result of differences in other more traditional labor market factors such as education, experiences and skills. And were the government to enforce a policy of equal employment, it would likely reduce the demand for rural migrant labor in cities.

Those who did migrate would also have a better standard of living because of the improved wages.

Second, and on the other hand, most migrants from rural areas are obviously willing to accept low wages and poor living conditions in cities because they move voluntarily. This is influenced by the fact that they would have little income if they stayed in poor rural areas. Thus the temporary population issue cannot be solved unless there are significant developments in rural areas and adequate and equal access to social security provision to erase the difference between the two hukou statuses.

The track of state-sponsored urbanization has also been restructured in the post-reform period. First, urbanization is considered a positive process that could facilitate development by the state – a U-turn from previous anti-urban Maoist ideology. The state's financial capability has been increased because of overall economic growth so that the state is able to support more people with the hukou status of non-agricultural population. Thus, as discussed before, a pro-urban regime has emerged in China since the late 1990s. Second, the nature of the urban economic sector has been transformed. SOEs have been reformed to become independent companies, or they have been privatized. Many urban residents no longer depend on the state for jobs, as an increasing number who have the hukou status of non-agricultural population have been employed in the private sector or foreign invested enterprises. Third, the state benefit for urban residents with the hukou status of non-agricultural population has been reduced in the process of urban reform. Employment is no longer guaranteed, and grain rationing has been abolished.

Thus, as mentioned previously, the government has adopted a relaxed hukou policy to grant hukou status of non-agricultural population. People with a quasi-status of non-agricultural population are also counted in the official statistics of the non-agricultural population. These are the main reasons that state-sponsored urbanization has proceeded rapidly in the reform period. A few examples can be cited here. About 30,000 people acquired "blue-chop" hukou in Shanghai in the period of 1994–2000 and about 20,000 of these acquired this status because of their investment in housing property (Kong 2001). In urban districts of Hefei city, the number of people with the hukou status of non-agricultural population increased from 0.71 million to 1.11 million in the period of 1989–2001 because of relaxed hukou policies (Sohu.com 2002). In Dongguan, those who made an investment of RMB 0.3 million, RMB 0.5 million or RMB 1 million would get local hukou for one, two or three persons, respectively. In Guangdong, a set of comprehensive policies was introduced in 2002 (*Mingpao Daily* 2001a) so that no distinction would be made between the hukou statuses of agricultural population and non-agricultural population from 2002. And all spouses are allowed to migrate and get local hukou immediately, except in Guangzhou and Shenzhen, where they still have to wait for up to five years. Even so, spontaneous urbanization will continue, as some migrants cannot meet the requirements for a local hukou and will remain as temporary population.

It is clear that state-sponsored urbanization still exists in the reform period, although the degree of state sponsorship and state benefits have been reduced

greatly. A new relationship between the state, urban residents and rural residents has been created since 1978. During the reconfiguration process, the state has been careful to introduce reforms step by step so that the impact on local urban residents has been kept to a minimum. The state has also mobilized some resources to help urban residents whose employment and income are adversely affected by these reform measures, although urban unemployment and urban poverty continue to be problematic among urban residents and there are fears that this will result in an increasingly polarized urban society (Zhou 2000).

Clearly, a new mode of dual-track urbanization consisting of three streams has emerged in post-reform China, and its major features are summarized in Table 3.1. A much more diversified industrialization strategy has been adopted with TVEs and foreign direct investment (FDI) playing an increasingly important role. Because of decentralization, the power of the local state has been increased dramatically, while the central state plays a leading role in the introduction of economic reform, open policies and a pro-urbanization strategy. Urban and rural economies are diversified with multiple modes of ownership. The functions of the hukou system have also changed (Table 3.2). Its function of controlling rural to urban migration has been weakened, as rural migrants are now allowed to register, at least as "temporary population," in cities. Grain rationing has been abolished, and the job allocation function has also ceased, even though the hukou system still plays a role in restricting rural migrants' employment in urban areas. Housing allocation has also been largely stopped, but the hukou system still provides certain housing benefits to urban residents with local hukou status of non-agricultural population. As mentioned before, increasing global connections have had a growing influence on the urbanization process in China. The new mode of dual-track urbanization is also described in Figure 3.3. In comparison with Figure 3.2, it is clear that state sponsorship for people with the hukou status of non-agricultural population has been reduced. More and more people with the hukou status of agricultural population have been employed in non-agricultural sectors such as TVEs in market towns. A large number of people with the hukou status of agricultural population have migrated to towns and cities to join the temporary population.

Empirical analysis of dual-track urbanization in China

Earlier, I argued that a new mode of dual-track urbanization has emerged in the post-reform China, and our previous studies examined the dual-track urbanization in PRD region of South China (Shen et al. 2002), which was shown to be rapid. This section aims to examine the case of dual-track urbanization in China and its various provincial regions in the period of 1982–2000. The objective is to assess the relative importance of each track of urbanization by comparing the relative scales of spontaneous urbanization and state-sponsored urbanization in post-reform China. Because of the complicated issue of counting the "urban population" in China (Shen 1995, 2005a; Zhou and Shi 1995; Zhang and Zhao 1998), this is not an easy task, and despite the many studies on small towns and rural urbanization, there is no single indicator for measuring the progress

of spontaneous urbanization. This study will use three complementary measures of urban agricultural population, TVE employment and temporary population to measure spontaneous urbanization.

As described earlier, the urban population consists of people resident there with the hukou statuses of non-agricultural population and agricultural population. In this chapter, urban non-agricultural population and urban agricultural population refer to people with the aforementioned two hukou statuses, respectively. They are not linked with actual non-farming or farming occupations, as many people with the hukou status of agricultural population engage in manufacturing and services in urban China. The urban non-agricultural population represents state-sponsored urbanization, while the urban agricultural population represents spontaneous urbanization that is related to rural urbanization and the temporary population. The annual data for urban agricultural and non-agricultural populations for the period of 1982–2000 have been estimated using 1982 and 2000 census data as benchmarks in an earlier study (Shen 2005c).[2]

As argued earlier, those in TVE employment and temporary population are two important components of spontaneous urbanization involving occupational transition and spontaneous migration. Rural urbanization is most active in those areas with a vibrant TVE development, while over 78% of the temporary population is found in urban areas. The data on TVE employment and temporary population provide further evidence of spontaneous urbanization.[3]

Here we divide China into three regions, examining their differences in dual-track urbanization (Figure 3.5). The definition of the western region is based on the Western Region Development Strategy of the Chinese government adopted in 1999 (Yeung and Shen 2004).

In the period of 1982–2000, the urban population in China more than doubled, increasing from 215.71 million to 469.57 million, while the level of urbanization (the percentage of urban population in total population) increased from 21.39% to 37.04%, based on adjusted census data (Shen 2005a, 2005c). The level of urbanization reached 47.29% in the eastern region in 2000, but only 33.03% and 29.36% in central and western China, respectively. Such gaps in the level of urbanization emerged mainly in the reform period, as the level of urbanization in the three regions was similar in 1982 at 24.75%, 20.39% and 17.02% in the eastern, central and western regions.

Although scholars often emphasize the importance of rural urbanization and spontaneous urbanization during the reform period, state-sponsored urbanization actually kept pace with the overall urbanization process in China. The official statistics show that the total urban non-agricultural population in China more than doubled in the period of 1982–2000, rising from 144.95 million to 309.41 million. This pattern was broadly consistent, as the urban non-agricultural population more than doubled in all three regions (Table 3.3).

Figure 3.6 presents the growth of the urban non-agricultural and agricultural populations in the Chinese provinces (including those municipalities and autonomous regions at provincial level), ordered according to the size of their urban population in 2000. Most provinces experienced significant growth in the urban

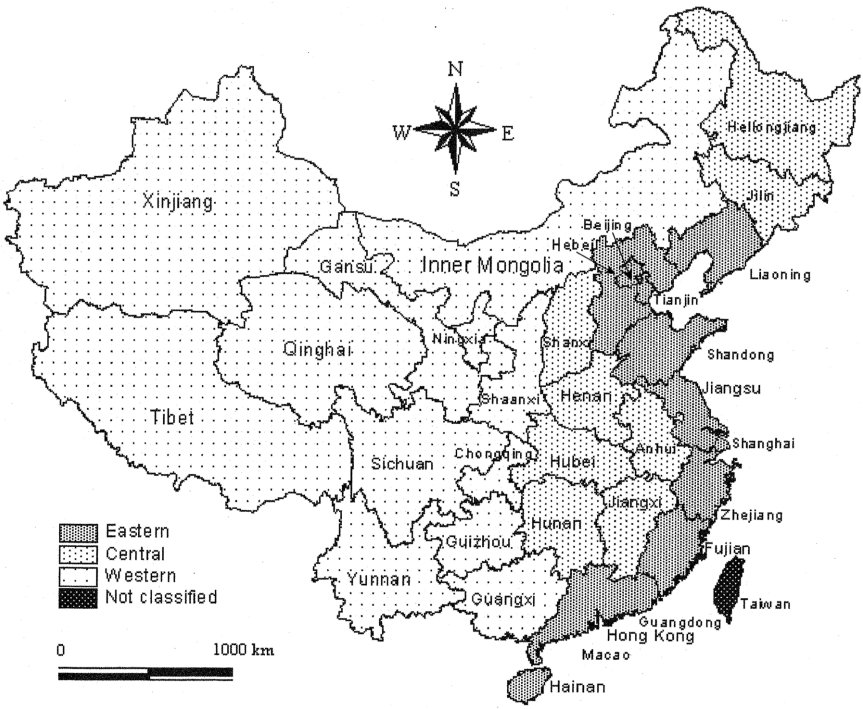
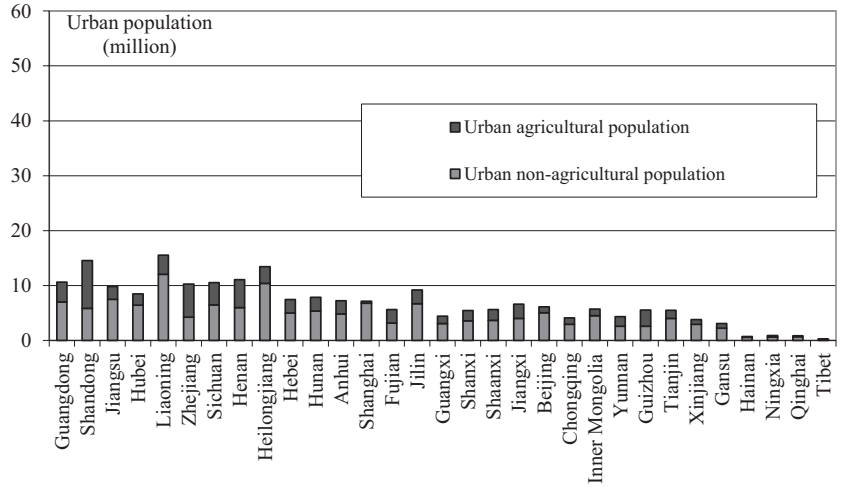


Figure 3.5 Provinces and regions in China

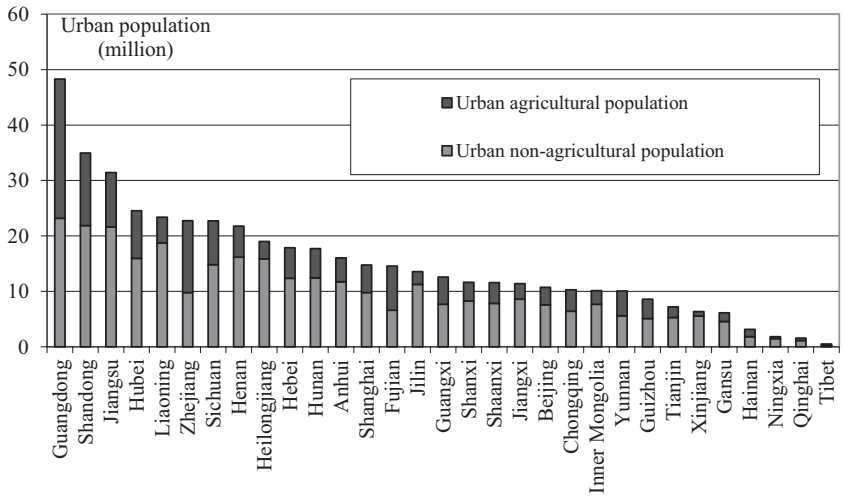
Table 3.3 Urban non-agricultural and agricultural populations 1982–2000

Region	*Urban non-agricultural population*			*Urban agricultural population*		
Absolute value (million)						
Year	1982	1990	2000	1982	1990	2000
Eastern	61.22	94.09	138.61	32.01	53.64	90.45
Central	47.15	70.35	100.23	22.12	28.29	35.42
Western	32.35	46.89	68.07	16.63	23.29	34.29
Army	4.24	3.20	2.50	0.00	0.00	0.00
China	144.95	214.52	309.41	70.76	105.22	160.17
Annual growth rates (%)						
Periods	1982–90	1990–00	1982–00	1982–90	1990–00	1982–00
Eastern	5.52	3.95	4.64	6.67	5.36	5.94
Central	5.13	3.60	4.28	3.12	2.27	2.65
Western	4.75	3.80	4.22	4.30	3.94	4.10
Army	−3.45	−2.44	−2.89	n/a	n/a	n/a
China	5.02	3.73	4.30	5.08	4.29	4.64

Data sources: Data for 1982 and 2000 are from censuses with adjustment; data for 1990 are estimated by the author (Shen 2005c; PCO and DPS, 1985; PCO and DPSSTS 2002). For estimated urban data series on China in detail, see http://www.grm.cuhk.edu.hk/~jfshen/publish.html.



a. 1982



b. 2000

Figure 3.6 Urban agricultural and non-agricultural populations in Chinese Provinces in 1982 and 2000

non-agricultural population, and the annual growth rate ranged from 1.55% in Tianjin to 7.60% in Shandong between 1982 and 2000 (Figure 3.7). Those provinces with annual growth rates above the national average of 4.30% were located in all three regions. They include six in the eastern region (Hebei, Jiangsu, Zhejiang, Shandong, Guangdong and Hainan), six in the central region (Shanxi,

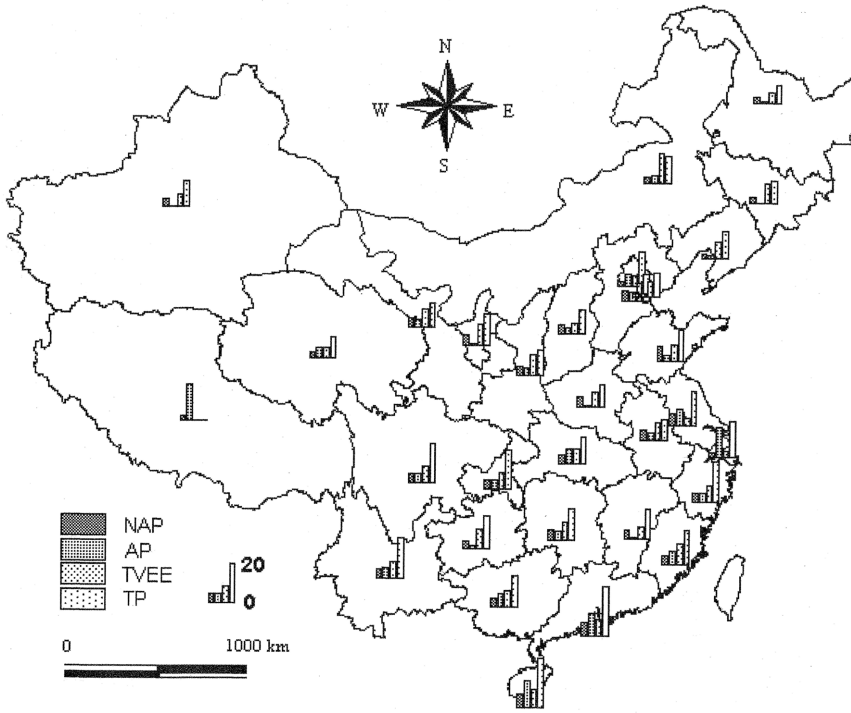


Figure 3.7 Annual growth rates of urban non-agricultural population (NAP), agricultural population (AP), TVE employment (TVEE) and temporary population (TP) in various provinces in China 1982–2000 (%)

Note: No data available for Tibet on TVE employment and temporary population. Guangdong and Hainan data on TVE employment and temporary population refer to Guangdong and Hainan as a whole. All data on Sichuan and Chongqing refer to Sichuan and Chongqing as a whole.

Anhui, Jiangxi, Henan, Hubei and Hunan) and six in the western region (Guangxi, Sichuan, Chongqing, Yunnan, Shaanxi and Ningxia). The geographical spread of these high growth areas suggests a reasonably balanced pattern of state-sponsored urbanization among the three regions.

Although the eastern region only had slightly faster growth in state-sponsored urbanization than other regions, it did have much faster growth in urban agricultural population. The annual growth rate of urban agricultural population was 5.94%, 2.65% and 4.10% in eastern, central and western regions, respectively, in the period of 1982–2000.

A correlation analysis was conducted to examine the relationship between the urban agricultural and non-agricultural populations using data for 28 provinces. Their correlation coefficients increased from 0.429 to 0.651 to 0.741 in 1982, 1990 and 2000, respectively, with each being highly significant at the 0.05 level.

Thus, the distributions of the urban agricultural and non-agricultural populations became closer over time.

Spontaneous urbanization can also be measured by considering the growth of TVE employment and the temporary population. For China as a whole, TVE employment increased from 31.13 million in 1982 to 128.20 million in 2000 (Table 3.4). TVE employment has become increasingly concentrated in the eastern region since 1982. Among the top-seven provinces each with TVE employment over 8 million in 2000, five (Hebei, Jiangsu, Zhejiang, Shandong and Guangdong) were located in the eastern region while two (Henan and Hunan) were located in the central region. However, the growth rate for TVE employment was greater in the western region than that in the eastern region in the period of 1982–2000. Annual growth rates of TVE employment were 7.71%, 8.19% and 9.45% in the eastern, central and western regions in the same period. This indicates a spatial pattern of growth slightly different from that of the urban agricultural population (Figure 3.7). But as most of the TVE employment was still concentrated in developed areas, correlation analyses indicate that there was significant association between TVE employment and the urban agricultural population, with correlation coefficients over 0.635 in 1982, 1990 and 2000. This confirms the contribution of TVE growth to spontaneous urbanization.

The temporary population increasing from 6.07 million in 1982 to 39.63 million in 1990 to a massive 109.01 million by 2000 (Table 3.4). But the spatial pattern of growth was rather different. Unlike state-sponsored urbanization, the temporary population was concentrated in a few Chinese provinces. Among the top-seven provinces each with temporary population over 5 million in 2000, six (Shanghai, Jiangsu, Zhejiang, Shandong, Guangdong and Fujian) were located in the eastern

Table 3.4 TVE employment and temporary population 1982–2000

Region	*TVE employment*			*Temporary population*		
Absolute value (million)						
Year	1982	1990	2000	1982	1990	2000
Eastern	16.39	45.93	62.40	2.53	15.91	63.37
Central	9.54	29.42	39.37	2.50	14.44	21.66
Western	5.20	17.30	26.43	1.55	9.29	23.98
China	31.13	92.65	128.20	6.57	39.63	109.01
Annual growth rates (%)						
Periods	1982–90	1990–00	1982–00	1982–90	1990–00	1982–00
Eastern	13.75	3.11	7.71	25.86	14.82	19.60
Central	15.12	2.96	8.19	24.49	4.14	12.74
Western	16.22	4.33	9.45	25.12	9.95	16.45
China	14.61	3.30	8.18	25.18	10.65	16.88

Sources: The data on regional TVE employment for 1982 are estimated by the author; see text for details. Other data on TVE are from NBS (2001: 111) and Editorial Committee (1992: 140). The data on temporary population are from the 1982, 1990 and 2000 censuses (DPS 1991: 45; PCO and DPS 1993: 6; PCO and DPSSTS 2002: 14–15).

region while one (Sichuan) was located in the western region. Annual growth rates for the temporary population were 19.60%, 12.74% and 16.45% in the eastern, central and western regions, respectively, in the period of 1982 to 2000. In the 1990s, the most rapid growth of the temporary population took place in the eastern region, increasing from 15.91 million in 1990 to 63.37 million in 2000 (Table 3.4). By 2000, the temporary population in the eastern region was much greater than the total temporary population in the central and western regions. The results show that the gap in the size of the temporary population between the three regions widened significantly in the 1990s. This spatial pattern of growth was similar to that of the urban agricultural population (Figure 3.7). Correlation analysis indicates that there was a significant relationship between the temporary and the urban agricultural populations in 1982, 1990 and 2000 (coefficients of 0.482, 0.579 and 0.931), confirming the contribution of the temporary population to spontaneous urbanization. This demonstrates the increasing importance of the temporary population in the urban agricultural population during the 1990s.

Overall, both tracks of urbanization are equally important, as indicated by the scale of changes. For China as a whole between 1982 and 2000, the urban non-agricultural population increased by 164.46 million, the urban agricultural population by 89.41 million, the TVE employment by 97.07 million and the temporary population by 102.44 million. But the speed of spontaneous urbanization was faster than that of state-sponsored urbanization. Compared with the 1980s, both tracks of urbanization slowed down in the 1990s. The TVE growth was especially slow in the 1990s, while temporary population still experienced significant growth. Clearly, migration to urban areas became an important alternative for many rural people in the 1990s.

Conclusion

This chapter has examined the new mode of urbanization, dual-track urbanization, and the empirical evidence for it in post-reform China. In the pre-reform period, only state-sponsored urbanization prevailed during the period of "urbanization from above" (Ma and Fan 1994; Lei 2001). In the post-reform period, the state has largely withdrawn from the economic sector. State sponsorship to urban residents with the hukou status of non-agricultural population has been greatly reduced. The nature of state-sponsored urbanization was transformed during the reform era, and a pro-urban regime emerged.

Since then, a new track of spontaneous urbanization has emerged in post-reform China. Rural urbanization and the growth of the urban temporary population are two important streams of spontaneous urbanization. Rural urbanization has been recognized in the literature (Ma and Fan 1994; Yan 1998), but the nature of dual-track urbanization has not been thoroughly considered (Zhu 1999). This chapter presents a consistent interpretive framework for urbanization in pre-reform and post-reform China, which helps us to understand the complicated relationships between the urban or rural residential location of people with the hukou status of non-agricultural or agricultural population, their occupational attachment to

non-agricultural or agricultural sectors and their entitlement to state sponsorship in terms of state benefits and social privileges.

The second part of the chapter examined how each of the two tracks of urbanization contributed to urbanization process in China in 1982–2000. It demonstrated that both tracks of urbanization are important, but that the speed of spontaneous urbanization was faster than that of state-sponsored urbanization. State-sponsored urbanization was well balanced between the three regions during this period, but the urban agricultural population, TVE employment and temporary population had different spatial patterns of growth. The eastern region experienced the most rapid growth of the urban agricultural population and the temporary population, although these populations began to grow rapidly in the western region after 1982. This all points to a complicated and multifaceted mode of urbanization in China during the reform period in contrast to a simple process of rural urbanization in the developed regions. These results also demonstrate the transitional nature of Chinese society in the post-reform period.

A new regime of active pro-urbanization has emerged since 1997, marked by China's tenth FYP, which was approved by the National People's Congress on March 15, 2001 (Wang 2001). This important document indicated,

> Due to increase in agricultural productivity and accelerated industrialization, it is the time to promote urbanization. An urbanization strategy should be implemented without further delay.
>
> (Wang 2001: 19)

The document also openly called for the demise of urban-rural separation:

> The urban hukou system will be reformed to form a mechanism for an orderly rural to urban migration. Discriminative restrictions on rural labors in urban areas will be abolished. Surplus rural labour will be guided to move between urban and rural areas and among regions.
>
> (Wang 2001: 20)

Dramatic steps have been taken by various cities and towns in China to accept more migrants from rural areas and to grant full urban hukou to a wide range of eligible migrants in cities such as Beijing, Shanghai, Shijiazhuang and Ningbo since early 2001 (*Mingpao Daily* 2001b). It is likely that the hukou system will be radically reformed and that it will only retain its function of population registration, while other administration functions for allocating state benefits may be scrapped. China is now moving toward a more equal mode of urbanization, and the discrimination that resulted from the rather artificial classifications of non-agricultural and agricultural population that were adhered to in the past should eventually be abolished (Figure 3.4). Nevertheless, there remains a requirement for people to have a local hukou status, and those who cannot meet such a requirement will remain defined as part of the temporary population, which is likely to continue to be an important component of spontaneous urbanization in the

near future. What this analysis really demonstrates, however, is that unlike most other developed and developing countries, the state has retained a persistent role in influencing population redistribution in transitional China (Solinger 1999a, 1999b; Shen 2005b).

Notes

1 This chapter is reprinted from Shen, J. 2006. Understanding dual-track urbanisation in post-reform China: Conceptual framework and empirical analysis. *Population, Space and Place*, 12(6): 497–516, with permission from John Wiley and Sons.

2 The data on national and regional urban NAPs were obtained from official sources (DPES 1995a, 1995b; DPSSTS 2001, 2002). Such data are collected using the hukou registration system in China and are the only reliable sources. The data on the urban population for 1982 and 2000 are available from censuses after adjusting for undercounting and differences in the definition of urban population between the two censuses (Shen 2005a, 2005c; Zhou and Ma 2003; PCO and DPS 1985; PCO and DPSSTS 2002). The data on the urban agricultural population for 1982 and 2000 are calculated as the difference between the size of the urban population and that of the urban NAP. As part of the urban population, the urban agricultural population was located in cities and towns in 1982, and city proper and town proper in 2000, as defined by the two censuses. The agricultural population in rural counties is not counted except for those in their towns or town proper. The data for the urban agricultural population for the intercensus years between 1982 and 2000 have been estimated so that they are consistent with census-based figures in 1982 and 2000 in an earlier study (Shen 2005c). The urban population data from 1990 census are not used at all because of inconsistency problems identified earlier (Shen 2005a).

3 Data on national and regional TVE employment are collected mainly from official statistics (NBS 2001: 111; Editorial Committee 1992: 140). Data on regional TVE employment in 1982 are not available, and they are estimated according to national TVE employment in 1982 and the regional distribution in 1990, adjusted by the changing levels of TVE revenues in various regions from 1982 to 1990 (NBS 1983: 208; Editorial Committee 1992: 140). Data on the temporary population are from the 1982, 1990 and 2000 censuses (DPS 1991: 45; PCO and DPS 1993: 6; PCO and DPSSTS 2002: 14–15). The temporary population from the same city was enumerated in the first time in the 2000 census. Such temporary population is excluded in the data.

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4 Spatial analysis of the urban system in Guangdong[1]

Introduction

China has entered a new age of rapid urbanization since the early 1980s, with liberal economic and migration policies (Shen 2006a, 2006b). Some interesting studies have focused on the urban system of China as a whole (Pannell 1982; Chang 1972, 1986; Fan 1988, 1999; Hsu 1994; Xu et al. 1995; Wei 1997). Economic development and urbanization is perhaps most significant in Guangdong province, which is located at the south gate of the country, adjacent to Hong Kong and Macao. It had an area of 0.18 million square kilometers and a population of 71.4 million in 1998. By any means, Guangdong is like a medium-sized country. Thus the urban system in the province has been analyzed by some early studies in the fashion of a national urban system (Xu 1986; Pannell and Veeck 1989).

Before the introduction of reform and open policy in 1978, Guangdong received little investment for industrial development, as the province was not a key region of national construction. The urbanization process was also slow. From 1949 to 1978, the average annual growth rate of the urban population in the province was only 1.61%, much lower than the national average of 1.72%. Since 1978, Guangdong has entered a new stage of rapid economic development. Its urban population increased from 10.60 million in 1980 to 24.11 million in 1990 and 48.29 million in 2000. The average annual growth rate of urban population was 8.79% in the period of 1980–2000 (Shen 2006b).

In Guangdong province, development and urbanization are most advanced in its Pearl River Delta (PRD) region (Wong and Shen 2002; Yeung and Shen 2008). Earlier studies have focused on the effect of various forces such as economic reforms, open door policy and foreign investment on the urbanization in the region (Lo 1989; Yeh et al. 1989; Xu and Li 1990; Johnson 1992; Sit and Yang 1997; Lin 2001; Li 1998; Yeung 1999). The new regime of socialist market economy officially adopted in 1994 has had a significant effect on the urbanization process and the urban system in the Guangdong province. The notions of "urbanization from below," "rural urbanization," "*Desakota* (a combination of two Indonesian words: desa for village, kota for town) model of urbanization" and "dual-track urbanization" have been adopted to characterize the new urbanization process in the post-reform period (Ma and Lin 1993; Yan and Liu 1998; Shen et al. 2006; Lin

2001). But with a few exceptions (Xu 1986; Pannell and Veeck 1989), the urban system of the province has been rarely studied. Earlier studies usually considered the urban population as the single indicator of city size. While population-based urban system studies have their own merits, more and more urban studies have shifted to the use of economic indicators in identifying the competitiveness and status of a city in the urban system (Kresl and Singh 1999; Taylor and Walker 2001).

In the case of China, population migration has been under the control of a sophisticated household registration (hukou) system. A change in the role of hukou essentially for permanent migration needs government approval. Economic reforms and the introduction of the socialist market economy have increased population mobility dramatically, but most rural migrants in cities are only registered as temporary population (Shen 2002a). There is substantial discrepancy in the city ranks in terms of population and economic indicators because of the hukou system and the way new county-level cities are designated.

It is clear that much advancement has been made in the study of the new urbanization process in post-reform China. But the resulting urban system in Guangdong province has not been thoroughly analyzed, creating a knowledge gap between the new urbanization process and the new urban system. The main purpose of this chapter is to reveal the emerging urban system hierarchy in Guangdong province using rank-size distribution as a yardstick. The differences in the urban hierarchy based on various population and economic indicators in Guangdong province will be identified and explained. The role of economic development in the urban growth of the province will be analyzed using both cross-sectional and time-series data.

The rest of the chapter is organized as follows. The first section examines the nature of the urbanization process unfolding under the socialist market economy. The next section focuses on the definition of city size, data and methodology. Section three conducts a detailed analysis of differentials in the rank-size distribution of the urban system in Guangdong using population and economic indicators, and section four examines the role of economic development in the growth of cities in Guangdong. Section five concludes the chapter.

Expanding urbanization under the socialist market economy in post-reform China

Developed countries have achieved a high level of urbanization, and therefore, a mature urbanization process that focuses on inter-city dynamics instead of urban expansion is occurring. On the other hand, developing countries are largely in a stage of expanding urbanization where industrialization and economic development are driving urban growth in terms of both the urban population and built-up area (Mcllwaine 1997; United Nations 1998; Drakakis-Smith 2000). The rank-size distributions of the urban system in more developed countries (MDCs) and less developed countries (LDCs) were found to be different. Puga (1998) attempted to explain the seemingly different pattern and size of urban agglomeration between

MDCs and LDCs using a two-region, general-equilibrium model based on increasing returns to scales. He explained that European countries developed balanced systems of cities in the nineteenth century when the costs of spatial interaction were higher, economies of scale were weaker and the pool of agricultural workers available to the urban sector was smaller than in LDCs today.

Urbanization in China has been a fascinating topic because of its unique political-social system and the changing state policy on urbanization (Trewartha 1951; Chan 1994; Pannell 1982; Shen 2006a). Fan (1999) challenged the conclusions based on the Western countries that urban growth is primarily a function of economic factors such as the scale and agglomeration economies, and the level of economic development. She argued that institutional factors are more important than economic factors of urban growth in China. Earlier studies have also revealed new processes of urbanization that are unfolding under the new institutional setting of the post-reform China. For example, a new form of urbanization has been identified and named "urbanization from below" (Ma and Lin 1993) or "rural urbanization" (Yan and Liu 1998), which refers to the development of small towns driven by rural industrialization such as TVEs instead of top-down state investment. Lin (2001) questioned the arbitrary distinction of urban and rural areas. The Asian model of urbanization, conceptualized as *desakota* by McGee (1991), was considered as more appropriate to describe the urbanization process in the PRD region. More recently, Shen et al. (2006) argued that dual-track urbanization has been going on in post-reform China and that both the state-sponsored urbanization (the growth of non-agricultural population) and spontaneous urbanization (TVE-based rural urbanization and temporary population) have been significant in PRD.

In pre-reform China, a policy of industrialization with limited urbanization prevailed, and the growth of large cities was controlled. Generally, this policy was successful for the country as a whole, producing underurbanization and a balanced urban system in the country. There was no primate city in the country as a whole. However, the case of Guangdong was an exception to the national norm. The regional urban system was dominated by Guangzhou because of an inadequate development of intermediate- and small-sized cities, and over concentration of the provincial investment and industries in the provincial capital. There were only nine cities in the province by 1978 – namely, Guangzhou, Foshan, Jiangmen, Huizhou, Zhaoqing, Shantou, Zhanjiang, Shaoguan and Maoming.

The most significant change took place in 1978 when economic reforms were introduced in China. A new pro-urban regime has emerged under the socialist market economy (Shen 2007). Urbanization has now been accepted as a positive process conducive to the country's modernization and development. Tight control on migration has been relaxed, and the population mobility has reached the highest level in China (Shen 2002a).

Although the government policy toward urbanization was more liberal, it is interesting to note that the policy controlling the growth of large cities was further consolidated by stipulating the following in urban planning law in the reform era: controlling the size of large cities and rationally developing intermediate- and small-sized cities (Wei 1997; Fan 1999). Small cities and towns, considered as

economic centers in their hinterland, were generally encouraged to develop rapidly under the new pro-urban regime (Ma and Lin 1993). Fan (1999) found that deconcentration of the population among various cities in the urban system of China took place because of its vertical and horizontal expansion. As shown in this chapter, decentralized urbanization has also taken place in Guangdong in the post-reform period.

Development of the urban system in Guangdong has much to do with the uneven regional development since 1978. In 1994, China formally declared to adopt a socialist market system, and previous constraints on private economy have been gradually removed since then (Oi 1995; Gu et al. 2001). Guangdong province has been a leader in economic reform and economic development in China since 1978 (Yeung and Chu 1998; Shen 2002b). Previous research found that a regional polarization process toward the core PRD region has occurred (Gu et al. 2001). Three key forces reshaping the spatial development in China and in Guangdong province in particular are FDI, migration and the bottom-up approach, especially the role of local government.

In the process of economic reforms, the central planning system has gradually been replaced by the market mechanisms in China. The Chinese economy has decentralized steadily with increasing power of local governments. Such changes have the most important effects on areas/cities, traditionally with a small sector of SOEs in the pre-reform period such as Guangdong. Local capital accumulation and local investment have become very important in regional development. State investment plays a decreasing role in local investment. Thus it can be expected that the development in Guangzhou, the primate city in the pre-reform era, will be relatively slower than other cities.

As mentioned before, population migration has been under the control of a hukou system. Since the early 1980s, migration policy has been relaxed gradually so that many rural people could migrate to cities for employment and business. But the national and regional labor markets are not operating freely. Most rural migrants were only allowed to register as "temporary population" in destination cities. For example, there was a temporary population of over 10 million in Guangdong in 1997 (Shen 2002a). In some cities such as Shenzhen, the size of the temporary population was even greater than the local population with full household registration. The temporary population has a significant effect on the population size and economic strength of a city, as well as the spatial urban system (Shen et al. 2006; Shen 2008).

Foreign direct investment (FDI) is often regarded as another key force of regional development in Guangdong. Many local governments in Guangdong have special incentives to attract investment from Hong Kong, Macao, Taiwan and foreign countries (Shen 2004). The urbanization induced by foreign investment has been conceptualized as exo-urbanization (Sit and Yang 1997). Here the geographical location comes into play with FDI. Because of the closeness between Hong Kong and Guangdong, about half of the total investment from Hong Kong to mainland China landed in Guangdong. The PRD region, especially Shenzhen city located to the north of Hong Kong, has attracted large

amounts of foreign investment. Previous studies have also shown that domestic investment complements foreign investment, and both of them were concentrated in PRD (Shen 2002b). These institutional, migration and economic forces will have important implications for the pace of urbanization, the concentration and deconcentration of population and economies in the urban system and the discrepancy in the distribution of population and economic indicators among various cities.

Because of a significant development taking place at the local level in the rural townships and counties outside major cities such as Guangzhou, many counties have been qualified for city status and have been designated as cities after substantial industrial/economic development. In the period of 1978–1998, the number of cities in Guangdong increased from 9 to 54. A new urban system is rapidly emerging in Guangdong province, which is the focus of this chapter. But one problem caused by the policy of "designating a whole county as a city" is that a varying and high proportion of agricultural/rural population has been included within the city boundaries (Ma and Cui 1987; Shen 1995, 2006a). There have been keen discussions on the proper definition of urban population in China (Zhou and Shi 1995). The approach of this chapter is to examine several population and economic indicators in the spatial analysis of the urban system rather than relying on one single definition of urban population as the size of a city.

Definition of city size, data and methodology

A popular approach in the study of urban system is the examination of rank-size distribution of the population of various cities within a national or regional urban system (Zipf 1949; Fan 1988). The population size of a city is used as a surrogate for the role of the city in the national or regional economy. Numerous studies have been conducted to verify and quest for causal explanation for the existence of rank-size relation or urban hierarchy (Guerin-Pace 1995; Krakover 1998; Pumain 2006; Batty 2006). Urban systems that conform to rank-size distribution are considered to have a more even and sometimes more perfect distribution of population than is the case of a primate city, representing a more advanced development stage of urban systems (Chang 1986; Xu et al. 1995; Xu 1986). The use and concept of city-size distribution has been criticized earlier. Sheppard (1982) argued that the theoretical justifications for the rank-size distribution as a desirable urban system were weak. Some recent theoretical simulation studies using the general-equilibrium economic approach provided a firm economic foundation for the existence of the rank-size relationship in urban systems (Brakman et al. 1999).

Nevertheless, the rank-size distribution of urban population has also been used as a yardstick to measure the degree of evenness of the distribution of urban population in an urban system, especially in comparison with an urban system dominated by a primate city (Wei 1997). Thus, although there are still debates about the validity of rank-size distribution as a perfect urban system, it is still a sensible benchmark to assess the even or uneven distribution of urban population in an urban system.

In many empirical studies of rank-size distribution of cities in an urban system, the population size of a city is often considered the key variable. In the theoretical studies mentioned earlier, real wages are assumed to be the same in all cities in the equilibrium status, thus population size would be an adequate surrogate of the role of cities and economic size in an urban system (Brakman et al. 1999). However, a real urban system is unlikely in a state of equilibrium, and thus there is likely to be substantial discrepancy between the rank-size distribution of population and the rank-size distribution of economic indicators. Indeed, population size is not considered very relevant in the study of world cities (Sassen 2000). More and more urban studies have shifted to the use of economic indicators, number of TNC (transnational corporations) headquarters, air-traffic flows and inter-city interactions to identify the competitiveness and status (such as world city or global city) of a city in the urban system (Kresl and Singh 1999; Taylor and Walker 2001), although urban system studies focused on population size have their own merit, especially in the understanding of population dynamics.

In the case of cities in Guangdong, there are significant differences in GDP per capita and living standards between large and small cities. As the market system is far from equilibrium, it is sensible to analyze the rank-size distribution of cities in terms of economic indicators. One objective of this chapter is to identify and explain the differences in the emerging urban hierarchy based on population and economic indicators in Guangdong province.

The issue of defining the population size of a Chinese city is considered first. Indeed, it is not an easy task, as the population living in the city is not unarguably considered as an urban population (Shen 1995, 2006b). There are three main reasons. First, some Chinese cities, especially newly designated county-level cities, usually include large rural areas with a large rural population (Ma and Cui 1987). Such a county-level city has usually been converted from a whole county, which is, excluding designated towns under its administration, normally considered as a rural area.

Second, population in China is officially classified into two categories according to its unique hukou (household registration) system – agricultural population and non-agricultural population. The non-agricultural population enjoys many welfare benefits provided by the state and mostly lives in the urban proper of Chinese cities (Shen et al. 2006; Chan 1994; Chan and Zhang 1990). Before the 1982 census, only the non-agricultural population was considered an urban population, and this definition has been used in many studies (Shen 2006b; Fan 1999). But such a definition has also become unrealistic. Much of the agricultural population has been employed in the expanding township industries within the town or city boundaries, or moved into urban areas, but the majority of such a population remains registered as agricultural population.

Third, since 1985, rural migrants have been allowed to move into urban areas and to be registered as temporary population (Shen 2002a). Such registered or unregistered rural migrants are often called floating population (temporary population or non-hukou population). But the official urban population statistics usually only include the hukou population with permanent local hukou while the non-hukou population is excluded. Thus there is no unique definition of urban

population in China. In this chapter, the non-agricultural population, the hukou population and the total population (including the temporary population) will be used to measure the size of a city. Instead of choosing only one indicator, these three indicators give a complete picture of the population size of a city and also show how different urban hierarchy will be due to different definitions of urban population.

In addition to population indicators, GDP, commercial wholesale and retail value and total retail value are also used to measure the economic power of a city. The National Bureau of Statistics (1999) collects and compiles the economic data for the cities in China through the nationwide statistical offices in various cities. The official data from the National Bureau of Statistics were critically reviewed earlier. Despite some inconsistencies and limitations, the official data were considered to be authoritative and reliable, as Western-style accounting methods have been adopted since 1993 (Holz and Lin 2001).

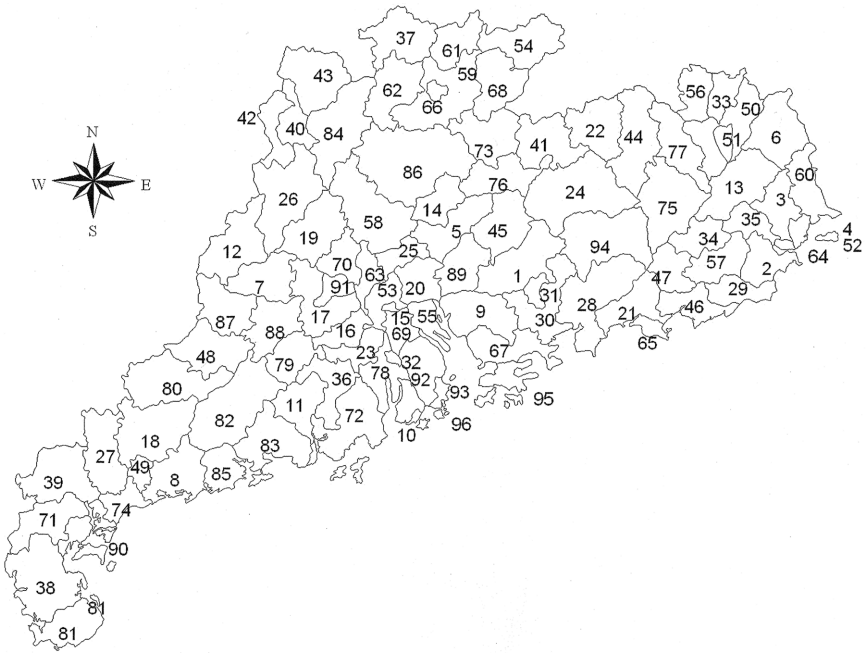
The population and GDP data for the year 1998 are from Guangdong Provincial Statistical Bureau (1999). The data on wholesale and retail value for the year 1997 are from National Bureau of Statistics (1999). The temporary population data for nine cities, including Guangzhou, Shenzhen, Nanhai, Jiangmen, Taishan, Xinhui, Kaiping, Heshan and Enping, are extracted from various yearbooks of these cities (Guangzhou Yearbook Editorial Board 1996; Nanhai Yearbook Editorial Committee 1996; Jiangmen City Statistical Bureau 1996; Shenzhen Statistics and Information Bureau 1996). The temporary population (non-hukou population) in the remaining cities in Guangdong is estimated using the ratio of non-hukou population to total population estimated from the 1% sampling data in 1995 (Guangdong Population Sample Survey Office 1996). The 1% population sample survey was the best source for the non-hukou population of various cities. The total population of a city is then obtained by adding the temporary population to the hukou population.

The rank-size analysis in this chapter will cover all the cities in Guangdong. In Guangdong, there were two kinds of cities – prefecture-level cities and county-level cities. A prefecture-level city may administer an urban proper and some county-level cities or counties. In this chapter, a prefecture-level city refers to its urban proper and excludes any county-level units under its administration. Guangdong had 21 prefecture-level cities and 33 county-level cities in 1998. In addition, there were 46 counties in the province. Figure 4.1 shows the distribution of cities and counties in Guangdong in 1998.

In terms of methodology, the rank-size distribution is used as a benchmark to measure the distribution of the urban population and the economic indicator in the urban system in Guangdong. Zipf's rank-size rule (q = 1) or more general rank-size distribution can be described by the following formula:

$$P_r = \frac{P_1}{r^q} \tag{4.1}$$

Here P_r is the population size of the city ranked r; q is the coefficient.



Notes:

1.Boluo	21.Haifeng	41.Lianping	61.Renhua	81.Xuwen
*2.Chaoyang	22.Heping	42.Lianshan	62.Ruyuan	*82.Yangchun
*3.Chaozhou	*23.Heshan	*43.Lianzhou	*63.Sanshui	*83.Yangjiang
*4.Chenghai	*24.Heyuan	44.Longchuan	*64.Shantou	84.Yangshan
*5.Conghua	*25.Huadu	45.Longmen	*65.Shanwei	85.Yangxi
6.Dapu	26.Huaiji	*46.Lufeng	*66.Shaoguan	*86.Yingde
7.Deqing	*27.Huazhou	47.Luhe	*67.Shenzhen	87.Yu`nan
8.Dianbai	28.Huidong	*48.Luoding	68.Shixing	*88.Yunfu
*9.Dongguan	29.Huilai	*49.Maoming	*69.Shunde	*89.Zengcheng
10.Doumen	*30.Huiyang	50.Meixian	*70.Sihui	*90.Zhanjiang
*11.Enping	*31.Huizhou	*51.Meizhou	71.Suixi	*91.Zhaoqing
12.Fengkai	*32.Jiangmen	52.Nan`ao	*72.Taishan	*92.Zhongshan
13.Fengshun	33.Jiaoling	*53.Nanhai	73.Wengyuan	*93.Zhuhai
14.Fogang	34.Jiexi	*54.Nanxiong	*74.Wuchuan	94.Zijin
*15.Foshan	*35.Jieyang	*55.Panyu	75.Wuhua	
*16.Gaoming	*36.Kaiping	56.Pingyuan	76.Xinfeng	*95.Hong Kong
*17.Gaoyao	*37.Lechang	*57.Puning	77.Xingning	*96.Macao
*18.Gaozhou	*38.Leizhou	*58.Qingyuan	*78.Xinhui	
19.Guangning	*39.Lianjiang	59.Qujiang	*79.Xinxing	
*20.Guangzhou	40.Liannan	60.Raoping	*80.Xinyi	

(* refer to cities and others are counties. Hong Kong and Macao are not part of Guangdong province)

Figure 4.1 The administrative division of Guangdong province in 1998

To see whether the urban system in Guangdong province conforms to the rank-size rule, expected values of various indicators have been calculated by dividing the value of the top city by the ranks of various cities using the following formula:

$$E_{ir} = \frac{X_{i1}}{r} \tag{4.2}$$

Here X_{i1} is the largest value of indicator i of the top city; E_{ir} is the expected value of the indicator i of the city ranked r. The correlation coefficients between the real values and expected values of particular indicators are calculated.

The squared Euclidean distance is also used to measure the difference between the expected values and real values of an indicator for various cities. To make it comparable, all values for an indicator are standardized so that the maximum value is one using the following formula:

$$X_{ir}^{s} = \frac{X_{ir}}{X_{i1}} \tag{4.3}$$

$$E_{ir}^{s} = \frac{E_{ir}}{E_{i1}} \tag{4.4}$$

Here X_{ir} and X_{ir}^{s} are the real and the standardized values of indicator i of the city ranked r; E_{ir} and E_{ir}^{s} are the expected and the standardized value of the indicator i of the city ranked r.

Squared Euclidean distance (D_i for indicator i) is then calculated in the following:

$$D_i = \sqrt{\sum_r \left(X_{ir}^{s} - E_{ir}^{s}\right)^2} \tag{4.5}$$

In most analyses of rank-size distribution of cities, the focus is on the fitness of the whole urban system against the rank-size distribution. However, it is argued here that it is especially important to examine the fitness of top cities that are the most important in the urban system. An urban system may be found to fit with the rank-size rule very well, but the top-two cities may be at odds with the rank-size rule. This chapter proposes to give special consideration of top-two, four and ten cities in the urban system to compliment the overall measure of fitness based on squared Euclidean distance.

Thus primacy index, four-city primacy index, the share of top-ten cities and rank-size distribution of the aforementioned six population and economic indicators will be used to analyze the urban system of 54 cities in Guangdong. The first two indexes measure the relative positions of top-two and top-four cities. In the case of non-agricultural population, for example, the primacy index is the ratio

of the non-agricultural population of the largest city to that of the second largest city. The four-city primacy index is the ratio of the non-agricultural population of the largest city to the total non-agricultural population of the second-, third- and fourth-largest cities. The third index measures the relative position of top-ten cities in the urban system, i.e., the non-agricultural population share of top-ten cities in total population of all cities. These indexes can be defined similarly for other population and economic indicators.

Table 4.1 shows the primacy index, the four-city primacy index and the share of top-ten cities in an ideal urban system of 54 cities conforming to Zipf's rank-size rule (Zipf 1949). In such an ideal urban system, the primacy index is 2 and the four-city primacy index is 0.92 with 64.02% of the population of the urban system concentrated in top-ten cities.

Differentials in the rank-size distribution of the urban system using population and economic indicators

This section will examine the differentials in the rank-size distribution of the urban system using population and economic indicators in Guangdong province. The primacy index, the four-city primacy index, the share of top-ten cities and the fitness measures for the urban system by various indicators are presented in Table 4.1. Table 4.2 presents the top-ten cities in the urban system in Guangdong according to various indicators.

Table 4.1 Primacy index, four-city primacy index and other indicators of the urban system in Guangdong in 1998

Indicator	*Expected by rank-size rule*	*Non-agricultural population*	*Hukou population*	*Total population*	*GDP*	*Commercial wholesale and retail value*	*Total retail value*
Primacy index	2.00	3.68	1.84	1.30	1.01	3.78	2.05
Four-city primacy index	0.92	1.43	0.70	0.59	0.67	1.77	1.18
Share of top-ten cities (%)	64.02	45.53	37.95	40.85	61.46	70.82	64.86
R for real and expected values	1.00	0.963	0.925	0.939	0.938	0.968	0.989
Squared Euclidean distance between standardized, real and expected values	0.00	0.109	1.127	1.063	0.268	0.129	0.038

Data sources: Guangdong Statistical Bureau (1999) and National Bureau of Statistics (1999); see text for the estimation of total population, including the temporary population.

Table 4.2 Top-ten cities in the urban system in Guangdong in 1998 (US$1= RMB 8.28 in 1998)

Ranks	*Non-agricultural population (thousand)*	*Hukou population (thousand)*	*Total population (thousand)*	*GDP (RMB billion)*	*Commercial wholesale and retail value (RMB million)*	*Total retail value (RMB million)*
1	Guangzhou 3,306	Guangzhou 3,993	Guangzhou 4,699	Guangzhou 130	Guangzhou 19,146	Guangzhou 6,685
2	Shenzhen 899	Chaoyang 2,175	Shenzhen 3,606	Shenzhen 129	Shenzhen 5,070	Shenzhen 3,265
3	Shantou 832	Puning 2,011	Chaoyang 2,191	Dongguan 36	Shantou 3,779	Shantou 1,299
4	Zhanjiang 589	Dongguan 1,487	Dongguan 2,140	Nanhai 28	Foshan 1,994	Dongguan 1,102
5	Shaoguan 431	Gaozhou 1,437	Puning 2,078	Shunde 26	Dongguan 1,922	Nanhai 905
6	Foshan 411	Lianjiang 1,409	Nanhai 1,555	Zhongshan 25	Zhongshan 1,859	Zhongshan 771
7	Zhongshan 390	Huazhou 1,332	Gaozhou 1,496	Panyu 24	Zhuhai 1,858	Zhuhai 767
8	Chaoyang 390	Zhanjiang 1,308	Lianjiang 1,459	Zhuhai 22	Shunde 1,731	Zhanjiang 747
9	Nanhai 381	Zhongshan 1,301	Zhanjiang 1,456	Shantou 21	Nanhai 1,686	Shunde 619
10	Dongguan 378	Leizhou 1,272	Zhongshan 1,367	Zhanjiang 16	Xinhui 1,270	Foshan 597

Data source: Guangdong Statistical Bureau (1999) and National Bureau of Statistics (1999); see text for the estimation of total population, including the temporary population.

Urban hierarchy based on population size of cities

As mentioned before, three different definitions of urban population will be used to represent different urban hierarchies in Guangdong. The first definition of urban population refers to the non-agricultural population. Under such definition, Guangzhou, Shenzhen, Shantou and Zhanjiang were the top-four cities in 1998 with non-agricultural population of 3.3 million, 0.9 million, 0.8 million and 0.6 million, respectively. Similar to the situation in the pre-reform period, Guangzhou was still a primate city in Guangdong, with a primacy index of 3.68. The four-city primacy index was also as high as 1.43. Both indexes were larger than those in an urban system conforming to the rank-size rule. The main reason is the continuous control of migrants in acquiring local household registration. Thus the growth of non-agricultural population in other cities such as Shenzhen has not challenged the primate city status of Guangzhou.

Figures 4.2 and 4.3 present the real and expected rank-size distributions of 54 cities based on the non-agricultural population. It is clear that the change in the size of top-two cities is steeper than that of rank-size rule, but the change in size from the 4th city to the 54th city is less steep. Top-ten cities accounted for

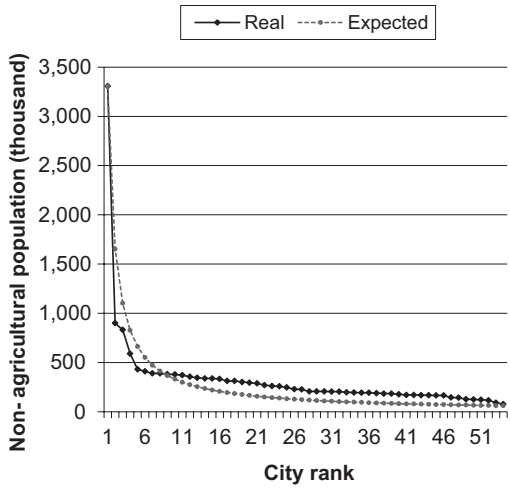


Figure 4.2 Rank-size distribution of non-agricultural population in cities in Guangdong in 1998

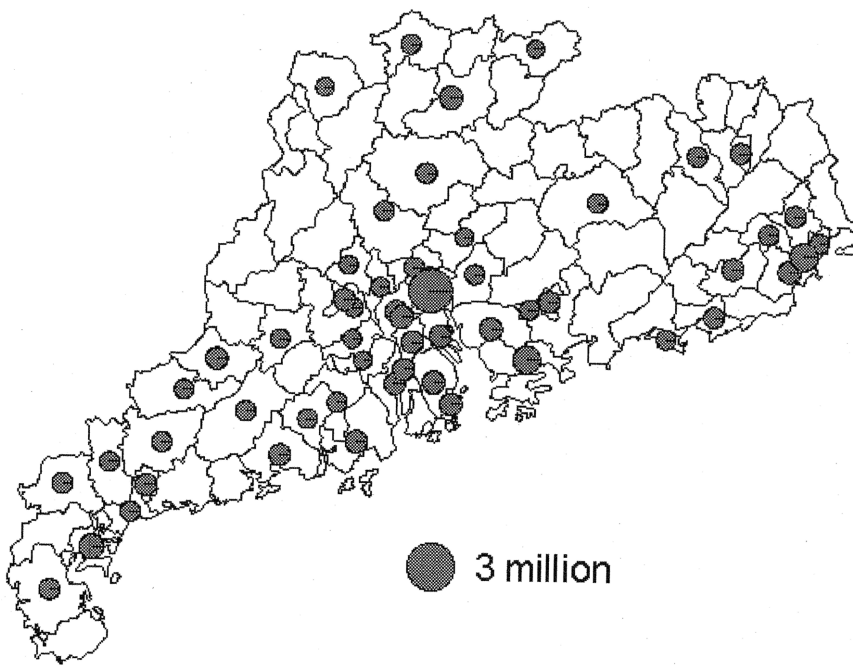


Figure 4.3 Non-agricultural population in cities in Guangdong in 1998

45.53% of the non-agricultural population in the urban system, much less than the expected 64.02% in an urban system conforming to the rank-size rule. Nevertheless, overall, the correlation coefficient (0.963) and the squared Euclidean distance (0.109) indicate that the real and expected rank-size distributions of non-agricultural population are close. It is clear that whether the top-two, four, ten or all cities are taken into account is vital in determining whether the city-size distribution is consistent with rank-size rule. One overall index such as the correlation coefficient may hide great unfitness among top cities in an urban system.

The second definition of urban population is the hukou population, which includes both the agricultural population and non-agricultural population with household registration in the city. Some cities had a large share of agricultural population, resulting in a different rank-size distribution of cities in the urban system. Guangzhou, Chaoyang, Puning and Dongguan were the top-four cities in 1998 with hukou populations of 4.0 million, 2.2 million, 1.80 million and 1.5 million, respectively. As the provincial capital, Guangzhou had a large hukou population and kept its top position for a long time. Because of hukou control, the hukou population only grew slowly in many Chinese cities. The relaxed mobility of the temporary non-hukou population did not increase the size of the hukou population in many cities. Shenzhen, which is often considered the second largest city in the province, only had a small agricultural population with local hukou as most of such population had been granted non-agricultural population status in the process of rapid urbanization. Thus it only had 1.15 million hukou population and ranked 12th in Guangdong, as its large non-hukou population was not counted.

In the urban hierarchy based on the hukou population in various cities, the primacy of Guangzhou was weaker than in the case of non-agricultural population. Its primacy index was only 1.84. The four-city primacy index was also as small as 0.70. Both indexes are smaller than those in an urban system conforming to the rank-size rule. The key reason is that Guangzhou only had a small proportion of agricultural population as the most developed city in the province, while other cities, especially those converted from previous counties, had a substantial proportion of agricultural population. When the agricultural population and non-agricultural population were combined, the primacy of Guangzhou was smaller than in the case of non-agricultural population.

Figures 4.4 and 4.5 present the real and expected rank-size distributions of 54 cities based on the hukou population. It is clear that the second and third largest cities were stronger in the case of non-agricultural population and the change in the size from the fourth city to the 54th city was less steep. Top-ten cities accounted for only 37.95% of the hukou population in the urban system, indicating more even distribution of hukou population in the system. The correlation coefficient (0.925) and the squared Euclidean distance (1.127) indicate that the expected and real rank-size distributions of hukou population are less close than those of non-agricultural population (Figures 4.2 and 4.4).

The third definition of urban population is the total population, including both the hukou population and temporary population. In the reform period after the early 1980s, Guangdong, and especially the cities in PRD, has become the main

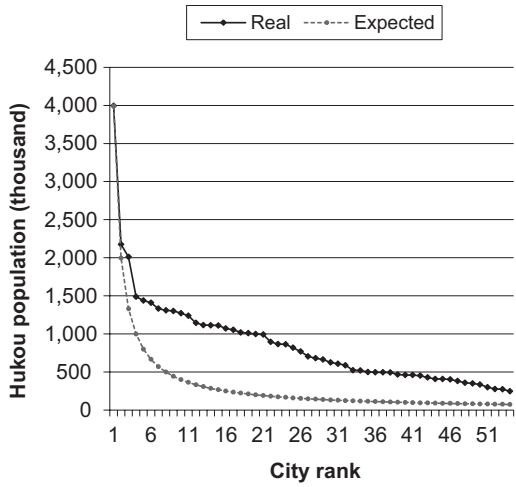


Figure 4.4 Rank-size distribution of hukou population in cities in Guangdong in 1998

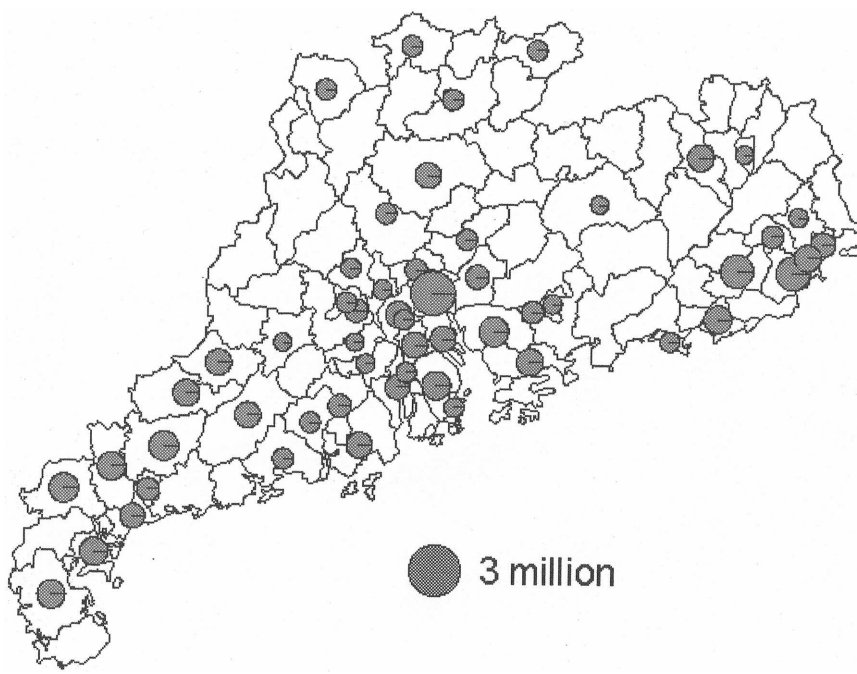


Figure 4.5 Hukou population in cities in Guangdong in 1998

destination for rural migrants from both Guangdong and other provinces. According to the estimation in this chapter, there was a temporary population of 7.26 million in the 54 cities in Guangdong. Figure 4.6 presents the real and expected rank-size distributions of 54 cities based on the total population.

In terms of total population, Guangzhou, Shenzhen, Chaoyang and Dongguan were the top-four cities in 1998 with total populations of 4.7 million, 3.6 million, 2.2 million and 2.1 million, respectively. When temporary population was included, Shenzhen became the second largest city in Guangdong, again because of its large temporary population. The size of total population in Shenzhen was very close to that of Guangzhou. As a result, Guangzhou's primacy was significantly weakened with a primacy index of only 1.30. The four-city primacy index was also as small as 0.59. Top-ten cities accounted for 40.85% of the total population in the urban system. These indicators show that the rank-size distribution of the total population was less steep than expected from the rank-size rule.

Except for top cities such as Guangzhou and Shenzhen, the effect of the temporary population on the distribution of the total population of other cities was small. Thus the correlation coefficient (0.939) and the squared Euclidean distance (1.063) indicate that the difference between the expected and real rank-size distributions of total population is similar to that of the hukou population (Figures 4.4 and 4.6). Figures 4.7 and 4.8 show the distribution of the total population and temporary population in Guangdong. The distribution of the total population is also more even than that of an urban system conforming to the rank-size rule. However, the second largest city in terms of total population (Shenzhen) was not the same second largest city in terms of hukou population (Chaoyang). The real urban hierarchy was changed when different population indicators were used, while the rank-size distribution appeared to be similar.

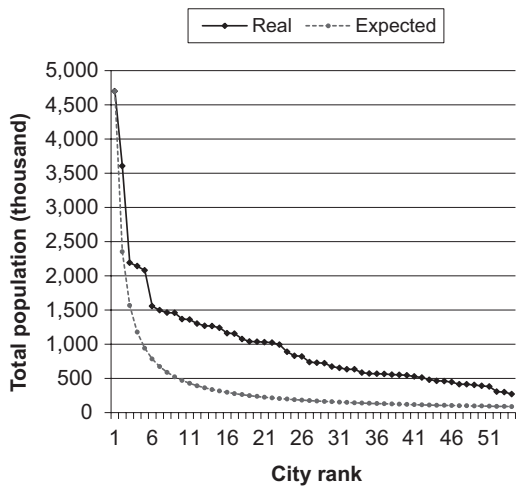


Figure 4.6 Rank-size distribution of total population in cities in Guangdong in 1998

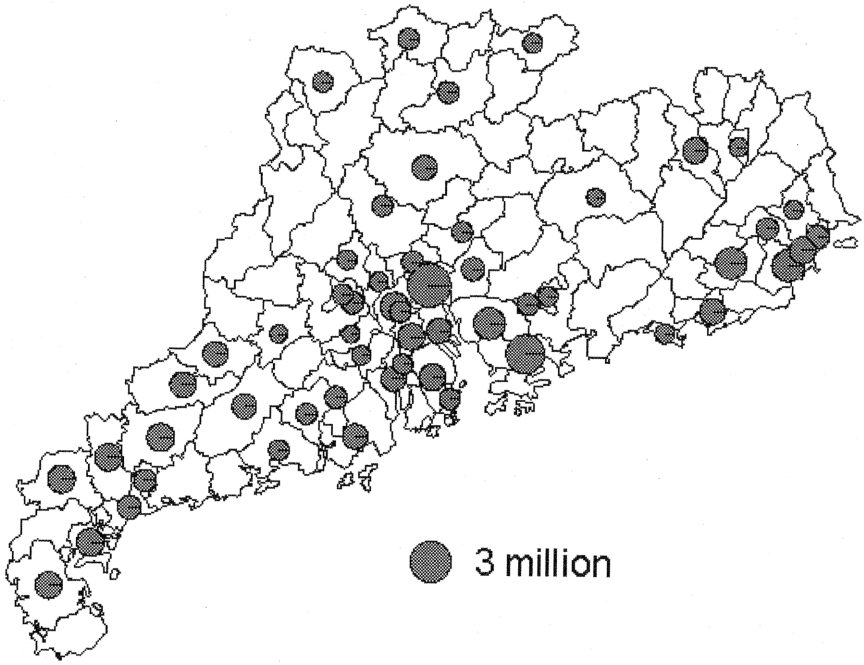


Figure 4.7 Total population in cities in Guangdong in 1998

The earlier analyses show the complicated nature of urban hierarchy in the urban system in Guangdong owing to a peculiar population registration system. The issue of which of the aforementioned three definitions is the best definition of urban population has not been solved, as each of them has its limitations and advantages. The non-agricultural population is a strict definition of urban population that was used commonly before the 1982 census. But this definition excludes agricultural populations in cities that actually no longer engage in agriculture but are unable to acquire non-agricultural population status. The hukou population overcomes the earlier problem, but it may also include too much agricultural population, which still engages in agriculture. The definition of non-agricultural population and that of the hukou population exclude the temporary population, which has become an important part of the population in many cities. The total population solves the aforementioned problem by including the temporary population as well. But the definition of total population has the same problem as the definition of hukou population and may include too much agricultural population, which still engages in agriculture.

Urban hierarchy based on economic indicators of cities

As mentioned before, traditionally, rank-size analysis of urban systems has been focused on population indicators. Because of significant inequality in GDP per

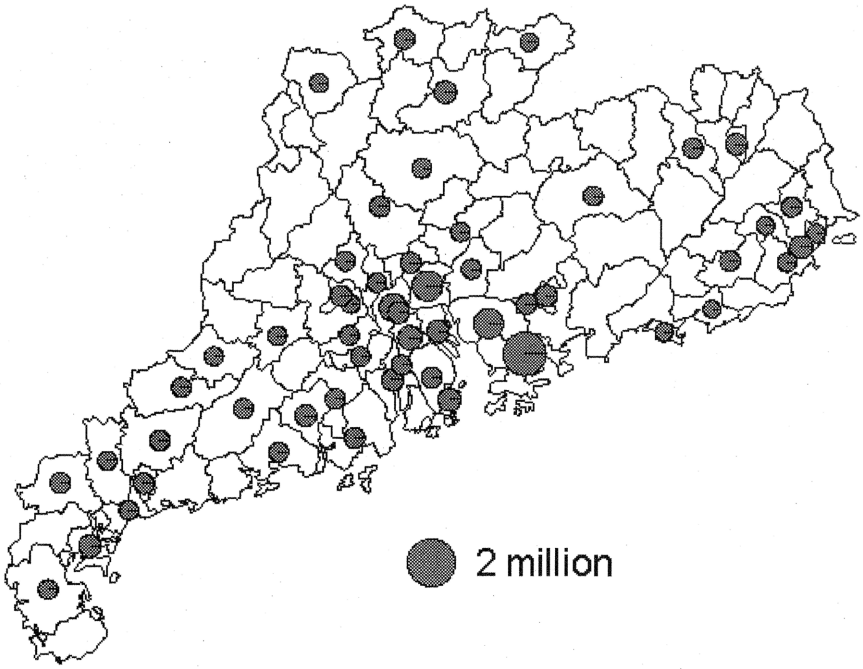


Figure 4.8 Temporary population in cities in Guangdong in 1995

capita and the level of development among various cities, the population size of a city is not a good surrogate for the economic power of a city. Thus it is sensible to examine the rank-size distribution of economic indicators to reveal the economic inequality among various cities in an urban system. This also provides an opportunity to compare the rank-size distribution of economic indicators versus that of population size in an urban system, especially under a condition of a socialist market economy. Three economic indicators are considered in this section.

In terms of GDP, Guangzhou, Shenzhen, Dongguan and Nanhai were the top-four cities in 1998. Clearly, Guangzhou and Shenzhen had the same economic power, and they were two dominant economic centers in the urban system in Guangdong. This situation was different from that of the early 1980s when Guangzhou was the dominant economic center in PRD and Guangdong (Gu et al. 2001; Shen 2002b). The Shenzhen economy grew rapidly in the 1980s and 1990s because of the dramatic inflow of foreign capital and the temporary population. The primacy index was 1.01 in terms of GDP. The four-city primacy index was also as small as 0.67. These two indexes indicate that the distribution of GDP was far away from the rank-size rule. But the top-ten cities accounted for 61.46% of GDP in the urban system, and this share was close to an urban system conforming to the rank-size rule. Figures 4.9 and 4.10 present the real and expected rank-size distribution of 54 cities based on the GDP. Other than

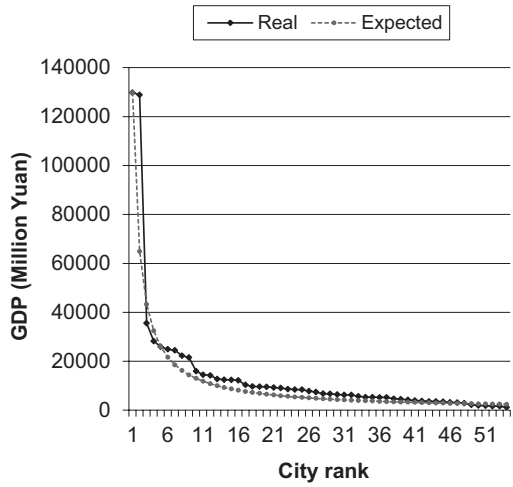


Figure 4.9 Rank-size distribution of GDP in cities in Guangdong in 1998

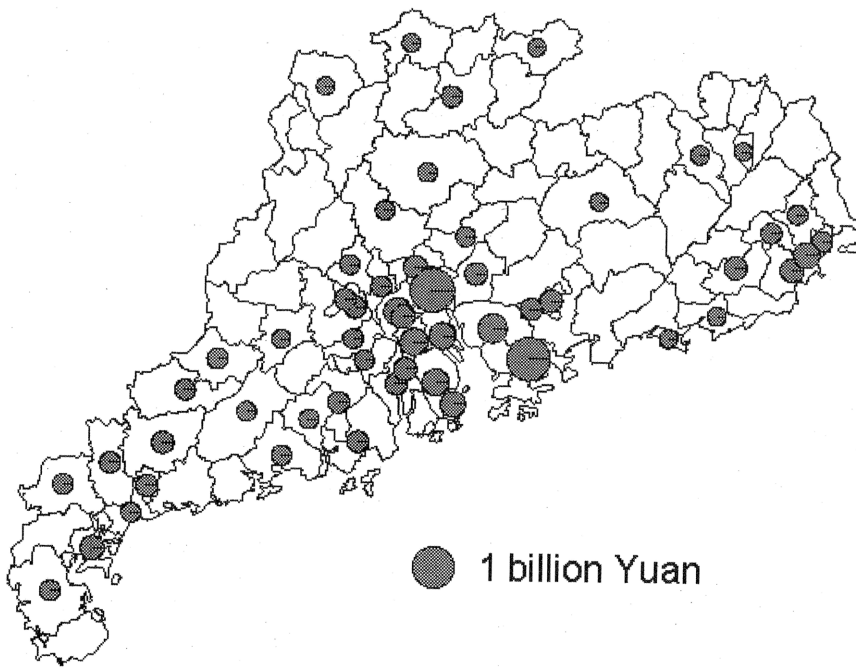


Figure 4.10 GDP in cities in Guangdong in 1998

the top-two cities, the real and expected distributions of GDP among various cities were close, confirmed by small squared Euclidean distance (0.268). The correlation coefficient of 0.938 was not so reliable, as it was close to the case of total population, which had a much larger difference in the expected and real distributions. This case explains why squared Euclidean distance is preferred to measure the difference between real and expected distributions of various indicators.

Similar to the non-agricultural population, Guangzhou has a strong primacy in terms of the commercial wholesale and retail value, with a primacy index of 3.78. In terms of the total retail value, the primacy index was 2.05, which was close to the rank-size rule. Guangzhou is clearly the trading center of the province. Despite of the large GDP in Shenzhen, its trading volume was still much smaller than Guangzhou. It is also interesting to note that, similar to the distribution of GDP among various cities in Guangdong, over 65% of the trading value was concentrated in top-ten cities. Guangzhou, Shenzhen and Shantou were the top-three cities with the largest commercial wholesale and retail value, and the total retail value. The rank-size distribution of the commercial wholesale and retail value among the top-ten cities was much steeper than that of the rank-size rule, indicating strong primacy. But the change in the commercial wholesale and retail value from the 10th city to the 54th city and the change in the total retail value from the 3rd city to the 54th city were close to the rank-size rule (Figures 4.11–4.14). Overall, the distributions of these two indicators were close to the rank-size rule indicated by large correlation coefficients (0.969 and 0.989) and small squared Euclidean distances (0.129 and 0.038).

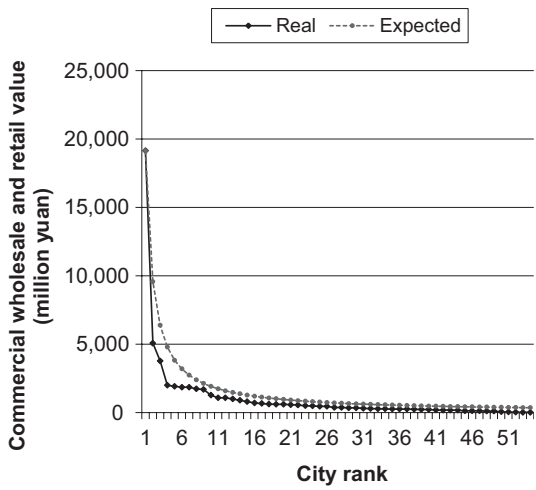


Figure 4.11 Rank-size distribution of commercial wholesale and retail value in cities in Guangdong in 1997

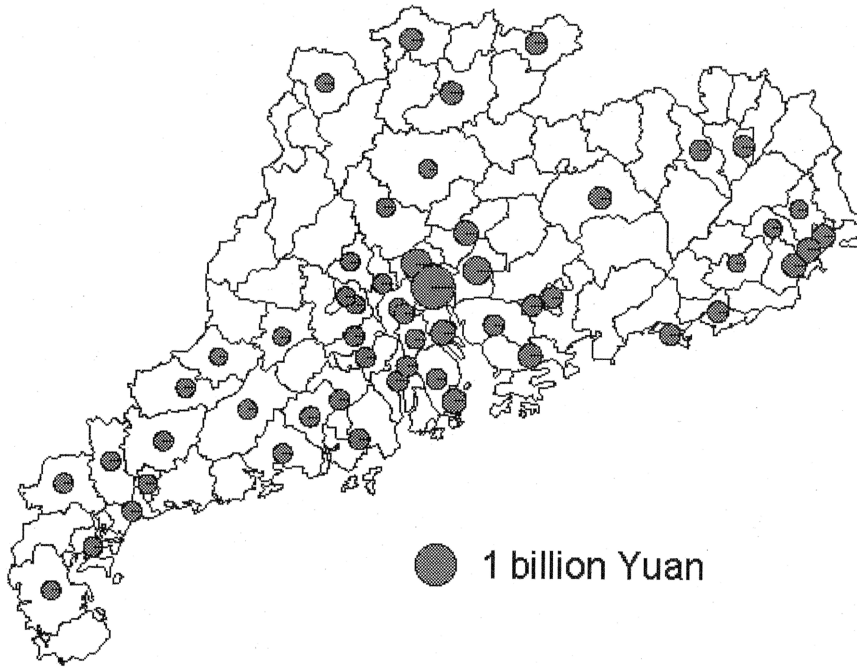


Figure 4.12 Commercial wholesale and retail value in cities in Guangdong in 1997

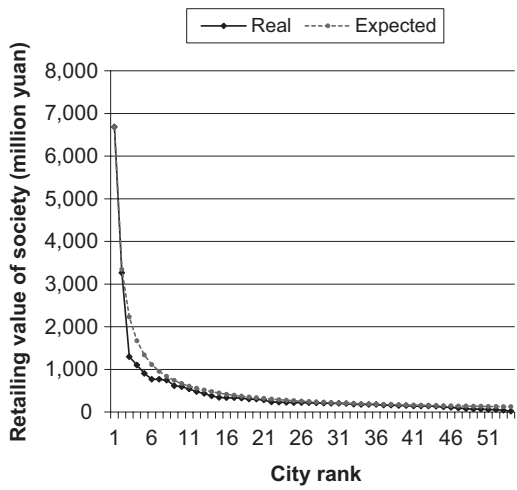


Figure 4.13 Rank-size distribution of retailing value in cities in Guangdong 1997

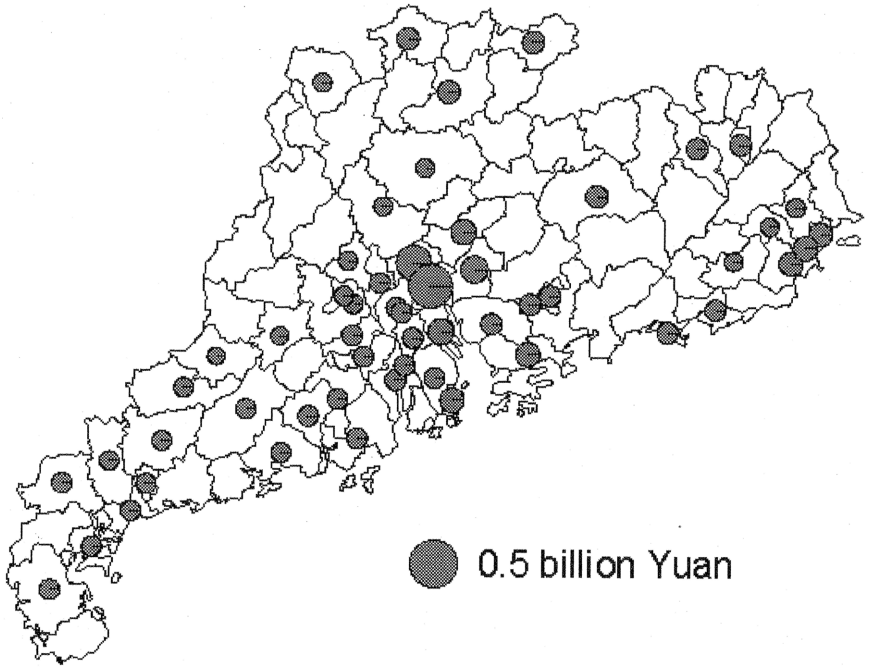


Figure 4.14 Retailing value in cities in Guangdong in 1997

A discussion on measuring urban hierarchy using different measures

Primacy index, four-city primacy index, share of top-ten cities, correlation coefficient and squared Euclidean distance have been used to assess whether the rank-size distribution of an indicator conforms to Zipf's rank-size rule. It is clear that different indexes assess part or all of the cities in the urban system. The primacy index, the four-city primacy index and the share of top-ten cities focus on the top-two, four and ten cities, while correlation coefficient and squared Euclidean distance measure the whole urban system. The case of the urban system in Guangdong indicates that these different measures are not consistent, and different conclusions may be obtained.

In terms of top-two cities, Guangzhou's primacy was clear in the non-agricultural population and the commercial wholesale and retail value. Guangzhou's primacy was less clear in the total hukou population, the total retail value, the total population and the GDP.

Taking all cities in the urban system of Guangdong into account, the correlation coefficients between expected and real values of six indicators were all highly significant at the 0.001 level. This is similar to most analyses of the rank-size

distribution. The high correlation is related to the nature of the data, as the rank variable is a transformation of the size variable (Brakman et al. 1999). Thus the correlation coefficient is not a satisfactory measure. Particularly, the difference between the expected value and the real value is much larger in the case of total population than the case of GDP, but the correlation coefficients are very close for the two indicators, 0.939 and 0.938, respectively. The squared Euclidean distance is more satisfactory. It indicated that the distribution of total retail value was the closest to the rank-size rule, while the distributions of the hukou population and total population were the least close to the rank-size rule. Indeed, the distributions of the hukou population and total population were closer than the rank-size rule.

The findings in this section indicate that the rank-size distributions of an urban system are not the same when different population and economic indicators are used to represent city size. Such dissimilar distributions reflect inequality, differences in industrial structures, non-hukou population and migration from rural areas in industrial transformation. Consideration of economic concentration may be as important as that of population concentration, as the issues of inequality and unbalanced development are best assessed in terms of a per capita basis.

The role of economic development in the process of urbanization

Scale and agglomeration economies and the level of economic development are powerful explanations for urban growth and urban systems in developed countries. The role of economic development in the urbanization of LDCs is not so certain because of the notions of overurbanization and underurbanization (Drakakis-Smith 2000). In the case of China, Fan (1999) argued that institutional factors, including policy, socialist administrative system and local governments, are more important than economic factors in explaining the growth of various cities in the urban system.

It is argued here that there are economic foundations for any policy change and institutional intervention. For example, for a county to acquire the status of a designated city in China, it has to reach certain thresholds of non-agricultural population and economic power. Some counties may be designated as a city because of special considerations and back-door lobbying. But such cases may be considered exceptions rather than the norm. Well-qualified counties are unlikely to be denied the chance of acquiring the city status. Thus economic development is likely to be a key factor of urban growth despite the significant influence of institutional factors. The question is whether a study is focused on the institutional factors or the economic factors and at what spatial scale. In Guangdong, there is little difference in the urbanization policy, except Guangzhou and the role of economic development is likely to be more important in the growth of individual cities.

It cannot be assumed that economic growth will inevitably result in urban growth, as both underurbanization and overurbanization could happen in developing countries (Drakakis-Smith 2000). In Western countries, economic growth will not result in further urban expansion because of a high level of urbanization.

As mentioned before, policy on migration, especially the temporary population, has been relaxed, and urban development has been encouraged by the government in post-reform China. Thus a close relationship between economic development and urbanization is expected. This section attempts to explore the relationship between economic development and urbanization using two sets of data. First, the levels of economic development and urbanization between PRD and non-PRD areas in Guangdong are compared. Second, time-series data on economic growth, urban built-up areas and employment of nine prefecture-level cities in PRD were used to illustrate the role of economic development in the process of urbanization.

The following will first contrast the differential urbanization in PRD and non-PRD areas in the province. Table 4.3 presents the population, GDP, share of non-agricultural population and GDP per capita in Guangdong province. It is clear that the PRD region had a more advanced economy than the non-PRD region. The PRD region accounted for 67% of the GDP with only 31.2% of the total population in the province. The population share of the PRD region would still be lower than its GDP share even if a temporary population of 7 million was included in the total population of PRD (Shen 2002b). Economic concentration in the PRD region was a result of the regional polarization process reinforced by the good economic foundation of the region, geographical proximity to Hong Kong, capital investment from Hong Kong and abroad, local government initiatives and

Table 4.3 Population and GDP indicators by area types in Guangdong 1998

Areas	*No. of units*	*Non-agricultural population (thousand)*	*Agricultural population (thousand)*	*Total population (thousand)*	*GDP (RMB billion)*	*Share of non-agricultural population (%)*
PRD	28	10,573	11,803	22,376	585	47.3
Prefecture-level city	9	6,687	3,356	10,043	387	66.6
County-level city	16	3,409	7,205	10,614	179	32.1
County	3	477	1,242	1,719	18	27.7
Non-PRD	72	11,617	37,525	49,142	288	23.6
Prefecture-level city	12	3,839	2,976	6,815	81	56.3
County-level city	17	3,650	15,590	19,240	97	19.0
County	43	4,128	18,959	23,087	110	17.9
Guangdong	100	22,190	49,328	71,518	873	31.0
Prefecture-level city	21	10,526	6,332	16,858	468	62.4
County-level city	33	7,059	22,795	29,854	276	23.6
County	46	4,605	20,201	24,806	128	18.6

Data source: National Bureau of Statistics (1999).

favorable "one step ahead" reform and open door policies in the region (Gu et al. 2001; Shen 2002b).

On the other hand, cities were relatively concentrated in the PRD region because of its significant economic development in the province (Shen 2002b). Among 28 area units in the PRD, there were 25 cities and only 3 counties. Among 72 area units in the non-PRD region, there were 29 cities and as many as 43 counties. Using the strictest non-agricultural population as the definition of the urban population, PRD was the most urbanized region in Guangdong. For the PRD region as a whole, non-agricultural population accounted for 47.3% of the total population in 1998. But in the non-PRD region, the share of non-agricultural population in the total population was as low as 23.6%.

The relationship between economic development and urban growth is better assessed through time-series data. Consistent data were collected for nine prefecture-level cities over the period of 1990–1998 in the PRD region (Urban socio-economic survey team 1999).

Figure 4.15 presents the GDP growth in various cities in the period of 1990–1998. The GDP data are based on the current price and are not directly comparable between years. However, the data do illustrate the relative growth of various cities. Guangzhou's GDP share in the PRD region declined from 42.80% in 1980 to 24.44% by 1990. The relative decline in the 1990s was much less, and its GDP share was 22.20% in 1998. On the contrary, the rise of Shenzhen was exceptional. Its GDP share increased from 1.82% in 1980 to 13.56% in 1990 and 22.04% in 1998. Shenzhen caught up with Guangzhou rapidly in the 1990s. Rapid economic growth in Shenzhen was powered by vigorous industrialization and upgrading of its economic structure. By 1998, Shenzhen had become a prominent center of high-tech industry in China. High-tech industry output reached RMB 81 billion, accounting for 35.4% of the total industrial output of the city (Shenzhen Planning Bureau 1999).

Rapid economic growth is instrumental to urban growth. The size of the built-up area is a good indicator of urban growth, which can be measured physically.

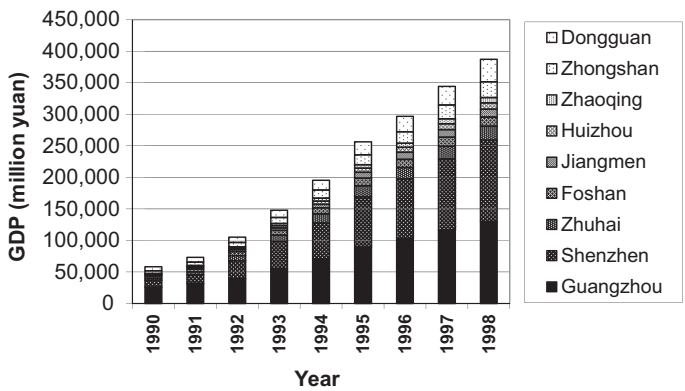


Figure 4.15 Growth of GDP in the prefecture-level cities in PRD 1990–1998

Figure 4.16 presents the expansion of the built-up area of the prefecture-level cites in PRD over the period of 1990–1998. It is clear that most cities experienced sizable growth in this period. Guangzhou had the largest built-up area, which grew from 182 km^2 to 275 km^2 in the period. Shenzhen was the second largest city in terms of built-up area, which grew from 69 km^2 to 129 km^2 in the same period.

Other than the built-up area, population is the most preferable indicator of the size of a city. However, as mentioned before, the official population statistics for Chinese cities usually do not include the temporary non-hukou population. The data on the temporary population were collected in some surveys such as the 1990 census and the 1% population sampling survey in 1995. But no consistent data for all prefecture-level cities for the whole period of 1990–1998 were available. Thus this section will use the number of employees as an approximate indicator of population size in various cities. The employment data cover most non-hukou population as well as the part of the hukou population that was employed. Of course, this indicator will exclude the dependent population as well as some unemployed people.

Figure 4.17 presents the growth in employment in various cities in the period of 1990–1997. Reliable employment data for 1998 were not available. The size of employment in Guangzhou increased from 2.10 million to 2.50 million, while the number of employees in Shenzhen increased dramatically from 0.60 million to 2.72 million in the period of 1990–1997. The size of employment in Shenzhen had surpassed Guangzhou indeed. As Shenzhen had a higher proportion of migrant workers who usually did not bring their dependents, the total population in Shenzhen was still smaller than Guangzhou. In addition, most migrant workers also lived in quarters provided by employers. Thus Shenzhen's built-up area was not as large as Guangzhou.

Finally, a correlation analysis was conducted, and correlation matrixes among three main indicators were calculated for each of the nine prefecture-level cities in the PRD region. The correlation coefficients for Guangzhou and Shenzhen are presented in Tables 4.4 and 4.5, respectively. All correlation coefficients were significant at the 0.05 level. GDP growth had significant correlation with built-up

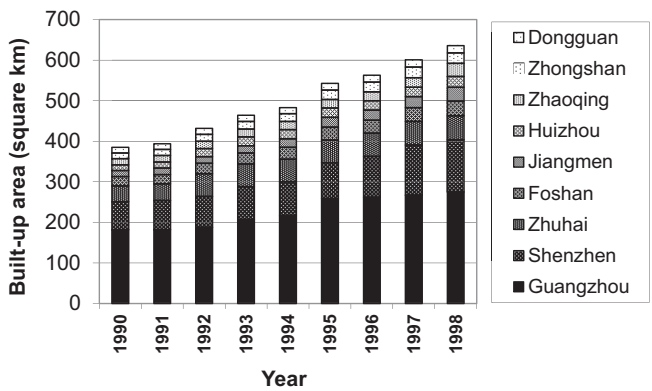


Figure 4.16 Growth of built-up area in the prefecture-level cities in PRD 1990–1998

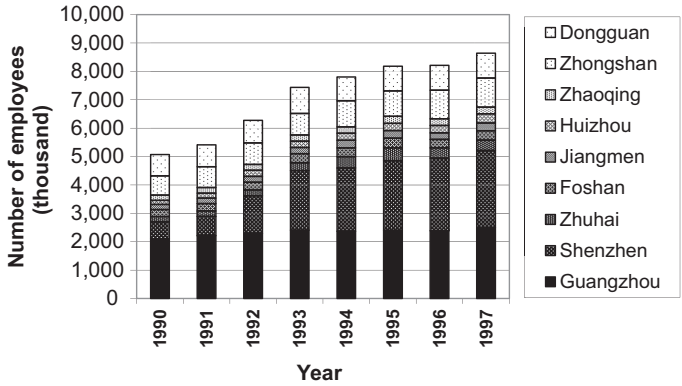


Figure 4.17 Growth of employment in the prefecture-level cities in PRD 1990–1997

Table 4.4 Correlation coefficients among three indicators in Guangzhou

Indicator	*Built-up area*	*Number of employees*	*GDP*
Built-up area	1		
Number of years	9		
Number of employees	0.801	1	
Number of years	8	8	
GDP	0.981	0.854	1
Number of years	9	8	9

Note: All correlation coefficients were significant at the 0.05 level.

Table 4.5 Correlation coefficients among three indicators in Shenzhen

Indicator	*Built-up area*	*Number of employees*	*GDP*
Built-up area	1		
Number of years	9		
Number of employees	0.802	1	
Number of years	8	8	
GDP	0.958	0.929	1
Number of years	9	8	9

Note: All correlation coefficients were significant at the 0.05 level.

area or the size of employment in all cities, confirming the close relationship between economic development and urban growth.

Conclusion

This chapter analyzed the urban system in the Guangdong province as a result of uneven development and urbanization under the socialist market economy.

Much advancement has been made in the study of the new urbanization process in post-reform China. This chapter hopes to fill the knowledge gap between the new urbanization process and the emerging new urban system. Recognizing the substantial discrepancy among the rank-size distribution of cities in terms of population and economic indicators, especially because of the existence of the "temporary population" and the policy of "designating a whole county as a city," the urban system in Guangdong province was analyzed using demographic and economic indicators.

Many previous theoretical and empirical studies of rank-size distribution of cities in an urban system used the population size of a city as the key variable, and all cities were covered in assessing whether the urban system conforms to the rank-size rule. This chapter used two innovative approaches in the analysis of the urban system. First, particular focus was given to top-two, four and ten cities in the urban system, as these leading cities play important roles. Second, economic indicators were used directly as alternative indicators of city size in the analysis of rank-size distribution of cities. A real urban system is unlikely in a state of equilibrium, which is assumed in theoretical studies using the general-equilibrium economic approach.

The chapter found that the primacy of Guangzhou in Guangdong varied by population and economic indicators. The primacy index was the largest in terms of non-agricultural population and commercial wholesale and retail value, as Guangzhou continued to be the trading center of the province and the growth of non-agricultural population was largely controlled. The primacy index was close to two (which was the case for Zipf's rank-size rule) in terms of hukou population and total retail value. The primacy index was the smallest, just over one, in terms of total population and GDP. Considering city size in terms of total population and GDP, the urban system in the region now has the twin centers of Guangzhou and Shenzhen. This is largely because of a large temporary population and dramatic economic growth in Shenzhen.

When the relative positions of top-four cities were considered, the four-city primacy of the total retail value was close to that of Zipf's rank-size rule, while those of the non-agricultural population and commercial wholesale and retail value were much greater, indicating significant primacy of the top city, Guangzhou. The four-city primacy of hukou population, total population and GDP were smaller than that of Zipf's rank-size rule (0.92). It is clear that the extent of primacy is different between the cases of top-two and top-four cities. When the relative position of top-ten cities in the urban system was considered, the non-agricultural population and hukou population showed more even distribution, while the distributions of other indicators were much closer to that of Zipf's rank-size rule (top-ten city share 64.02%). It is clear that this result is different from the case of top-two cities. For example, Guangzhou has a significant primacy when top-two cities were considered in terms of non-agricultural population, but the concentration of non-agricultural population in top-ten cities was more even than that of Zipf's rank-size rule.

When all cities in the urban system were considered, correlation coefficient and squared Euclidean distance showed different results. Squared Euclidean distance

showed that the difference between the real and expected rank-size distributions was the largest for the hukou population and total population, and smallest for total retail value.

Overall, the analysis in this chapter showed that rank-size distributions of various population and economic indicators were not the same. Urban hierarchy was found to be dependent on which indicator was used to represent city size. The relative positions of top-two, four, ten and all cities in the urban system may not be consistent in terms of their fitness with the rank-size rule. These findings pointed out the usefulness to examine the rank-size distribution of urban size based on various population and economic aspects, and the relative positions of top cities in the urban hierarchy.

The current urban system in Guangdong is a result of economic development, urban policy and other institutional factors. Earlier studies have emphasized the role of government policy in the urban development in China (Fan 1999; Wei 1997). The chapter argued that the role of economic development is also important, while acknowledging the effects of institutional factors (Shen et al. 2006). Indeed, the different urban hierarchies based on different definitions of urban population are largely a result of the Chinese hukou system. On the other hand, the rise of Shenzhen as one of the two major economic centers in the urban system of Guangdong is related to the rapid economic growth of the city. Preliminary results of the chapter show that the high level of urbanization in the PRD region is associated with its advanced economy in contrast with the non-PRD region in Guangdong province. Similarly, correlation analysis of time-series data shows significant correlation between the economic variable and the size of urban built-up area and employment.

Clearly, economic factors play an important role in the recent expanding urbanization in Guangdong and in China in general. This does not exclude the role of policy and institutional factors, but any institutional reforms and policy changes must be based on sound economic foundations. The right institutions and policies will only work in regions and cities with the right economic foundations. This is also why the experience of Guangdong cannot be easily repeated elsewhere, especially in the poor western region of China, by introducing the same set of policies and institutions.

Note

1 This chapter, with some figures and tables updated, is reprinted from Shen, J. 2008. Spatial analysis of the urban system in Guangdong province of south China using population and economic indicators. *The Open Geography Journal*, 1: 1–14, with permission from Bentham OPEN.

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5 Urban growth and sustainable development in Shenzhen city[1]

Introduction

Many studies have been carried out on economic development and urbanization in China (Wu and Xu 1990; Yan 1991; Shen 1995, 2006a, 2006b). Some studies have also raised concerns of environmental consequences and implications for use of resources from China's recent rapid development (Smil 1993; Hu et al. 1995; Shen 1998, 2004). As China steadily moves forward to become an industrialized and urbanized society, huge environmental impacts might be produced. Officially, Chinese government has launched Agenda 21 and introduced a series of laws and regulations for environment protection and sustainable development. A perspective of scientific development is emphasized to achieve resource and energy efficiency for sustainable development in recent years. Major problems remain in implementation and enforcement, as local governments often give priority to economic development.

This chapter will use the city of Shenzhen as a case study to examine urban development and its environmental implications in China. Although Shenzhen currently does not experience significant overurbanization, high unemployment and poverty problems, which are common in many developing countries (Gugler 1988; Gilbert 1994), it does face the increasing pressure of population growth, land use and environmental pollution.

Pearl River Delta (PRD) is one of the most rapidly developing regions in China. There are two special economic zones (SEZs) in the PRD – namely, Shenzhen and Zhuhai, which were designated by the Chinese government in 1980. The SEZs have been the test bed of China's economic reform and open door policies since the 1980s and 1990s to take advantage of their close ties with Hong Kong and Macao. For example, a series of housing reform policies and programs have been introduced in Shenzhen SEZ to promote housing commodification and housing ownership (Chiu 1993). Shenzhen is also a pioneer in urban planning and in adopting market mechanisms for the allocation of land resources (Zhu 1999).

Currently, there are six districts and four new districts in Shenzhen city. The Shenzhen SEZ included only four districts (Futian, Luohu, Nanshan and Yantian districts) before July 2010, and it was extended to the whole city after July 2010 (adding Baoan and Longgang districts and four new districts). Before July 2010,

there was an internal boundary between the SEZ and non-SEZ, which was also called the second boundary in contrast to the first boundary between Hong Kong and Shenzhen SEZ. There was tight control in the secondary boundary in the 1980s and 1990s, but this was relaxed in later years. The total area of Shenzhen city is 1952.84 km^2, which is almost double the size of Hong Kong, and the previous area of the Shenzhen SEZ is 395.82km^2 (Shenzhen Statistics Bureau 2007). Shenzhen is ideally positioned near Hong Kong to act as the window of China to the outside world. Indeed, Hong Kong is densely populated with a population of about seven million with limited land resources. In the last three decades, Hong Kong investors have invested heavily in Shenzhen and other cities in PRD for industrial and non-industrial development. Hong Kong and Shenzhen have very close economic and trade ties (Wong and Shen 2002; Yeung and Shen 2008). Shenzhen provides many opportunities for Hong Kong's capital and information resources and management skills. There are increasing concerns about inter-city competition and the need for cooperation between Hong Kong and Shenzhen (Shen 2008).

There has been rapid economic, population and urban growth in Shenzhen. The pace of development is beyond the imagination of many people and the initial projection of planners in the Shenzhen Planning Bureau in 1981. The initial projected population in the Shenzhen SEZ was 0.4 million in 1990 and 1.0 million by the year 2000, which was reached in 1985 and 1989, respectively. The population in the Shenzhen SEZ was increased to 1.51 million in 1995 and 3.19 million in 2006 and 3.54 million in 2010. For the city of Shenzhen as a whole, its population was increased to 4.49 million in 1995, 8.71 million in 2006 and 11.38 million in 2015 (Shenzhen Statistics Bureau 2007). The population figure is based on the official statistics, including the population that stayed in Shenzhen over half a year.

Some studies have focused on the development in Shenzhen (Chu et al. 1981; Lee et al. 1982; Wong et al. 1992). Sun (1996) considered the issue of future development in Shenzhen in the context of PRD and its relation with Hong Kong, while Ng (2003) reviewed the urban development and planning of the city. On the other hand, some scholars considered the environmental problems in Shenzhen SEZ in the context of its geographical setting and industrialization-lead economic growth (Hsu 1983; Ng 2002; Lai and Yang 1994). The contrast and the relation between Hong Kong and Shenzhen have also been the focus of recent studies (Ng 2002; Yang 2005). Liu et al. (2007) examined the relationship between development level and environment for the period of 1989–2003. They found that environment quality related to NO_x and total suspended particulates in the air, and biochemical oxygen demands (BODs) and total phosphorus in Shenzhen River improves with development. But some pollutants induced by consumption such as SO_2 increased with development. Population growth and concentration seem to cause environmental stress in the city.

The rest of the chapter is organized into four sections. The following section will discuss the urban economic growth. The second section will examine the population growth and migration in Shenzhen. The third section will analyze the effect of rapid urban growth on agriculture and environment. Some conclusions are reached in the fourth and final section.

Urban economic growth

Shenzhen SEZ has implemented a series of favorable and flexible policies to attract investment and stimulate economic growth (Ma and Fang 1993; Ng 1994; Lu 1995). These favorable conditions have attracted much investment from Hong Kong and abroad. China's domestic capital has also quickly moved into Shenzhen to take the advantage of its close economic and trading ties with Hong Kong and the overseas market. There has been dramatic growth both in terms of GDP per capita and the total GDP.

The GDP in the city of Shenzhen was greatly expanded from RMB 196 million in 1979 to RMB 581 billion by the year 2006. During the period of 1980–1994, the GDP was growing at a rate of more than 30% a year in most years. There was also high growth of 14%–20% a year in the period 1995–2006. The GDP per capita in the city was also increased rapidly from only RMB 835 in 1980 to RMB 69,450 (US$8,712) by the year 2006.

The GDP per capita growth rate was negative only in two years, 1986 and 1989, when GDP growth was relatively slow. Table 5.1 compares the GDP per capita in China, Guangdong province, PRD and the city of Shenzhen. The most noticeable are the similar levels of GDP per capita in these areas in 1980 when the economic reform began. The development process since 1980 greatly altered this regional balance. By the year 2006, Shenzhen city had become one of the most advanced cities in China.

Shenzhen's economic structure has also undergone significant change in this rapidly growing period. There has been a steady shift from primary sector to the secondary sector, while the tertiary sector has been relatively stable. The share of the secondary sector in GDP increased from 26.0% in 1980 to 53.4% in 1993 and then stabilized to reach 52.5% in 2006. The share of the tertiary sector in GDP was stable at 45.1% in 1980 and 47.4% in 2006. By the year 2006, the secondary

Table 5.1 GDP per capita in China, Guangdong, PRD and the city of Shenzhen 1980–2006

Year	*China*	*Guangdong*	*PRD*	*City of Shenzhen*
1980 (RMB)	463	481	500	835
1985 (RMB)	858	1,026	n/a	4,809
1990 (RMB)	1,644	2,484	3,148	8,724
1995 (RMB)	5,046	8,129	18,242	19,550
2000 (RMB)	7,858	12,736	18,094	32,800
2005 (RMB)	14,040	24,438	41,990	60,801
2006 (RMB)	15,973	28,332	49,153	69,450
2006 (US$)	2,004	3,554	6,166	8,712

Data sources: Shenzhen Statistics Bureau (2007), Lu (1995), National Bureau of Statistics (2006), Guangdong Provincial Bureau of Statistics (1992, 1996, 2001, 2006, 2007) and Shen et al. (2006).

Note: US$1 = RMB7.9718 in 2006 (Guangdong Provincial Bureau of Statistics 2007). GDP per capita in PRD in 1980–1995 was based on hukou population and would be smaller than the figure if a large total population was used.

sector was the largest sector, which accounted for 57.43% of all employees in the city of Shenzhen. The SEZ provides more service functions than areas outside the SEZ in the city. In 2006, the tertiary sector accounted for over 62.9% of GDP, while the share of the secondary sector was below 38% in the Futian, Luohu and Yantian districts. Nanshan district had an economic structure similar to that of the Baoan and Longgang districts, with the share of the secondary industry in GDP around 66%–67% (Shenzhen Statistics Bureau 2007).

Rapid economic growth in Shenzhen is made possible by the heavy inflow of capital, labor and associated technology and information. Many studies tended to emphasize the role of foreign investment, while the contribution of domestic investment was often ignored. However, it was found that the investment from domestic enterprises also formed quite a large portion of the total investment (Hu 1989; Shen et al. 2001).

Recent statistical data provided further evidence. Table 5.2 presents the total investment and foreign direct investment (FDI) in the city of Shenzhen over the period of 1981–2006. The original data are in terms of RMB and have been translated into US dollars using the annual average official exchange rate. In 1995, the main sources of FDI in the city were Hong Kong (60.3%), Japan (18.5%), USA (8.2%), Taiwan (4.0%), UK (0.6%) and Singapore (0.5%) (Shenzhen Statistics and Information Bureau 1996). In 2006, the main sources of FDI were Hong Kong (51.2%), Singapore (3.5%), USA (2.2%), Japan (1.4%), Taiwan (0.9%), Germany (0.7%), Netherlands (0.7%) and UK (0.5%). The sources become more diversified, and other sources contributed over 39.0% in 2006 (Shenzhen Statistics Bureau 2007).

Several points are clear about the investment trends in the city of Shenzhen and the Shenzhen SEZ. First, there has been massive investment in the city of Shenzhen. The total investment in the city of Shenzhen amounts to US$125.92 billion and the foreign investment of US$33.74 billion over the period of 1981–2006.

Table 5.2 Total and foreign direct investment in the city of Shenzhen 1981–2006

Year	*Total investment (RMB billion)*	*Total investment (US$ billion)*	*FDI in the city (US$ billion)*	*FDI share of total investment (%)*
1981	0.30	0.17	0.09	49.61
1985	3.33	1.13	0.18	15.85
1986	2.49	0.72	0.36	50.64
1990	6.23	1.30	0.39	29.92
1995	27.58	3.30	1.31	39.66
1996	32.75	3.94	2.05	52.06
1997	39.31	4.74	1.66	35.03
2000	61.97	7.49	1.96	26.20
2005	118.11	14.42	2.97	20.59
2006	127.37	15.98	3.27	20.46

Data sources: Calculation by the author and also Shenzhen Statistics Bureau (2007) and Guangdong Provincial Bureau of Statistics (2007).

Second, both the domestic and foreign investment had been increasing steadily in that period with slight fluctuations. Annual total investment increased from US$0.17 billion in 1981 to US$3.30 billion in 1995 and US$15.98 billion in 2006. Annual FDI increased from US$0.09 billion in 1981 to US$1.31 billion in 1995 and US$3.27 billion in 2006. Third, both domestic and foreign capitals are important sources of investment in the city of Shenzhen. FDI has been particularly important in the period of 1981–1996, accounting for over 50% of the total investment in a few years. FDI accounted for 26.79% of the total investment in the period of 1981–2006. Fourth, the main destination of FDI in the city is the SEZ. It seems that such concentration has decreased in recent years. About 90% of FDI was concentrated in the SEZ over the period of 1981–1991. But the proportion of FDI in the SEZ was gradually declined to only 60% by 1995.

Capital is one of the three main production factors in addition to labor and technology. In a city such as Shenzhen with a sufficient supply of both skilled and unskilled labor from various areas, capital is perhaps one of the main forces in stimulating economic development. On the other hand, suitable technology can be imported and used with efficient management and a skilled labor force. The relationship between the GDP (G), FDI (I) and domestic investment (D) in Shenzhen city is analyzed using regression analysis. The data series covers a period of 26 years from 1981 to 2006, and all data take log transformation. As a result, the following regression equation is obtained. T-values of the regression coefficients are provided in brackets.

$$\begin{aligned} \text{Ln } G &= 1.302 + 0.565 \text{Ln } I + 0.645 \text{ Ln } D \\ &\quad (15.224) \quad (8.043) \quad (9.118) \\ R^2 &= 0.997; \quad \text{Adj.} R^2 = 0.993; \quad F = 1{,}686 \end{aligned} \tag{5.1}$$

Equation 5.1 shows a close relationship between the GDP output, FDI and domestic investment.

Migration and population growth

Economic growth and massive investment in Shenzhen have generated a number of job opportunities and attracted many migrants from various areas in China. Shenzhen had a population of 8.46 million in year 2006. This figure includes 1.97 million registered population (hukou population) whose residence registration (hukou) was in Shenzhen and 6.50 million temporary population (non-hukou population) whose residence registration was not in Shenzhen but they had stayed in Shenzhen for over six months. Here hukou registration refers to official ways that ordinary Chinese register with the government either as agricultural population or as non-agricultural population at a particular place. The transfer and change of such hukou registration between places and from the status of agricultural population to that of non-agricultural population is still largely under tight control despite important progress in hukou reform (Shen 2006a). However,

people have been allowed to move to other areas and to register temporarily with the government at their place of residence and employment since 1984 (Wu and Xu 1990; Yan 1991; Shen 2006a; Martin 1992). Therefore, there are two kinds of migrants in China – hukou migrants who transfer their hukou registration along with their move and non-hukou migrants who only register as temporary population at their destination but leave their hukou registration at their origin. Most of the hukou migrants are professional, technical and highly skilled persons whose number is much smaller than that of non-hukou migrants.

Table 5.3 presents the growth of the hukou population and temporary population in the city of Shenzhen. The total population in Shenzhen increased rapidly from 0.31 million in 1979 to 4.49 million in 1995, 8.71 million in 2006 and 11.38 million in 2015. Initially, the hukou population accounts for the majority of the population in the city. In 1981, the share of the hukou population in the total population was still as high as 91%. However, this proportion steadily declined to only 22.08% in 1995 and 17.81% in 2000, though the number of hukou population had increased from 0.31 million in 1979 to 1.25 million by 2000. This is due to the much rapid increase in the temporary population. The temporary population in the city increased from about 1,500 in 1979 to 3.50 million in 1995 and 5.76 million in 2000. The temporary population accounted for only 0.48% of the total population in 1979, but it accounted for 82.19% of the total population in the city in 2000. In the period of 2000–2015, the hukou population increased from 1.25 million to 3.55 million, and its share in total population increased from

Table 5.3 Population growth in the city of Shenzhen 1979–2015

Year	*Total population (million)*	*Hukou population (million)*	*Share of hukou population in total population (%)*	*Temporary population (million)*	*Share of temporary population in total population (%)*	*Population growth in the year (million)*	*Share of migration in population growth (%)*
1979	0.31	0.31	99.52	0.00	0.48	n/a	n/a
1980	0.33	0.32	96.40	0.01	3.60	0.02	73.39
1981	0.37	0.33	91.01	0.03	8.99	0.03	82.91
1985	0.88	0.48	54.29	0.40	45.71	0.14	97.09
1986	0.94	0.51	54.99	0.42	45.01	0.05	91.96
1990	1.68	0.69	40.92	0.99	59.08	0.26	96.60
1991	2.27	0.73	32.29	1.54	67.71	0.59	98.34
1995	4.49	0.99	22.08	3.50	77.92	0.36	96.97
1997	5.28	1.09	20.74	4.18	79.26	0.45	97.51
2000	7.01	1.25	17.81	5.76	82.19	0.69	97.84
2005	8.28	1.82	21.98	6.46	78.02	0.27	91.95
2006	8.71	1.97	22.60	6.74	77.40	0.43	94.44
2010	10.37	2.51	24.20	7.86	75.80	0.42	91.04
2015	11.38	3.55	31.20	7.83	68.80	0.60	88.85

Data sources: Calculation by the author and the Shenzhen Statistics Bureau (2007, 2016).

17.81% to 31.20%. Overall, Shenzhen is an outstanding city in China that its population mainly consists of temporary population.

It will be of interest to examine the population dynamics in Shenzhen SEZ, which is presented in Table 5.4. The total population in SEZ increased rapidly from only 94,100 in 1980 to over 1.51 million in 1995, 3.19 million in 2006 and 3.54 million in 2010. Both the hukou population and temporary population increased over the period. The hukou population increased from 84,100 in 1980 to 1.59 million by 2010. The temporary population increased from 10,000 in 1980 to 1.96 million by 2006. The temporary population accounted for 61.52% of the total population in 2006 and 55.17% in 2010 in SEZ. The Shenzhen SEZ included only four districts (Futian, Luohu, Nanshan and Yantian districts) before July 2010, and it was extended to the whole city after July 2010 (adding Baoan and Longgang districts and four new districts). There are several important features in the population dynamics in SEZ that are different from the general population trend of the whole city.

First, two contrasting periods, 1980–1987 and 1988–2010, can be identified (Figure 5.1). In the first period, the proportion of the temporary population was higher in SEZ than in the whole city. In the second period, the proportion of the temporary population was smaller in the SEZ than in the whole city. The areas outside the SEZ actually attracted more temporary population than the SEZ. It appears then that there is a gradual transition toward a more balanced population growth in the SEZ. The share of temporary population was stable around 55%–65% at SEZ in the period of 1988–2010. Second, there is no steady increasing trend in the scale of annual population growth, especially since 1985. Both the

Table 5.4 Population growth in the Shenzhen SEZ 1980–2010

Year	*Total population (million)*	*Hukou population (million)*	*Share of hukou population in total population (%)*	*Temporary population (million)*	*Share of temporary population in total population (%)*	*Population growth in the year (million)*	*Share of migration in population growth (%)*
1980	0.09	0.08	89.37	0.01	10.63	n/a	n/a
1985	0.47	0.23	49.36	0.24	50.64	0.13	98.27
1986	0.49	0.26	52.67	0.23	47.33	0.02	87.16
1990	1.01	0.40	39.15	0.61	60.85	−0.02	136.18
1991	1.20	0.43	36.07	0.77	63.93	0.19	96.43
1995	1.51	0.60	39.66	0.91	60.34	0.04	80.45
1996	1.60	0.63	39.48	0.97	60.52	0.09	92.95
1997	1.75	0.68	38.90	1.07	61.10	0.15	95.51
2000	2.05	0.78	38.15	1.27	61.85	0.15	93.41
2006	3.19	1.23	38.48	1.96	61.52	0.05	n/a
2010	3.54	1.59	44.83	1.95	55.17	0.23	n/a

Data sources: Calculation by the author and Shenzhen Statistics and Information Bureau (2001) and Shenzhen Statistics Bureau (2007, 2011).

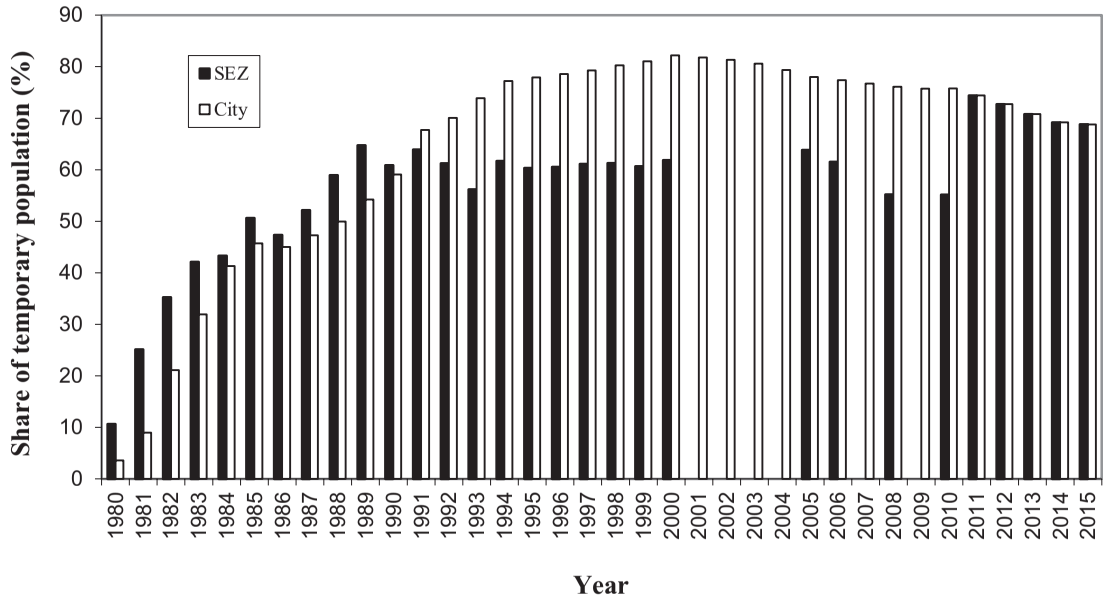

Figure 5.1 Share of temporary population in the SEZ and the city of Shenzhen

city and SEZ experienced significant population growth in the periods of 1989–2010 and 1987–2000, respectively. But population growth in SEZ slowed down earlier than the city as urban development expanded to areas outside of SEZ. The annual population growth is also less stable. Third, migration was the major source of population growth in the SEZ.

Population growth in the SEZ and the remaining areas of the city has not been an even process. Initially, rapid population growth took place in the SEZ. There was a concentration period of 1980–1985 when more population moved into the SEZ than the remaining areas of the city. The SEZ share of population increased from 28.27% in 1980 to 53.30% in 1985 and declined to 29.28% in 2000. The SEZ share of population increased again to 37.67% in 2006 and 34.16% in 2010 because of residential development and growth of the service sector in SEZ (Figure 5.2).

With the growth of population in the city of Shenzhen, the built-up area, public utilities and urban infrastructure have also expanded rapidly. The built-up area of the SEZ increased from less than 3km^2 before the 1980s to 48km^2 in 1985, 88km^2 in 1995 and 136km^2 in 2000. The total built-up area of the city increased from 495km^2 in 2002 to 720km^2 in 2006 (Shenzhen Statistics Bureau 2006, 2007). The construction of urban infrastructure and housing in Shenzhen was set at a higher standard than many other cities in China, especially for those with middle income or above (Chiu 1993, 1996). Taking housing as an example, the living floor space per capita in SEZ increased from 7.86m^2 in 1985 to 14.14m^2 by 2000 (Shenzhen Statistics and Information Bureau 1996, 2001). The living floor space per capita in the city increased from 14.73m^2 in 1985 to 22.75m^2 by 2004. It then declined slightly to 18.31m^2 and 19.72m^2 in 2005 and 2006 when the non-hukou

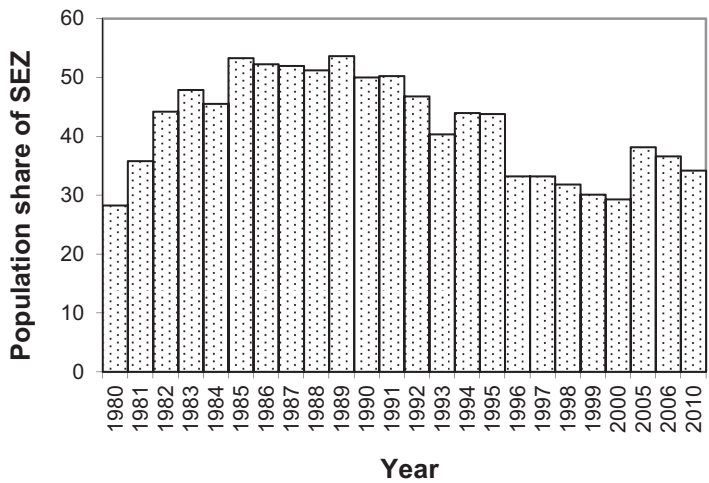

Figure 5.2 Population share of SEZ in Shenzhen city

population was also taken into account (Shenzhen Statistics Bureau 2007). It is clear that the SEZ not only managed to provide housing in pace with the rapid population growth but also was able to raise the living floor space per capita in the 1980s and 1990s. According to the 2000 census, the living floor space per capita in urban areas (city area and town area) was 23.75m^2, greater than other main cities in China such as Guangzhou (22.49m^2), Beijing (22.04m^2), Tianjin (20.03m^2) and Shanghai (22.60m^2) (Population Census Office and DPSSTS 2002; Population Census Office of Guangdong Province 2002a).

However, there is no detailed housing information on the population, which is not covered by the available housing data. The 2000 census did not collect housing data for those who stay in collective households. There were 3.88 million people in a total of 0.78 million collective households in Shenzhen in 2000 (Population Census Office of Guangdong Province 2002b). Most of them were temporary population or migrant workers who lived in dormitories provided by employers. Their housing condition was likely to be more crowded than the population living at their own homes. This might result in many social problems in the long term, although some migrant workers intended to go to their hometowns after a few years (Shen 2002; Zhu 2007). Overall, rapid population growth and the inflow of migrant labors have also induced great social problems such as housing provision, education and increasing crime rates. This will affect sustainable social development of the city. The city government should pay more attention to social and environmental sustainability in addition to urban economic growth (Ng 2002).

Impact on agriculture and environmental pollution

Shenzhen provides a good case for examination of the impact of recent rapid urban growth and industrialization on agriculture and environment in China (Shen 1998). The issue of shrinking agricultural land and food supply has raised the question of who will feed China (Brown 1995; Shen 2000). Shenzhen's agriculture has also experienced significant change because of its rapid urbanization process (Tables 5.5 and 5.6). Arable land in the city has been greatly reduced from 532,000 Mui (15 Mui equals 1 hectare) in 1979 to only 29,000 Mui by 2006. This also resulted in a dramatic decline of grain production, which uses extensive arable land. The grain output of the city reduced from 132,584 tons in 1979 to only 2,028 tons in 2004 and 59 tons by 2006. It is clear that Shenzhen has been transformed to a situation similar to Hong Kong, which imports the majority of its food supply from outside the city. The change in other cities is smaller. For example, the arable land in Guangzhou declined from 186,000 Mui in 1978 to 130,000 Mui in 2005. Total grain output declined from the highest of 1.26 million tons in 1984 to only 0.52 million tons in 2005 (Guangzhou Municipal Statistics Bureau 2006).

There are two stages in agricultural change. In the first stage from 1979 to 2002, the agriculture was transformed from general agriculture into a type of suburban agriculture with major expansion in vegetable and meat production. Such suburban agriculture uses relatively less land but with a high output value per

Table 5.5 Agricultural change in the city of Shenzhen 1979–2006

Year	*Arable land (1,000 Mui)*	*Grain output (ton)*	*Vegetable output (ton)*	*Meat output (ton)*	*Agricultural output (RMB million)*
1979	532	132,584	8,639	6,726	131
1980	490	126,461	14,593	4,296	169
1981	460	116,489	22,772	2,778	242
1985	339	94,465	162,898	22,932	458
1990	280	81,018	227,346	62,513	1,192
1991	227	59,138	238,716	79,022	1,431
1992	155	32,906	201,517	74,081	1,853
1995	66	4,887	147,171	70,277	2,327
1997	64	4,990	169,683	65,911	2,709
2000	60	3,700	210,479	79,893	3,114
2005	37	599	141,652	46,846	2,174
2006	29	59	111,509	42,478	1,800

Data source: Shenzhen Statistics Bureau (2007).

Table 5.6 Agricultural change in Shenzhen SEZ 1980–1995

Year	*Arable land (1,000 Mui)*	*Grain output (ton)*	*Vegetable output (ton)*	*Meat output (ton)*	*Agricultural output (RMB million)*
1980	60.70	13,950	2,954	n/a	52
1981	52.90	11,977	8,884	n/a	45
1985	18.50	2,906	26,735	n/a	50
1990	17.80	332	35,381	4,408	127
1992	11.80	319	26,709	3,252	162
1995	4.40	n/a	14,502	4,853	173

Data source: Shenzhen Statistics Bureau (2006).

unit of land. During the period of 1979–1991, the vegetable output in Shenzhen increased by 28 times from 8,639 tons a year to 238,716 tons a year. The meat output increased by 11 times from 6,726 tons to 79,022 tons in the same period. During the period of 1991–2002, the meat production seemed to stabilize, while the vegetable production was less stable.

In the second stage from 2002–2006, the suburban agriculture began to decline in Shenzhen because of further urban expansion. The production of both meat and vegetables declined in the period. It is noted that agricultural output increased from RMB 131 million in 1979 to the peak of RMB 3,408 million in 2002, and it then declined to RMB 1,800 million in 2006 – the 1992 level. There are similar trends in Shenzhen SEZ, but they are much more outstanding as they were the focus of urban development. Table 5.6 shows the changes in the period of 1979–1995 for SEZ.

With the expansion of urban and industrial activities, environmental pollution is also increasing in Shenzhen. Table 5.7 presents the data on environmental

Table 5.7 Water pollution in Shenzhen SEZ 1990–2005

Year	*Wastewater (million ton)*	*Wastewater per capita (ton)*	*Industrial wastewater (million ton)*	*Industrial wastewater per capita (ton)*	*Within industrial standard (%)*
1990	136.85	135.52	15.52	15.37	78.03
1991	143.23	119.56	15.45	12.90	76.70
1992	174.34	142.89	15.46	12.67	84.99
1993	219.12	184.23	15.75	13.24	79.75
1994	260.83	176.80	18.75	12.71	87.09
1995	270.42	178.87	21.85	14.45	88.65
2000	354.05	172.45	26.49	12.90	98.23
2000*	736.54	105.03	218.07	31.10	n/a
2005*	1,116.00	134.82	n/a	n/a	96.8

Data sources: Shenzhen Statistics Bureau (2006) and Shenzhen Statistics and Information Bureau (1996, 2001).

Note: * refer to the whole city of Shenzhen.

pollution for Shenzhen SEZ for the period of 1990–2005. The environmental problems range from air pollution, water pollution, solid waste and noise pollution to soil pollution and land conservation. The discussion here is focused on wastewater, water pollution and air pollution. The amount of wastewater in the SEZ increased from 136.85 million tons in 1990 to 270.42 million tons by 1995. Part of such increase was due to the increase of population in the SEZ. However, the amount of wastewater per capita also increased from 135.52 tons in 1990 to 172.45 tons in 2000. This means that about 27.25% of the increase in wastewater in the SEZ was due to the increase in the level of wastewater discharge per capita, and 72.75% was due to the increase in the population. The amount of industrial wastewater in the SEZ also increased from 15.52 million tons in 1990 to 26.49 million tons in 2000. However, there was no increase in the amount of industrial wastewater per capita. The proportion of the industrial wastewater, which was in accordance with the standard, was raised from 78.03% in 1990 to 98.23% by 2000.

The data for SEZ and whole city are available for comparison in 2000. The wastewater per capita was 105.03 tons in the Shenzhen city, lower than that of SEZ. But industrial wastewater per capita was 31.10 tons for the city as a whole, much higher than that of SEZ. The difference reflects the concentration of industrial water use in areas out of SEZ. It is noted that the wastewater per capita increased to 134.82 tons in 2005 for the whole city, although the proportion of the industrial wastewater that was in accord with the standard was raised to 96.8% in 2005.

Air pollution data are available for the whole city of Shenzhen (Shenzhen Statistics Bureau 2007). The average concentration of the inhalable particles increased from 0.059 mg per m^3 in 2000 to the peak of 0.076 mg per m^3 in 2004 and then declined slightly to 0.064 mg per m^3 in 2006. The average concentration

Table 5.8 Waste treatment in Shenzhen and Guangzhou in 2004

City	*Share of industrial wastewater discharged reaching standard*	*Share of residential wastewater processed*	*Share of residential waste processed*	*Rate of reusing the industrial solid waste*
Shenzhen	96	63	100	87
Guangzhou	92	58	92	93

Data source: Department of Urban Socio-economic Survey (2005).

of SO_2 increased from 0.012 mg per m^3 in 1996 to 0.027 mg per m^3 in 2000 and 0.030 mg per m^3 in 2006.

The pressure of urban growth on agriculture and environment is clear in Shenzhen. In recent years, Shenzhen government has made efforts to investment in more facilities for waste processing, tightening environmental standards for waste disposal and adjusting industrial structure toward high value-added, high-tech and capital intensive industries with less environmental pollution. The 11th FYP of Shenzhen for the period of 2006–2010 aims to promote a new development model emphasizing the recycling of resources (Shenzhen city government 2006). Strict environmental objectives are set to reduce SO_2 and COD emission by 10%. Sixty percent of water quality and 99% of water resources for drinking will reach the standard, 75% of wastewater will be processed centrally, 92% of industrial solid waste and 45% of residential waste will be reused, and 95% of residential waste will be processed for harmless disposal. These measures will contribute to sustainable urban development in the city.

In comparison, the environmental waste is handled better in Shenzhen than in Guangzhou, the largest and capital city of Guangdong province with a long history. The share of industrial wastewater discharged reaching the standard, the share of residential wastewater processed and the share of residential waste processed in Guangzhou were lower than Shenzhen in 2004 (Table 5.8). Only Guangzhou had a higher rate of reusing the industrial solid waste (93%) than Shenzhen (87%) (Department of Urban Socio-economic Survey 2005). Such differences mean that new developed areas can do better than old cities to tackle environmental pollution. Nevertheless, the environmental stress and pollution are still serious, and more effort is needed to tackle these problems.

Conclusion

This chapter has examined the rapid urban growth in the city of Shenzhen with particular focus on urban economic growth, population growth, agriculture and environmental changes. It is found that net in-migration accounts for the majority of the urban population growth and that both domestic and foreign investments have made significant contributions to the rapid economic expansion in the city.

Rapid population growth and the inflow of migrant labors have also induced great social problems such as housing provision and increasing crime rates. The city government should pay more attention to social and environmental sustainability in addition to urban economic growth.

With the rapid expansion of population and the built-up area, there is increasing demand for the provision of urban infrastructure. There is also increasing stress on the natural environment and coastal areas, which is not discussed in detail in this chapter. The volume of environmental pollution is also increasing. Shenzhen as a rapidly expanding city provides a good case to address these issues. The problems of environmental pollution and the negative effect on agriculture have also been examined in the chapter. Shenzhen's agriculture has undergone a transition from general agriculture to the rise, and eventual decline, of suburban agriculture.

Generally, Shenzhen's performance is better than many other major cities in China in terms of environmental protection. Shenzhen's case indicates that it is possible to move toward balanced development in social, economic and environmental dimensions, even for new large cities such as Shenzhen. Other old and large cities may face even more environmental problems because of inertia in economic structure and historical legacy of poor urban infrastructure. With further industrialization and rising living standards and consumption levels, Chinese cities need to invest more in urban infrastructure and environmental protection to achieve sustainable development.

Note

1 This chapter, with some figures and tables updated, is reprinted from Shen, J. 2008. Urban growth and sustainable development in Shenzhen city 1980–2006. *Open Environmental Sciences*, 2: 71–79, with permission from Bentham OPEN.

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6 Economic relations between Hong Kong and mainland China[1]

Introduction

The purpose of this chapter is to add to the material on economic development of Hong Kong presented in the paper by Yeung et al. (2008). Because of space limitations, an all-embracing analysis of Hong Kong's economic performance since its handover to China in 1997 lies beyond the scope of this effort. This chapter intends, however, to focus on the city's relationship with mainland China and examine the opportunities and challenges to its development and competitiveness in the context of this important relationship after the change of sovereignty. In order to set the stage for the sections that will follow, this chapter will begin with an outline of Hong Kong's ranking as a competitive center. Next will come the narrative on economic integration, followed by sections on trade relations, growth of logistics and tourism and, finally, on the challenges faced by the city in light of its ties to the mainland.

Hong Kong's ranking as a competitive center

With a territory as small as 1,099 km^2 with ca. seven million inhabitants in 2007, Hong Kong, nonetheless, reaches some of the highest rankings among the world's 183 countries and regions (with a population of at least one million and a GDP over US$1 billion) evaluated by the *Economist* (2007). The city is first in 3 out of 103 major categories, as the most energy efficient in terms of GDP per unit of energy use, the highest net energy importer in terms of the percent of commercial energy use and the least economically dependent on agriculture in the world. Its international airport is the world's second busiest (after Memphis) in terms of cargo tonnage handled, and the city ranks third in global competitiveness (after the USA and Singapore) and fifth with regard to business environment (after Denmark, Singapore, Canada and Finland), which is measured by scoring opportunities for, and hindrances to, the conduct of business in ten categories, including market potential, tax and labor-market policies, infrastructure, skills and political environment.

The competitiveness of cities or regions is arguably rooted in the nature of the business environment they offer to firms (Porter 1998). Compared with cities in mainland China, Hong Kong's competitiveness builds on a sound legal and

institutional framework, free market system, sophisticated business community, diligent and relatively well-educated labor force, efficient and clean government, solid infrastructure and dense international networks (Shen 2004a; Yeung et al. 2006). Based on its past role as a global center of trade, commerce, shipping and financial services, it has the advantage of being a leading city of China and Asia, poised to grow in the future. According to the Institute for Management Development's World Competitiveness Index, Hong Kong's ranking dropped from 3rd in 1997 to 14th in 2000, but bounced back to 2nd in 2005 and 2006 (Enright, Scott & Associates Limited 2006). Similarly, according to the World Economic Forum's Growth Competitiveness Index (named Competitiveness Index prior to its name change in 2001), Hong Kong's ranking dropped from second (1997) to 28th (2005) (Enright, Scott & Associates Limited 2006). However, the Global Competitiveness Index introduced in 2006 indicates that Hong Kong's ranking improved from 14th in 2005 to 10th in 2006, and 12th in 2007 (cf. third-place ranking by the *Economist*), rising to 4th in Asia among the continent's countries/economies in 2007 (World Economic Forum 2007).

Recent studies of the urban competitiveness of Chinese cities have concluded that Hong Kong was the most competitive city in China in 2006 and 2007 (Ni et al. 2006, 2007). The city scored highly on its infrastructure development, financial market, business environment, efficiency and flexibility, legal system and government administration.

A relevant study by Huang et al. (2007), which analyzed data on 100 service firms in 314 world cities, identified London, New York, Hong Kong and Tokyo as the top-four service centers, basing that conclusion on the degrees of their internationalization. Hong Kong ranked third, hosting 92% of the transnational service firms identified in that study. In an earlier study undertaken by the Globalization and World Cities Research Network (GaWC) of Loughborough University, UK (Beaverstock et al. 1999), the city's rank was somewhat lower (behind Tokyo) because of the absence of headquarters of major TNCs. When first-level subsidiaries such as regional headquarters of the world's 100 largest corporations listed in *Fortune*'s Global 500 were considered, Hong Kong's rank was fourth according to Godfrey and Zhou (1999). A more recent GaWC study also ranked Hong Kong as the third top city in terms of service value and global connectivity (Taylor et al. 2002). The city thus is a highly internationalized urban center with prominent regional command functions, albeit differing from London and New York, where such global functions are most frequently headquartered.

In a different configuration, according to the Heritage Foundation's Index of Economic Freedom, the city has been regarded as the world's freest economy for nearly 13 consecutive years, from 1995 to 2007 (Kane et al. 2007), underscoring Hong Kong's high position as a world city. It is now positioned as an international financial center for China, because Shanghai, Hong Kong's nearest competitor, is largely renminbi based. The city has assumed a bridging role for mainland enterprises seeking to engage in global operations, as well as a similar role for foreign investors exploring opportunities in the hinterland and beyond. In a recent evaluation of global financial centers by the city of London, Hong Kong ranked

third after New York and London among 46 cities (BBC 2007), while Shanghai and Beijing ranked 24th and 36th, respectively. The city's role as financial intermediary between China and the global system has become the key factor in its leadership.

Additional evidence of Hong Kong's key role in Asia is provided by the stability of its equities market. The city's stock market, the world's sixth largest (*Economist* 2007), is significantly better developed and more mature than the bourses of Shanghai and Shenzhen. In the past few years, many large-scale banks and companies headquartered in mainland China have been listed on the Hong Kong exchange (Liu and Wu 2008). A significant example is provided by the Industrial and Commercial Bank of China (ICBC), listed simultaneously on both the Hong Kong and Shanghai stock exchanges on 27 October 2006, representing the world's largest initial public offering to date. According to *Mingpao Daily* (2006), the ICBC raised HK$140 billion in Hong Kong (H-shares) and Shanghai (A-shares). The Hong Kong dollar is pegged officially to the US dollar at the rate of US$ 1 = HK$ 7.73. On 29 December 2006, ICBC overtook Bank of America to become the second largest bank in the world by market value, after Citibank (Dyer 2006).

The amount of capital raised by companies listed on the Hong Kong Stock Exchange was the world's second highest after London in 2006 (Lee 2007). The total capitalization of the city's stock market increased from US$858.5 billion in 2004 to US$1567.7 billion in November 2006, with the share of mainland enterprises rising from 30 to ca. 48% during the period (InvestHK 2005, 2007). Noting that relatively few foreign companies are listed on the Hong Kong Stock Exchange, Xu (2006) has aptly referred to the city as "the national financial center of China."

Economic integration before and after the handover in 1997

Close economic and trade relations between Hong Kong and the mainland have existed since the city's colonial beginnings. From its transfer to Great Britain after the Opium War in 1941 to the early 1950s, Hong Kong's economy relied to a substantial extent on entrepot trade with mainland China. After 1950, however, the city's links with the mainland were severely curtailed because of the embargo on China imposed by the United Nations.

During the three decades from 1950 to 1980, Hong Kong's economic growth was largely based on industrialization. In 1978, the share of its labor force employed in manufacturing was as high as 47.8% (Sung and Wong 2000: 211). Since that year, when China adopted an open door policy, a spatial division of labor has emerged and became established across the border with Guangdong province, which has generally given rise to the model known as "front shop, back factory" (Sit 1989; Shen 2003). Relying on this model, Hong Kong began to relocate its manufacturing facilities and operations to the adjacent Pearl River Delta (PRD), employing a labor force of > 11 million paid by Hong Kong investors in various enterprises of

the region. By 1996, the share of the city's labor force employed in manufacturing was no higher than 18.9% (CSD 1997: 94), while the share of manufacturing in its GDP has declined from 22.8% in 1980 to 6.0% in 1997 (CSD 2007a: 88).

At the same time, Hong Kong emerged as a prominent service center, specializing in design, marketing, trading, intermediation, transportation, communications and finance. The share of labor force in the tertiary sector increased from 65.8% in 1991 to 76.4% in 1997 (CSD 2001a: 25). The gross national product per capita was US$24,540 after purchasing power adjustment, ranking 4th in the world (US$25,280), but 13th at the current exchange rate (World Bank 1998: 90).

After the handover in 1997, the officials and the general public in Hong Kong had serious reservations about economic integration with mainland China. Gradually, however, events such as the Asian Financial Crisis (AFC) have underscored the need for careful economic planning in order to ease the transition and facilitate greater economic integration (Shen 2004b). Major cooperation at the governmental level only began in earnest after China's entry into the World Trade Organization (WTO) in 2001. During the interim period (1997–2001), however, economic integration and relations with mainland China had already been strengthened by the city's business sector so that cross-boundary trade and investment continued to flow and expand.

Overall, the political change prompted by Hong Kong's return to China in 1997 did not have a dramatic effect on cross-boundary economic integration. It was far less significant than the effect of the initial open door policy introduced in China in 1978. Nonetheless, with the explosive growth and increasing sophistication of the Chinese economy, along with expanded commercial and transport functions of China's large cities, the previous "front shop, back factory" model of Hong Kong's development has been challenged. The following subsections will outline the major elements of the cross-boundary interaction – namely, investment, trade, and growth of logistics and tourism during the period from 1997 to 2007.

Cross-boundary investment between Hong Kong and mainland China

Foreign direct investment (FDI) flows between Hong Kong and mainland China accelerated after the opening of China to the outside world. Since 1978, the large-scale investment from Hong Kong to the mainland has placed both regions at the top of the world list of leading origins and destinations of FDI. Mainland China became the second largest destination for FDI (after the USA) in the world in 1993. In 1996, out of the US$175 billion FDI received by the mainland, 56.8% came from Hong Kong (Sung 1998). In that year, the total FDI stock that originated in Hong Kong amounted to US$112 billion, of which 88.5% went to the mainland in 1996. Meanwhile, the mainland was the second largest investor in Hong Kong (after the UK), sending to the city 82% of its total FDI of US$18 billion (Sung 1998).

The flow of FDI from Hong Kong to mainland China declined in the period from 1997 to 2005. From the peak year of 1997 when Hong Kong invested US$21.55 billion in the mainland, it declined to US$16.73 billion in 2000

because of the AFC, but bounced back to US$19.80 billion in 2005. The share of Hong Kong in the total foreign investment received by mainland China also declined from 45.9% in 1994 to 33.5% in 1997 and 31.0% in 2005 (NBS 1996: 598, 1998: 639, 2006: 753). But despite the declining share, Hong Kong remains the largest source of FDI in mainland China, more important than Japan (US$6.53 billion), Korea (US$5.17 billion) and the USA (US$3.06 billion) in 2005. Excluding tax-haven economies, mainland China stood out as the largest destination of direct investment (DI) from Hong Kong in 2006, as shown in Table 6.1. Among the total outward DI from Hong Kong, the mainland received 40.2% of the total outward stock and more than 47.7% of new investment in the same year (Xiao 2007).

Table 6.1 Stock and flow of DI from Hong Kong in 2006

Major country/ territory	*DI stock (HK $billion)*	*Share (%)*	*DI outflow/inflow (HK $billion)*	*Share (%)*
		Outward DI		
British Virgin Islands	2,467.6	46.9	78.0	22.3
Mainland China	2,117.2	40.2	166.6	47.7
Bermuda	137.8	2.6	−5.0	−1.4
UK	62.1	1.2	−0.2	−0.1
Japan	60.8	1.2	34.7	9.9
Cayman Islands	41.1	0.8	7.9	2.3
India	37.1	0.7	28.9	8.3
Thailand	34.7	0.7	6.4	1.8
Singapore	33.1	0.6	2.1	0.6
USA	29.1	0.6	3.1	0.9
Others	243.9	4.5	26.9	7.7
Total	5,264.5	100.0	349.4	100.0
		Inward DI		
Mainland China	2,024.3	35.1	108.7	31.1
British Virgin Islands	1,950.6	33.8	78.8	22.5
Netherlands	390.9	6.8	28.1	8.0
Bermuda	350.1	6.1	23.8	6.8
USA	277.9	4.8	51.3	14.7
Japan	151.4	2.6	18.0	5.1
UK	105.6	1.8	15.4	4.4
Cayman Islands	101.3	1.8	18.4	5.3
Singapore	85.2	1.5	8.1	2.3
Taiwan	33.7	0.6	8.7	2.5
Others	300.9	5.2	−9.4	−2.7
Total	5,771.9	100.0	350.0	100.0

Data sources: Compiled by author from CSD (2008a, 2008b).

Note: Country/territory here refers to the immediate destination (outward) or source (inward) economy. It does not necessarily reflect the country/territory in which the funds are ultimately used or initially mobilized. Significant circular flow of capital between Hong Kong and the tax-haven economies and between Hong Kong and mainland China is evident. Negative outflows were mainly repayment of loans by nonresident affiliates.

FDI flow to Hong Kong showed an enhanced relation between Hong Kong and mainland China after the handover in 1997, with the latter replacing the UK as the largest source of DI in Hong Kong in 2006. It contributed over 35% of the total inward stock and 31% of the new investment to Hong Kong in 2006 (CSD 2008a, 2008b), investing in the city a total of HK$108.7 billion.

Trade between Hong Kong and mainland China

While Hong Kong plays an important role as a trade agent for mainland China (Yeung and Shen 2007), it did not become major export agent until 1979. During the period of 1959–1987, the city's domestic export was greater than its re-export, as shown in Table 6.2.

Since 1978, re-exports rose more rapidly than domestic exports, which have been overtaken by re-exports in 1988. Re-exports grew from HK$182.8 billion in 1987 to a peak of HK$1,244.5 in 1997 and then declined to HK$1,159.2 billion in 1998 before increasing to reach a new peak of HK$2,578.4 billion in 2007. Re-exports accounted for over 68% of the economy's foreign trade in 1991, and the share increased to 77% in 1997 and 89% in 2007.

Mainland China has been the largest trading partner of Hong Kong except for domestic exports in 1991, 1999 and 2002 (Figure 6.1 and Table 6.3). The shares of the mainland in Hong Kong's total imports and re-exports increased significantly during the period from 1997 to 2007, indicating that the economic relationship between Hong Kong and mainland China became substantially closer. Since the handover to China, the mainland's share in Hong Kong's total imports increased from 37.7% in 1997 to 46.4% in 2007. The mainland's share of Hong Kong's

Table 6.2 Foreign trade in Hong Kong in 1959–2007 (HK$ billion)

Year	*Import*	*Domestic imports*	*Re-exports*	*Domestic exports*	*Total exports*	*Re-exports share in imports (%)*	*Re-exports share in exports (%)*
1959	4.9	4.0	1.0	2.3	3.3	20.1	30.4
1961	6.0	5.0	1.0	2.9	3.9	16.6	25.2
1971	20.3	16.8	3.4	13.8	17.2	16.9	19.9
1981	138.4	96.6	41.7	80.4	122.2	30.2	34.2
1987	377.9	195.2	182.8	195.3	378.0	48.4	48.4
1991	779.0	244.2	534.8	231.0	765.8	68.7	69.8
1996	1,535.6	349.8	1,185.8	212.2	1,397.9	77.2	84.8
1997	1,615.1	370.6	1,244.5	211.4	1,455.9	77.1	85.5
1998	1,429.1	269.9	1,159.2	188.5	1,347.6	81.1	86.0
2001	1,568.2	240.7	1,327.5	153.5	1,481.0	84.7	89.6
2006	2,599.8	273.3	2,326.5	134.5	2,461.0	89.5	94.5
2007	2,868.0	289.6	2,578.4	109.1	2,687.5	89.9	95.9

Data sources: Compiled by author from Holmes (1965: 1); CSD (2006, 2007c: 46, 2008c); Yeung and Shen (2007).

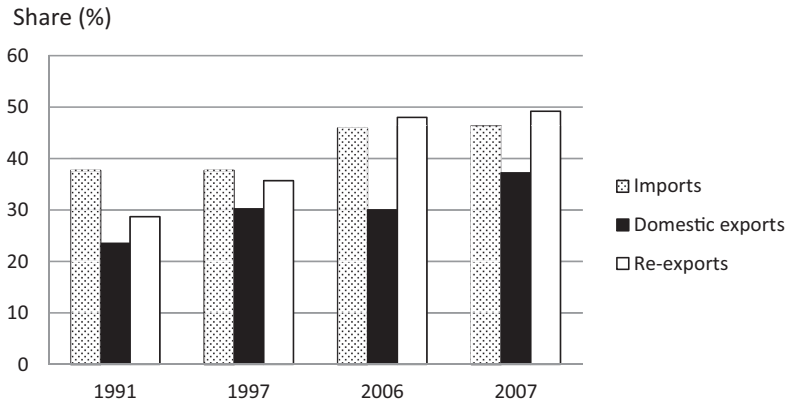

Figure 6.1 Share of mainland China in Hong Kong's foreign trade in 1991–2007 (%)

Table 6.3 Hong Kong's main trading partners in 1991–2007 (HK$ billion)

Type of trade/main country/territory	*1991*	*1997*	*2006*	*2007*
Imports, of which from	779.0	1,615.1	2,599.8	2,868.0
The mainland of China	293.4	608.4	1,193.0	1,329.7
Share of mainland China (%)	37.7	37.7	45.9	46.4
Japan	127.4	221.6	268.1	287.3
Taiwan	74.6	124.6	194.9	205.1
USA	58.8	125.4	123.6	138.8
Domestic exports, of which to	231.0	211.4	134.5	109.1
The mainland of China	54.4	63.9	40.3	40.6
Share of mainland China (%)	23.5	30.2	30.0	37.2
USA	62.9	55.1	33.2	23.9
UK	13.7	10.7	7.9	5.8
Germany	19.3	10.3	4.9	3.0
Re-exports, of which to	534.8	1,244.5	2,326.5	2,578.4
The mainland of China	153.3	443.9	1,115.9	1,267.7
Share of mainland China (%)	28.7	35.7	48.0	49.2
USA	110.8	261.4	338.0	344.3
Japan	29.6	77.7	115.5	116.7
Germany	32.1	46.3	70.8	78.1

Data sources: Compiled by author from CSD (2001a: 52, 2007c: 46–49, 2008d); Yeung and Shen (2007).

Note: UK ranked fourth as the destination of the city's re-exports in 1999. Singapore ranked fourth in 2006 as the source of imports to Hong Kong. Regarding the destination of domestic exports from Hong Kong, Japan ranked fourth in 1997, the Netherlands third and the UK fourth in 2006.

re-exports increased from 35.7% to 49.2% during the period, remaining at the level of 30% of the domestic export of products made in Hong Kong through 2006, but increasing to 37.2% in 2007. All of this suggests a fundamental restructuring of the terms of trade and the role of Hong Kong in facilitating the distribution and transit of Chinese-made goods through Hong Kong.

Much trading between Hong Kong and mainland China is related to outward processing or to outsourcing (Table 6.4). Figure 6.2 shows that 44.7% of the mainland's imports via Hong Kong and 81.2% of its exports to Hong Kong resulted from such outsourcing activities in 1997. There was little change until 2007, when these shares declined to 34.1% and 58.6%, respectively. About 95% of the total exports involving outsourcing from Hong Kong to the mainland actually originated in Guangdong in 1991 and extended into the new century because of the emergence of a regional production system in the Hong Kong–PRD region (Shen 2003).

Table 6.4 Outward processing trade between mainland China and Hong Kong in 1991–2007 (HK$ billion)

Trade indicator	*1991*	*1997*	*2006*	*2007*
Mainland China direct import from Hong Kong	40.4	47.1	20.7	19.2
Mainland China import via Hong Kong	73.6	197.81	389.2	432.4
Subtotal	113.9	244.9	409.9	451.5
Mainland China export to Hong Kong	197.4	491.1	769.3	780.0
Guangdong export to Hong Kong	186.6	430.8	753.7	735.2

Data sources: Compiled by author from CSD (1992, 1998, 2007d, 2008e); Yeung and Shen (2007).

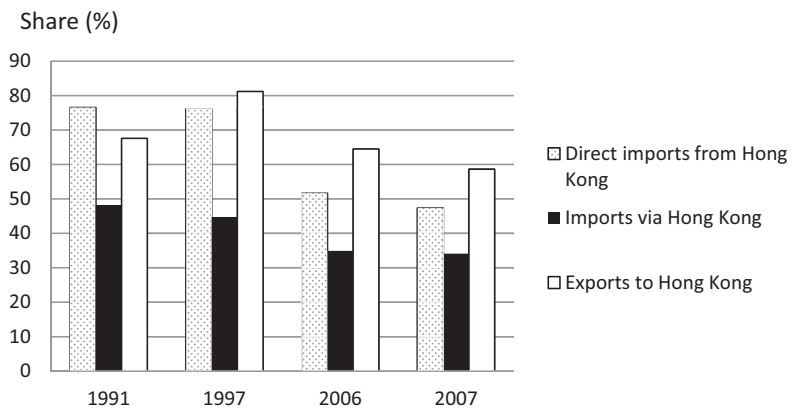

Figure 6.2 Share of outward processing trade in the total between mainland China and Hong Kong 1991–2007 (%)

Data sources: Compiled from CSD (1992, 1998, 2007d, 2008e) and Yeung and Shen (2007).

Note: Guangdong province's share in total exports from mainland China to Hong Kong were 94% and 95% in 1991 and 1997, respectively, and climbed to 98% in 2006 before falling back to 94% in 2007.

Not unlike FDI, the importance of Hong Kong in the international trade of mainland China has actually declined. Although exports from mainland China to Hong Kong increased from US$15.4 billion in 1984 to $43.8 billion in 1997 and $124.5 billion in 2005, the city's share in the total exports from mainland China declined from 58.9% in 1984 to 24.0% in 1997 and 16.3% in 2005 (NBS 1998: 626, 1985: 496, 2006: 735 and 740).

Growth of Hong Kong's logistics and tourism industries

Hong Kong's outsourcing in the PRD region and induced re-export activities have driven the dramatic growth of air cargo and container throughput. A large amount of freight and many containers are regularly transported between the city and the expanding urban sites in the PRD. The volume of cross-boundary vehicles between Hong Kong and Shenzhen increased from 1.7 million in 1985 to 9.5 million in 1997 and 15 million in 2006 (CSD 2001a: 165, 2007c: 110–111).

Container throughput in the port of Hong Kong increased from 5.1 million TEUs (20-foot equivalent units) in 1990 to 14.6 million in 1997. Hong Kong was the busiest container port in the world during the period from 1992 to 2004, except in 1998 (Port, Maritime, and Logistics Development Unit 2006; Port Development Council 2007; Hong Kong SAR Government 1998). Container throughput in Hong Kong amounted to 23.3 million TEUs in 2006, ranking second in the world (Shenzhen Port 2007).

Similarly, air cargo handled by Hong Kong International Airport increased from 1.79 million tons in 1997 to 3.58 million tons in 2006. The number of passengers also rose from 28.3 million in 1997 to 43.3 million in 2006. In that year, Hong Kong ranked 2nd in handling air cargo and 14th in the world's passenger throughput (Civil Aviation Department 2007; Port Development Council 2007; *Mingpao Daily* 2007). Air cargo accounted for as little as 1.2% by weight of all cargo handled by Hong Kong in 2004 (CSD 2007b: 125), but the share of its value was as high as 21.3% in 1997 and 34.5% in 2006 (CSD 1999: 104, 2001b: 1 and 104, 2007b: 104, 2007c: 46).

The population exchange and interaction between Hong Kong and the mainland also accelerated after the opening of China in 1978. The volume of cross-boundary passengers between Hong Kong and Shenzhen increased from 20.69 million in 1985 to 64.9 in 1997 and more than doubled during the post-handover period from 1997 to 2006, reaching 150.8 million in 2006 (CSD 2001a: 183, 2007c: 123–124). Most of these passengers are Hong Kong residents who can travel to mainland China freely with home visit permits issued by the mainland authority.

The travel of mainland people to Hong Kong is subject to the policies of the immigration department of Hong Kong. There have been important policy changes to ease the travel of mainland visitors to Hong Kong since 2002. The quota on the number of tourists from mainland China to Hong Kong (2000 tourists daily) was abolished on January 1, 2002, whereupon individual tourists from major cities have been allowed to apply for travel permits to visit Hong Kong after July 2003. The number of tourists from mainland China has thus increased from 2.4 million in 1997 to 8.5 in 2003 and 15.5 million in 2007 (Table 6.5). Its share of the total number of tourists rose from 18.4% in 1997 to 55.0% in 2007. As a

Table 6.5 Visitor arrivals to Hong Kong in 1991–2006 (million)

Origin	*1991*	*1997*	*2006*	*2007*
Mainland China	0.9	2.4	13.6	15.5
Share (%)	12.9	18.4	53.8	55.0
Taiwan	1.3	1.9	2.2	2.2
Macao	0.0	0.5	0.6	0.6
South and Southeast Asia	1.2	1.6	2.7	2.9
North Asia	1.4	2.0	2.0	2.2
Europe, Africa and Middle East	0.9	1.3	1.9	2.2
America	0.8	1.1	1.6	1.8
Australia, Zealand & South Pacific	0.3	0.4	0.7	0.8
Total	6.8	13.0	25.3	28.2

Data sources: Compiled by author from CSD (2001a: 184, 2007c: 126, 2008f: 128).

Note: The share from mainland China rose from 12.9% in 1991 to 18.4% in 1997, whereupon it exceeded one-half of the total at 53.8% in 2006 and 55.0% in 2007.

result, the total number of tourists coming to Hong Kong more than doubled from 13.0 million in 1997 to 28.2 million in 2007 (CSD 2001a: 184, 2008e). According to the *Economist* (2007), Hong Kong ranked 16th in the world in the number of tourist arrivals and 17th in tourist spending.

Challenges posed by changing economic relations

The opening and reform policy implemented in China since 1978 has resulted in close economic relations between Hong Kong and mainland China, particularly involving the PRD region in Guangdong province. In the pre-handover period from 1978 to 1997, the economic relationship between Hong Kong and Guangdong was characterized (as noted earlier) by the "front shop, back factory" model. The outsourcing and trade-led economic interaction continued to grow in the post-handover period of 1997–2006, but the rapid development of Guangdong since the late 1990s has altered the character and prospects for future economic relationship between the two regions (Hong Kong SAR Government 2007). The following illustrates five major challenges now facing Hong Kong.

First, the economic growth of mainland China and some of the country's provinces and cities have expanded dramatically since the mid-1990s, and have narrowed between Hong Kong and these mainland neighbors. This in turn has reduced Hong Kong's economic influence on the economies of Guangdong and other cities. Hong Kong's GDP as a percentage of the GDP of mainland China declined from 24.2% in 1994 to 18.5% in 1997, sliding to 8.0% in 2005. In terms of GDP, Hong Kong was overtaken by Guangdong in 2003 and the PRD in 2004 (CSD 2007a: 14; GDPBS 2006: 91; NBS 2006). Guangzhou and Shenzhen's GDP as percentages of Hong Kong's increased from 11.5% and 8.9%, respectively, in 1997 to 35.4% and 34.0% in 2005.

Second, with the entry of China into the WTO in 2001, the share of FDI from foreign countries has risen dramatically. Hong Kong's share in the total FDI of

China declined from 69.9% in 1986 to 45.6% in 1997 and 29.8% in 2005. With declining FDI from Hong Kong to Guangdong, from US$8.4 billion in 1997 to US$5.8 billion in 2005, Guangdong's FDI share in China's total also declined from 41.7% in 1984 to 25.9% in 1997 and 20.5% in 2005, an important cause of slower growth in Guangdong than in YRD (NBS 1988: 734, 1998: 639, 1999: 596, 2006: 752–753; GDPBS 1998: 505, 2004: 484 and 567, 2006: 510, 514 and 591). On the other hand, Japan, Korea and the USA have transferred many manufacturing and even R&D facilities to mainland China, resulting in the increasing role of the TNCs of these countries in the economy of mainland China.

Third, according to the 11th FYP, Guangdong's new industrialization strategy will focus on the electronic and information industry, as well as the petrochemical, automobile, equipment manufacturing and steel industries. This effort is intended to upgrade its industrial structure from light to heavy industry. Because Hong Kong's industrialists have little experience in these industries, and their participation will be limited, the prospective effort may weaken the economic ties between Hong Kong and Guangdong.

Fourth, Hong Kong aims to provide more producer and professional services, but this is also under challenge as the service sector in Guangdong has grown rapidly. For example, the old division of labor under the "front shop, back factory" model has competition. Guangdong has invested heavily in seaports, airports and exhibition and convention facilities, thus posing a new challenge to Hong Kong's key service industries. More and more trade and services have been conducted by domestic enterprises and Hong Kong's share is in decline. The most outstanding example is the dramatic rise of Shenzhen's port. Its container throughput grew from 0.04 million TEUs in 1990 to 18.50 million in 2006 (GDPBS 1998, 2004; Shenzhen Port 2007), following closely Hong Kong's 23.3 million TEUs in 2006 (Port Development Council 2007). It is expected that Hong Kong's container throughput will be taken over by Shenzhen in five to ten years.

Fifth, Hong Kong is also facing increasing challenges from several rapidly rising mainland cities including Shanghai, Beijing and Shenzhen (Shi and Hamnett 2002; Zhao et al. 2004). For example, Shanghai aims to enhance its position as an international economic center as well as an international center for trade, shipping and finance in the 11th FYP. For another example, according to Shenzhen's 2030 Urban Development Strategy, that city's vision is to become a pioneering global urban center in the area of sustainable development. Some new measures have been proposed to achieve efficient and smart growth, such as upgrading infrastructure, enhancing innovation, industrial upgrading and improving environmental conservation.

The changing relations and circumstance of Hong Kong mentioned earlier have also raised the issue of whether the city is being marginalized in the 11th FYP. The answer is not simply yes or no. The overall trend is that Hong Kong will still be a leading world city in Asia and China. But other cities are catching Hong Kong quickly as the service and commercial gaps narrow, so Hong Kong will no longer be the only city to dominate the economy of mainland China. While Hong Kong may still lead in certain core economic sectors, such as international financial activities and air cargo services, other cities may also take the lead in

certain indicators such as volume of air passengers (Beijing ahead of Hong Kong in 2006), cargo throughput (Shanghai ahead of Hong Kong in 2006) and container throughput (Shanghai ahead of Hong Kong in 2007). This suggests that Hong Kong will not become a marginalized city in the future, but will have to compete and cooperate vigorously with other major cities in China and Asia to remain prosperous.

Conclusion

Studies on urban competitiveness have inevitably focused on internal factors, although urban economic performance is often used as an important reference of urban competitiveness. Urban performance depends on both urban competitiveness (internal factors) and the external environment (external factors). Different external environments present different development opportunities for various cities and thus affect their urban performance differently. This chapter has used Hong Kong as a case study to show how its hinterland, the PRD region and mainland China in general, has provided favorable investment and trade opportunities for Hong Kong and stimulated its economic transformation from an industrial to a major world city. This chapter has also examined and assessed both the opportunities and challenges to Hong Kong's urban development and competitiveness in the context of dynamic and far-reaching changing relations between Hong Kong and mainland China.

While Hong Kong benefited from a favorable position in the division of labor in the Hong Kong–PRD regional production system before the change in sovereignty in 1997 (Shen 2003), such an advantage is being challenged by the rise and upgrading of the economic structure of Guangdong and the neighboring cities in the hinterland after 2001. Even with a favorable institutional framework and government policy for active regional cooperation and economic integration, Hong Kong is facing increasing competitive pressure in the post-handover period because of the narrowing gap between Hong Kong and the mainland in economic terms. In addition to approaches emphasizing the political economy and regional governance (Shen 2004b; Yang 2004), a review and explanation of economic indicators is needed to reveal fundamental changes in economic relations as sought in this chapter.

Compared with other cities in mainland China, Hong Kong's competitiveness builds on a sound legal and institutional framework, a free market system, sophisticated business community, diligent and relatively well-educated labor force, efficient and clean government, good infrastructure and dense international networks. According to World Economic Forum's Global Competitiveness Index, the city's world ranking has improved quite substantially (see the earlier discussion), rising to fourth in Asia 2007. And according to studies of urban competitiveness of Chinese cities, Hong Kong was ranked as the most competitive city in China in 2006 and 2007 (Ni et al. 2006, 2007).

Economic growth in Hong Kong was based on industrialization during the three decades from 1950 to 1980. Yet it had transferred the majority of its manufacturing

to the PRD and emerged as a world city in Asia by 1997. Political change as seen in the return of Hong Kong to China in 1997 had little initial dramatic effect on the cross-boundary economic integration. It was far less significant than the effect of the open door policy and economic reforms introduced in China in 1978. Increasing economic relations between Hong Kong and mainland China were driven by the goal of reducing production costs in manufacturing during the 1978–1997 period. Thus, even with the conservative attitude of the government in the immediate post-handover period from 1997 to 2001, cross-boundary investment and trade continued to grow after 1997, following the pre-1997 model.

The overall trend suggests that Hong Kong will continue as a leading world city in Asia and China. But other cities such as Shanghai and Beijing are catching up very quickly. Hong Kong will no longer be the only city to dominate the economy of China, which means that it will have to compete aggressively while also cooperate closely with other major Chinese and Asian cities to remain dynamic and prosperous.

Note

1 This chapter is reprinted from Shen, J. 2008. Hong Kong under Chinese sovereignty: Economic relations with mainland China, 1978–2007. *Eurasian Geography and Economics*, 49(3): 326–340, www.tandfonline.com/loi/rege20, with permission from Taylor & Francis.

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7 Cross-border urban governance in Hong Kong[1]

Introduction

Globalization has been advancing in the world in two main ways. First, various initiatives for institutional changes have been proposed and introduced in many regions to abolish various barriers and border controls to form "borderless region states," conforming to a general shift toward a "borderless world economy" as advocated by Ohmae (1995). Second, the transnational corporations (TNCs) have engaged actively in the organization of new international or regional division of labor to make the best use of worldwide resources under a flexible mode of production.

Because of changing scalar relations in the era of globalization, it is now popular to assume that the role of state is on the decline (Dunning 1995). An extreme version of globalization advocates the "end of nation states" and the "end of geography" in a "borderless world" (Pun and Lee 2002). Among various critics of the neoliberal "end-state" view of globalization, Yeung (1998) emphasized the role of the (capitalist) state in enabling and facilitating capital accumulation and globalization. He described globalization as a dialectical process of homogenization and differentiation.

Whether and how the state acts tactically to resist or facilitate regional integration and globalization is an important issue. This chapter looks at Hong Kong for a detailed case study of changing cross-border urban governance, especially the role of the state in resisting and participating in the cross-border regional integration in the Hong Kong–PRD region (Figure 7.1). The region has been deeply involved in the processes of globalization and regionalization since the late 1970s (Kwok and So 1995; Sit 1995; Lin 1997; Chan 1998; Li 1998; Tsui-Auch 1999; Hu and Chan 2002; Shen 2002; Shen, Wong and Feng 2002).

Hong Kong has long been a well-known (quasi) city-state. Figure 7.2 shows Hong Kong's main regions and new towns. Hong Kong was a British colony before 1997 and has been a special administrative region (SAR) of China since 1997. It has enjoyed a high degree of autonomy because it was regarded as a city-state both before and after 1997. As a free port for many years, Hong Kong was ranked the freest economy in the world by the Heritage Foundation over the period of 1995–2001 and by the Fraser Institute for the period of 1970–2000

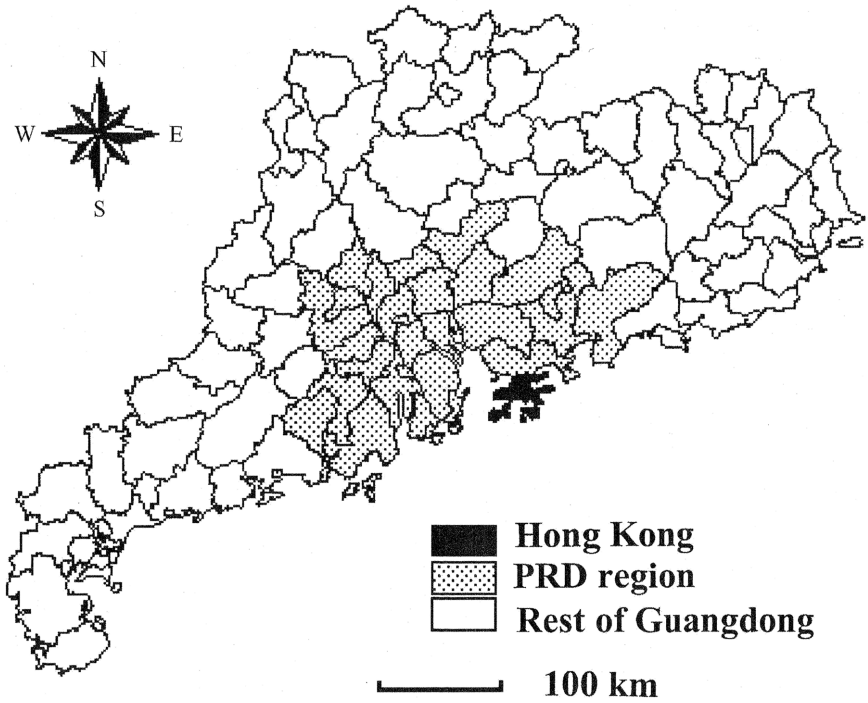

Figure 7.1 Location of Hong Kong, PRD region and Guangdong
Note: PRD region is part of Guangdong province

(O'Driscoll, Holmes, and O'Grady 2002; Gwartney et al. 2002). But its cross-border relation with the PRD region has been subject to serious criticisms in recent years (Ng 2002).

It is claimed that the Hong Kong SAR (HKSAR) government adopted a so-called Fortress Hong Kong policy toward regional integration of the Hong Kong–PRD region in stark contrast to its famous liberal and positive nonintervention policy toward global capital and globalization (Sung 2002). This issue calls for a reconsideration of the role of the Hong Kong government and laissez-faire capitalism. It has been widely accepted that the Hong Kong government's laissez-faire (or positive nonintervention) policy was the cornerstone of Hong Kong's success in the postwar period (Cheng 1995). However, Yeung (2000) argues that commercial and financial interests have dominated Hong Kong's Executive and Legislative councils, and have had much influence in political affairs and government policy. The role of the Hong Kong government can best be interpreted as "a passive, reactive and status quo "intervention" without intervention"(original emphasis, Yeung 2000: 138), possibly in conflict with the notion of neoliberalism.

In the case of cross-border development and governance, the government anxiously and actively attempted to resist close regional integration across the Hong

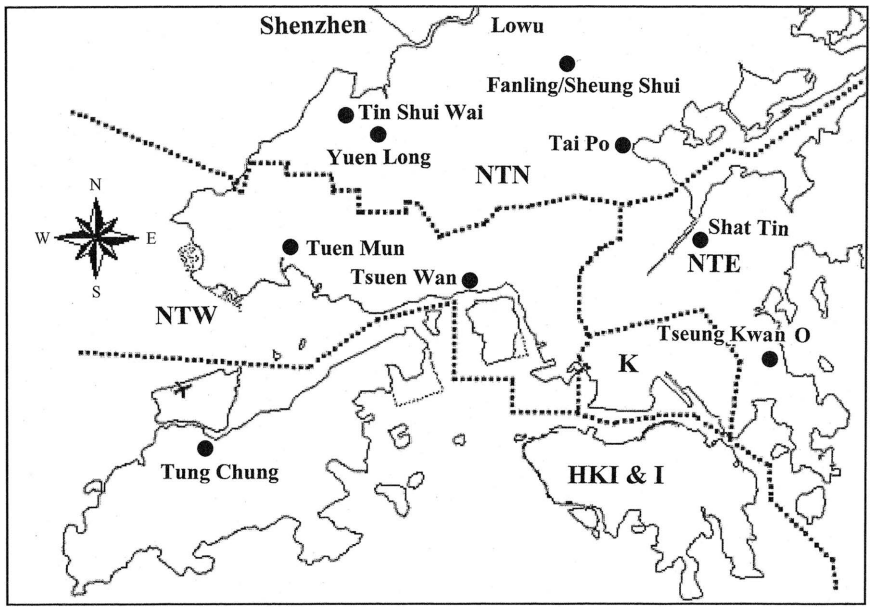

Figure 7.2 Regions and new towns in Hong Kong

Notes:

HKI &I: Hong Kong Island and Islands

K: Kowloon

NTN: North New Territories

NTE: East New Territories

NTW: West New Territories

Kong–Shenzhen border, especially in the period of 1997–2000, even after the return of Hong Kong to China. This chapter explores the role of the state – the Hong Kong government – in cross-border urban governance under the challenges of the accelerated process of globalization and regional integration, and argues that multiple TSEs rather than a single and structurally cohesive geoeconomic TSE are in place in the Hong Kong–PRD region. A tension-free model of regional integration has never existed because of complexities in the governance network and the interaction between geoeconomic and geopolitical TSEs.

Conceptualizing cross-border urban governance in Hong Kong

In the process of globalization, a new regionalism is on the rise, based on some dense nodes of regional social formations called global city-regions (Scott et al. 2001). Cross-border city-regions such as the Hong Kong–PRD region and the Indonesia-Malaysia-Singapore growth triangle spill over national or political

boundaries (Chen and Ho 1994; Grundy-Warr, Peachey, and Perry 1999; Shen 2003).

Governance has been a popular term in social sciences to describe the role of a network involving both state and nonstate sectors (Rhodes 1997). One important area of urban governance is related to cross-border matters such as cross-border infrastructure and border crossing controls. The rearticulation of Hong Kong's cross-border urban governance is the focus of this chapter. This is a subset of wider cross-border regional governance in the Hong Kong–PRD region or South China. Two conceptual approaches have been adopted in the study of governance in this dynamic region – multilevel governance (MLG) and TSEs (Sasuga 2001; Sum 2001a).

The "MLG paradigm" has been applied to the case of European Union governance, but a comprehensive theory of MLG still does not exist. Generally, MLG involves a shift from a hierarchical/vertical to a nonhierarchical/horizontal system of political negotiation, or "networked polity" (Christiansen 1996). According to Sasuga (2001), the existing cross-border business network in southern China, geared toward spatial and technical divisions of labor, is backed up by "Local Corporatism" and dense "Multiple Local Networks." The MLG involves a combination of strong social networks and supportive governance arrangements in the cross-border region of southern China, Hong Kong and Taiwan.

The TSE concept was applied to cross-border regions by Sum (2001b). A TSE is a nexi of social and political relations that projects a coherent identity to a space. According to Sum (2001b: 33), one key property of a TSE is its "structured coherence" over space and time, depending on the "stretching out" and "compression" of key social and political relations. A TSE is considered to be a meaning system that is produced through an articulation of personal, public and metanarratives. A TSE is also a dynamic concept, postulating that actors and networks may attempt to establish TSEs favorable to their own interests. The possible outcome varies from a dominant TSE to no stable/dominant TSE and a dominant TSE linked to a complementary TSE. There are at least four kinds of TSEs, including geoeconomic TSEs, geopolitical TSEs, nationalist TSEs and gendered TSEs. The analysis of the emergence, existence and contestation of different TSEs can contribute to a better understanding of cross-border governance (Sum 2001b: 38).

Sum (2001a, 2001b: 30) argued that the geoeconomic and nationalist TSEs dominated the cross-border region of "Greater China" and were connected and coordinated through the strategic networks of actors. Most previous studies have focused on how the regional production networks and the regional division of labor have been consolidated by linguistic affinities, kinship ties and "guanxi" networks, in addition to complementary factors of production and geographical proximity (Smart and Smart 1991; Leung 1993; Sit 1995).

The cooperative nature between local government in mainland China and business investors from Hong Kong and Taiwan has been widely noticed. Thus a structurally cohesive geoeconomic TSE is considered to be in place in southern China, resulting in closer and closer regional integration. Although there is a network of public, quasi-public and private institutions, such a network is often loosely

connected since it is motivated by business interests (Sit 1995: 183; Sum 2001a: 94). A tension-free model of regional integration has never existed in southern China because of complexities of the governance network and the interaction between geoeconomic and geopolitical TSEs.

Indeed, the role of governments in Hong Kong and Taiwan has not been considered adequately. For example, the government in Taiwan has attempted to limit cross-strait investment and trade, as epitomized by Lee Teng-hui's slogan, "No haste and patience (jieji yongren)"(Cabestan 2000: 112; Sum 2001b: 88; Wang 2001). Similar, but less explicit, resistance to regional integration has also existed in Hong Kong. The opposition forces against close regional integration can be influential when these actors hold substantial power. Previous studies also paid little attention to other voices such as the ordinary workers in Hong Kong who were against close economic linkages. The transfer of manufacturing from Hong Kong to the PRD region once caused serious unemployment problems in the city-state (Chan 1995: 52).

The economic and political interests of these actors have to be taken seriously into account in the study of cross-border regional governance, especially from the perspective of Hong Kong. The cross-border governance strategy in Hong Kong has been changing because of the rearticulation of its economic and political relations with the mainland and the world at large. This chapter will use a multiple TSE approach in analyzing the dynamics and interaction of multiple geoeconomic TSEs and geopolitical TSEs in Hong Kong. Despite the risk of oversimplicity, the chapter proposes that there are two competing geoeconomic TSEs and two competing geopolitical TSEs in Hong Kong that have different economic interests and political agendas.

The two geoeconomic TSEs are the pro-economic-integration TSE and anti-economic-integration TSE. The two geopolitical TSEs are the nationalist TSE and the politically distancing TSE. The interaction, confrontation and dynamics of these TSEs determine Hong Kong's path in its cross-border relationship with the PRD region and mainland China in general. The 1997 Asian Financial Crisis (AFC) intensified the tensions between the two economic TSEs, while the 1997 handover intensified the struggle between the two political TSEs.

This chapter will focus on the key actors in Hong Kong in its cross-border governance. To put the analysis in the proper context, it may be useful to outline the major actors on both sides of the Hong Kong–Shenzhen border. On the mainland side, government actors include the central government of China, the government of Guangdong province and the governments of cities in the PRD region, especially that of Shenzhen, which shares a land border with Hong Kong. In the governance network, the Guangdong provincial government is in a peculiar position, with limited power in co-coordinating the 19 cities and 1 county in the PRD region. Shenzhen has been most active in seeking cross-border development jointly with Hong Kong. On the mainland side, governments dominate society and are assumed to represent its overall interests.

On the Hong Kong side, business interests, grassroots residents and nongovernmental organizations have also openly voiced their views both in words and by

practice and have been highly influential in cross-border matters. Nevertheless, the government in Hong Kong has played an important role in mediating cross-border relations both before and after 1997. After all, cross-border relations in the Hong Kong–PRD region are highly asymmetrical. Hong Kong businessmen and residents are free to travel and do business in the PRD region, while businessmen and residents from the PRD are restricted from entering Hong Kong. Thus the key issue of cross-border governance has often focused on how to facilitate the free flow of capital, goods and people in Hong Kong to and from the PRD. The role of the state (the Hong Kong government) in such a complicated governance network is crucial in shaping and reshaping the cross-border relationship.

Cross-border urban governance in Hong Kong: from separation to tolerance before 1997

Hong Kong's cross-border urban governance since 1841 can be divided into five periods: 1841–1949, 1949–1978, 1978–1997, 1997–2000 and after 2001. Because of changing dominance of various TSEs, there have been significant changes in cross-border relations (Table 7.1). The colonial periods before 1997 had substantial effect on cross-border relations after 1997. Thus it is useful to examine briefly cross-border relations before 1997 here.

As a British colony until 1997, a colonial geopolitical TSE dominated Hong Kong, although a nationalist TSE always existed there, exemplified by some pro-China activists. The key interest of the colonial geopolitical TSE was to secure Hong Kong as a free port for trading under British rule, and its participants included the colonial government as well as businessmen from Britain and elsewhere. Politically, Hong Kong government and politicians were accountable to the British government, and it was natural to keep some distance from the Chinese government. On the other hand, participants in the nationalist TSE were Chinese people in Hong Kong who believed that Hong Kong was part of China.

The cross-border relationship in the first period of 1841–1949 can be characterized as no government control of the border. Hong Kong's immigration law prior to 1940 allowed Chinese to enter and leave Hong Kong freely. A colonial geoeconomic TSE dominated Hong Kong's economy and facilitated entrepot trade with mainland China up to 1950s. This pro-trade, geoeconomic TSE was based on close economic linkages between Hong Kong and mainland China. The cross-border relationship in this period can be characterized as close and permeable.

After 1949, an anti-economic-integration TSE emerged to sever economic links with the mainland and to serve the geopolitical TSE following the United Nations' embargo on China. This embargo virtually stopped Hong Kong's entrepot trading with the mainland. A pro-separation, political TSE and anti-economic-integration TSE dominated Hong Kong. The Hong Kong–Shenzhen border separated Hong Kong from the mainland politically, economically, and spatially. This example shows how the geoeconomic TSE was shaped by a powerful geopolitical TSE. In this period, there was very limited trading between Hong Kong and the mainland. Hong Kong embarked on industrialization from the 1950s through the 1970s and

Table 7.1 Main characteristics of changing cross-border urban governance in Hong Kong in five periods

Period	*Main geopolitical TSEs*	*Main geoeconomic TSEs*	*Cross-border relation*	*Government role in cross-border relations*	*Role of business sector*	*Cross-border trade*
1841–1949	Colonial TSE (dominating), nationalist TSE	Pro-trade colonial TSE	Close and permeable	No border control	Active	Significant
1949–1978	Pro-separation TSE (dominating), nationalist TSE	Anti-economic integration TSE	Separation	Tight border control	Limited	Very limited
1978–1997	Colonial TSE (dominating), nationalist TSE (rising)	Pro-economic integration TSE (dominating), anti-economic integration TSE	Tolerance of close economic links	Passive and indifferent	Active	Explosive growth
1997–2000	Political distancing TSE (influential), nationalist TSE	Pro-economic integration TSE, anti-economic integration TSE (influential)	Protectionism, Fortress Hong Kong	Not active, limited role	Active	Continuous growth
Since 2001	Nationalist TSE (rising), political distancing TSE (declining)	Pro-economic integration TSE (dominating), anti-economic integration TSE	Free Trade Zone (Closer Economic Partnership Agreement)	Active facilitating	Active	Continuous growth

became one of the four newly industrialized dragons in East Asia. The share of the labor force employed in manufacturing in Hong Kong increased to 47% in 1971 (Suen and Chan 1997).

The cross-border urban governance of Hong Kong in the second period can be characterized as separation. The political, economic and social distances between Chinese in Hong Kong and mainland were increased significantly. Spatially, a closed-border area, 20km long and 0.5–2km wide, was created on the Hong Kong side for security concerns. Cold War politics and governments on both sides of the border were decisive in suppressing cross-border exchanges and trading.

The emergence of the cross-border Hong Kong–PRD city-region has been a phenomenon only since 1978 with the consolidation of geoeconomic TSEs, both for and against economic integration. The opening of mainland China in 1978 marked the beginning of the third period, 1978–1997, in cross-border relations. Mainland China implemented a series of open door policies, such as the designation of the Shenzhen special economic zone in 1980, which produced a strong pulling effect on capital and industries in Hong Kong. A pro-integration TSE emerged in Hong Kong, with the active participation of its business sector and residents, especially those with a close connection to mainland China, responding to immense cross-border opportunities, initially for investment and later for leisure, shopping and housing. A pro-China nationalist TSE was also strengthened as investing on the mainland by Chinese in Hong Kong was encouraged and recognized as supporting the modernization of the motherland.

In the new framework of cross-border development, governments of PRD cities and businessmen and residents in Hong Kong were the key players (Weng 1998; Shen 2002). Governments in PRD cities actively engaged in promoting cross-border social and economic activities by improving infrastructure and offering tax concessions for foreign investors. Hong Kong residents of Chinese origin were issued home visit permits for freely traveling to the mainland. These measures effectively knocked down the institutional barrier preventing Hong Kong's investors and residents from entering the mainland. Driven by private investors, Hong Kong transferred the majority of its manufacturing to the PRD in the period of 1978–1997. A strong economic relationship was soon established as a result of scale and spatial expansion of the production system from Hong Kong (Sit 1995: 183). Large-scale outward processing, practiced under the model of "front shop, back factory," in Hong Kong and the PRD (Lo 1989; Sit 1995; Shen 2002, 2003) was successful and lifted the level of development in both Hong Kong and the PRD to a higher level. By 1997, Hong Kong had become a well-established world city. Its real GDP per capita was US$24,540, ranked fourth in the world in 1997 (World Bank 1998).

Nevertheless, an anti-economic-integration TSE also emerged since the transfer of the manufacturing from Hong Kong to the PRD region has caused a serious unemployment problem among Hong Kong's blue-collar population (Chan 1995: 52). But the anti-economic-integration TSE was less influential than the pro-integration TSE. The latter had a wide base of businessmen and middle class,

and the government took a neutral stand. Recognizing the huge economic benefit of cross-border investment, the dominant colonial geopolitical TSE did not intervene in cross-border investment from Hong Kong. But the role of Hong Kong's colonial government was very limited, playing a passive role at most.

There was no synergy between the pro-economic-integration TSE and the colonial geopolitical TSE because political indifference persisted between the governments on both sides of the border. Ideologically, socialism and the government-driven economy on the mainland were considered not an ideal partnership for cooperation at the Hong Kong government level. As a result, the Hong Kong government did not ever consider the interest of the Hong Kong–PRD as a whole city-region. No serious effort was made by the government to consolidate the cross-border infrastructure. This was a serious lapse that became clear after 1997 (Yeung 2002).

Under the umbrella of "positive nonintervention policy," the then-colonial Hong Kong government neither supported nor restricted the increasing cross-border economic links initiated mainly by local businessmen. The role of the Hong Kong government in cross-border development can be described generally as tolerant or disregarding, rather than promotional. With regard to migration and tourists from mainland, the Hong Kong government implemented a strict policy using a quota system (Lam and Liu 1998). Hong Kong's door was closed to professionals on the mainland while quite open to professionals from other countries. A Fortress Hong Kong mentality was already laid down in the colonial period.

The Hong Kong government rarely listened to calls for better and coordinated cross-border infrastructure development. For example, the government of Shenzhen city proposed to build a Hong Kong/Shenzhen western corridor jointly with Hong Kong in 1993. This proposal did not materialize before 1997. The passive response of the Hong Kong government paralleled concerns over the expected return of Hong Kong to China in 1997. These concerns were instrumental in the formation of the Fortress Hong Kong mentality. When the Sino-British joint declaration on the future of Hong Kong was released in 1984, many Hong Kong businessmen and residents in Hong Kong were worried about the future, although the aim of the agreement was to provide a secure future for the city-state (Walden 1989: 46).

Despite these concerns, social ties, along with cross-border investment activities, between Hong Kong and the PRD region continued to expand dramatically. This is best illustrated by the rapid growth of passengers going through the border crossing at Lowu. The annual number of exits increased from 12.79 million to 22.95 million in the period of 1990–1996. It was clear that private businessmen and residents from Hong Kong played a leading role in cross-border development, while the contribution of the Hong Kong government was negligible. The pro-economic-integration TSE coexisted with the colonial, political TSE and the Fortress Hong Kong mentality. There was little open conflict between the pro-economic-integration TSE and the anti-economic-integration TSE because the public's concerns were dominated by the 1997 handover (Chung 2001).

Cross-border urban governance in Hong Kong: from protectionism to free trade zone after 1997

The return of Hong Kong to China in 1997 was expected to be a catalyst for developing a close economic relationship between the Hong Kong and mainland China, especially at the governmental level. The return of Hong Kong to China strengthened Hong Kong's nationalist TSE, which had been overshadowed by the colonial geopolitical TSE before 1997. With the closure of Hong Kong's colonial history and the departure of its colonial government, the nationalist TSE gained great legitimacy. The nationalist TSE and the pro-economic-integration TSE were expected to reinforce each other to accelerate cross-border economic integration in the Hong Kong–PRD region. This is clear in various policy addresses, which is the most important strategic and policy documents of HKSAR, delivered by the first chief executive, Tung Chee-hwa, since 1997. In his first policy address in 1997, Tung (1997) said,

> In recent decades, Hong Kong and the mainland have established broader and closer relationships in many areas. Whereas previously they had mainly been confined to the non-governmental level, with reunification and with government support, the relationship between Hong Kong and the Mainland should flourish comprehensively in all fields such as the economy, finance, trade, transport, culture, education, science and technology, tourism and sports.

A high-level framework, "Hong Kong-Guangdong Cooperation Joint Conference," was established in March 1998, and it was planned to be held half-yearly. His 1997 policy address clearly indicated Tung's wish to develop close economic relations with the mainland. But the outbreak of the AFC had a negative impact on this development.

After two years of the AFC, in his 1999 policy address (Tung 1999), Tung seems to have settled on the destiny for Hong Kong: developing Hong Kong as a world city based on the advice of the Commission on Strategic Development formed in early 1998. In the process of becoming a world-class city, strengthening ties with the mainland and joint development of the PRD region were again considered important. Hong Kong's economy recovered in 2000, when its GDP grew by 10.2%. The 2000 policy address focused on internal matters of the HKSAR, especially education, poverty and governance. Tung believed that China's imminent accession to the WTO would stimulate joint development of the regional economy by both Hong Kong and Guangdong.

In 2001, Hong Kong's economy went down again following the bursting of the dot.com bubble, the slowing down of the American economy and the 9/11 terrorist attack in New York. In his 2001 policy address, Tung (2001) admitted, "We are facing the most acute economic problems for many years." Considering the gloomy world economy and continuing stable economic growth on the mainland, Tung was optimistic about Hong Kong: "We are in the right place at the right time to benefit most from the economic development of our Motherland."

The mainland, he said, would not only provide many opportunities but also bring new challenges to Hong Kong, especially to maintain its competitiveness. Tung recognized the necessity of economic restructuring in Hong Kong. He also understood that the support of the central government was important since the policies of mainland China would affect economic cooperation between Hong Kong and the PRD. Nevertheless, there was little progress in cross-border cooperation until 2001. Significant progress only took place after late 2001, with important changes in the government's vision of its role in the Hong Kong–PRD region.

The nationalist TSE and the pro-economic-integration TSE, exemplified by Tung's policy addresses, clashed with the politically distancing TSE that was coupled with the anti-economic-integration TSE in the initial period after 1997. The nationalist TSE and the politically distancing TSE had a quite different approach toward the central government and Hong Kong–PRD integration. Participants in the politically distancing TSE were keen to safeguard the autonomy of Hong Kong. Many of them, especially pro-democracy politicians, also participated in the anti-economic-integration TSE since they worried that economic integration would eventually undermine political autonomy. Indeed, the return of Hong Kong to China in 1997 marked the beginning of a period of cross-border protectionism. Generally, despite Tung's goodwill, the HKSAR government was skeptical of most suggestions from the Shenzhen side. It did not actively move toward cooperation, but showed resistance toward closer, cross-border integration. There are two explanations for this cross-border protectionism: one political, the other economic.

The first explanation lies in the emergence of the politically distancing TSE in post-handover Hong Kong. It has been recognized that local and international confidence in the future of Hong Kong was fragile after 1997 (Yeung 2002). For many Hong Kong residents, the return to China in 1997 was a reluctant one. Impressed by Hong Kong's great postwar success in the colonial era, some senior officials and the middle class were most worried about potential interference in Hong Kong's internal affairs by the Chinese government. They advocated political separation between Hong Kong and the mainland, strengthening the politically distancing TSE.

The politically distancing TSE had its origins before 1997. To minimize the possibility of the imminent rule of pro-China leaders after 1997 and to advance its own political interest, the colonial government, led by Chris Patten, deliberately, but subtly, manipulated the anti-Communist sentiments of the people of Hong Kong to keep their distance politically from the Chinese government and the new HKSAR government (Lau 2002: 4). Democratic reforms and human rights legislation were introduced soon after the 1984 Sino-British joint declaration to nurture a kind of people-based political power to fill the gap left by the departing regime. Thus, alongside a number of organizations and people who participated in the nationalist TSE in anticipating the 1997 handover, a group of politicians, officials and organizations, exemplified by the Democratic Party, actively participated in the politically distancing TSE. After 1997, this group focused on promoting a "Hong Kong first" mentality for its legitimacy. Society in Hong Kong was polarized politically into pro-Beijing and anti-Beijing camps after 1997.

The HKSAR government was established on 1 July 1997. Most previous civil servants stayed on in the new government, including the chief secretary for administration, Ms. Chan. She shared similar views with participants in the politically distancing TSE, and her standing was critical in making the TSE influential after 1997. The disagreements and sometimes open clashes between the chief executive and chief secretary for administration crippled policy making and policy implementation of the HKSAR government in the period of 1997–2000.

Ms. Chan pointed out in one speech that too many Hong Kong people "have looked towards the mainland at the expense of our traditional links with the rest of the world" and that they "seem to forget that our strength lies in the separation which is fundamental to the success of One Country, Two Systems" (Chan 2001). She did not agree that Hong Kong should "in any way ignore or stand out against the national interest," but said her priority was to "speak up for Hong Kong" with "Hong Kong's conscience." Such views produced competitive perspectives concerning Hong Kong's interest versus national interest rather than both interests complementing and reinforcing each other.

Similar to the concerns of the Taiwan government, some HKSAR officials were clearly concerned that close economic integration could undermine the political autonomy of HKSAR. Some higher civil servants argued, "We need to avoid the contamination of Guangdong" and "the border protects us" (Rohlen 2000). Thus the politically distancing TSE reinforced the anti-economic-integration TSE.

The second explanation for the conservative policy of the HKSAR government toward cross-border development was the potentially negative economic impact on Hong Kong. For example, property prices and retailing in the new territories of Hong Kong would be affected if many residents from Hong Kong bought property or went shopping in the PRD region. The participants in the anti-economic-integration TSE included some real estate developers, homeowners and retailers in Hong Kong. With the presence of a politically distancing TSE, their complaints were well noted by government officials.

The 1997 AFC made the government even more conservative about cross-border integration. The price index of private housing dropped by 46.8%, and the rental index of private housing dropped by 27.1% in the period of 1997–2000 (CSD 2001). The Hang Seng Index dropped from over 16,000 in 1997 to the bottom of 6,600 in August 1998. Hong Kong's domestic export dropped from HK$211.4 billion in 1997 to HK$170.6 billion in 1999. Hong Kong registered a negative GDP growth rate of –5.3% in 1998 and –3.0% in 1999 (Table 7.2).

In 2000, Hong Kong's economy seemed to be on its way to recovery with a positive GDP growth rate of 10.2% (CSD 2001). However, the economy worsened again after the 9/11 event in New York. In December 2001, the value of total exports of goods decreased by 10.4% over a year earlier. The value of re-exports dropped by 10.6%, while the value of domestic exports fell by 8.5% (CSD 2002a). The GDP growth rate was only 0.6% in the year 2001 (CSD 2002b). The seasonally adjusted unemployment rate rose to 7.8% in May–July 2002 (CSD 2002c).

Economic slowdown has had significant implications on the balance of Hong Kong's government budget. Its revenue dropped from HK$281.2 billion in

Table 7.2 GDP growth rate, GDP per capita and social security schemes expenditure in Hong Kong 1991–2000

Year	*GDP growth rate (%)*	*GDP per capita (HK$1,000)*	*Social security schemes expenditure (HK$billion)*
1991	5.1	116	3.7
1994	5.4	167	6.6
1996	4.5	185	11.2
1997	5.0	204	13.9
1998	−5.3	192	17.8
1999	−3.0	186	18.5
2000	10.2	190	18.7

Data source: CSD (2001)

1997/1998 to HK$225.1 billion in 2000/2001 with significant loss in the earnings and income tax, stamp duty and capital revenue. Land premium dropped from the peak of HK$63.6 billion in 1997/1998 to HK$29.5 billion in 2000/2001 and estimated HK$8.5 billion in 2001/2002 (CSD 2001; Finance Bureau 2002). As a result, the HKSAR government incurred a deficit of HK$23.3 billion in 1998/1999, HK$7.8 billion in 2000/2001 and as much as HK$63.3 billion in 2001/2002 (Treasury Branch 2002; Leung 2002).

Because of AFC, the new HKSAR government had to struggle with the economic downturn. As mentioned before, a full regional integration of Hong Kong with the PRD region was not considered to be of benefit to Hong Kong's economy. The anti-economic-integration TSE and Fortress Hong Kong mentality were further strengthened. As a result, the HKSAR government was hesitant to improve cross-boundary arrangements before 2001. Many policy suggestions from businessmen and the public were stalled even before a serious policy study took place. Only limited progress was achieved at the government level during the period 1997–2000. For example, after mid-October 1998, the opening time of two main border crossings, Lowu and Lok Ma Chau, for passengers had been extended by one hour.

Generally, Hong Kong did not play a leading role in strengthening cooperation in the Hong Kong–PRD region because of the prevailing politically distancing TSE and anti-economic-integration TSE. The nationalist TSE and the pro-economic-integration TSE were not able to advance much more in the period of 1997–2000 than what had been achieved before 1997.

The influence of the politically distancing TSE declined dramatically after the resignation of the former chief secretary for administration in April 2002. The open disagreement among the top government officials on the relationship with the mainland subsided (Lau 2002: 12). Thus it was much easier for Tung to lead the HKSAR government with an active approach to the cross-border cooperation between Hong Kong and PRD. Clearly, the stance of key officials has significant influence on cross-border governance. They are in control of the policy-making

process and have ample room to initiate new policies. More importantly, the argument that Hong Kong will suffer from close economic integration has been outweighed by the argument that close economic integration will benefit the city-state. According to resident surveys in May 2001 and November 2002, the percentage of residents with interest in buying housing property on the mainland declined from 9.7% to 4.8% (Yeung 2003: 40).

According to the ranking of growth competitiveness by the World Economic Forum (2002), Hong Kong's rank fell from 2nd in 1997 to 13th in 2001. Hong Kong's rank in GDP per capita fell from 4th in 1997 to 17th in 2000 in the world (World Bank 2002). On the other side of the border, the mainland and PRD were rising rapidly. The entry of China into the WTO on 11 December 2001 brought both opportunities and challenges. Rohlen (2000) argued, "A policy of maintaining the status quo carries a significant price tag in the lost opportunities." The actors in the pro-economic-integration TSE stress that Hong Kong must act now to secure its future in the age of accelerated globalization.

Another important challenge to Hong Kong is the sustainability of low-cost production in the PRD. While Hong Kong still has many problems in integrating closely with the PRD, the economy in the YRD, led by Shanghai with substantial R&D facilities, is advancing rapidly. The PRD is losing out in terms of economic growth and foreign investment. In the year 2000, contracted foreign investment was US$15.8 billion in Guangdong, less than the total of US$26.2 billion in Shanghai, Jiangsu and Zhejiang (*Mingpao Daily* 2002a).

Shenzhen also brings a major challenge to the future of Hong Kong. Shenzhen's port facilities have expanded: in 2001, the entire Shenzhen port handled a total of 5.07 million TEUs and became the eighth-busiest container port in the world (Marine Department of the Hong Kong SAR 2018). Guangdong and Shenzhen have become more aggressive in their development strategies. Their enthusiasm for close cross-border cooperation is waning, as their previous suggestions have received little response from the HKSAR government, and Shenzhen is successfully developing its own high-tech industry without much cooperation from the HKSAR government. These cities now demand a more balanced horizontal division of labor instead of the existing vertical model of "front shop, back factory."

It is clear that the external environment in China and the world has substantial influence on the geopolitical and geoeconomic TSEs in Hong Kong. Hong Kong people are beginning to abandon the old mind-set of "Great Hongkongism," realizing that integration with the mainland is the only way to move forward. Enhancing Hong Kong's integration with the PRD is regarded by many businessmen and scholars in Hong Kong as a critical measure for moving Hong Kong out of recession and into another period of prosperity (*Mingpao Daily* 2002b).

The involvement of the HKSAR government in the process of integration has also been considered important. Some scholars urged government officials to change their old colonial attitude of distancing Hong Kong from the mainland and to increase their knowledge about mainland China (*Mingpao Daily* 2002c). The year 2001 was indicative of a fundamental shift of the HKSAR government's position toward cooperation and development in the Hong Kong–PRD region,

greatly strengthening the pro-economic-integration TSE. This was exemplified by the government's proposal to establish a free trade zone (closer economic partnership agreement) between the HKSAR and the mainland on 20 December 2001 (*Mingpao Daily* 2001; Shen 2004; Shen and Yeung 2004).

At the request of the Hong Kong side, the central government has also been more active in facilitating negotiation and arrangement for cross-border development since late 2001. Since 1997, the central government has taken the position that it will not intervene in Hong Kong–PRD cooperation unless it is asked for coordination and assistance by Hong Kong. These developments mark the beginning of a new period of cross-border governance. The nature of the cross-border governance network is transformed so that now the HKSAR government, backed by a strong pro-economic-integration TSE and nationalist TSE in Hong Kong, assumes a leading role in cross-border development, while the central government acts as facilitator and coordinator. The following examples illustrate the fast track of cross-border cooperation and development under the new cross-border governance.

- The issue of extending opening hours for border crossings received the attention of the State Council in July 2001. The key issue was that the central government needed to increase funding for the cross-border operation on the Shenzhen side. Hong Kong also had to spend over HK$8 million a year for extended border crossing operation. With the involvement of central government, the issue was resolved more quickly than the HKSAR government expected.
- The case of Hong Kong-Zhuhai/Macao Bridge (Lingdingyang Bridge previously) was reopened in 2002. Senior Hong Kong officials now support the idea that the bridge needs to be built well before 2016.
- The quota on the number of tourists from mainland to Hong Kong, 2000 tourists a day, was abolished on 1 January 2002.

Conclusion

Accelerating globalization worldwide has resulted in the restructuring of the political, economic, social, and culture orders in the world. Such global restructuring often involves dense and complicated governance processes at the international, national, regional and local levels. The changing role of the state has been most controversial in contrast to the clear and catalyzing role of TNCs in the globalization process (Dunning 1995; Pun and Lee 2002). Whether and how the state acts tactically to resist or facilitate regional integration and globalization is an important issue.

The Hong Kong–PRD region has experienced rapid globalization and regional integration in recent decades. This has involved the PRD region on the mainland that has implemented a reform and open door policy since 1978 and, more importantly, Hong Kong that is a well-known free port for many years.

The framework of TSEs has been adopted for a study of cross-border governance in Hong Kong, especially the role of the state in cross-border urban governance.

Previous studies have argued that a structurally cohesive geoeconomic TSE is in place in southern China, resulting in closer and closer regional integration. This chapter argues that such a tension-free model of regional integration has never existed in southern China because of complexities of the governance network and the interaction between geoeconomic and geopolitical TSEs. The chapter also finds that the shift from cross-border protectionism to cross-border free trade zone in Hong Kong's cross-border urban governance since 2001 was a result of the rearticulation of the state cutting through the geoeconomic and geopolitical TSEs. Facing the challenge of economic recession and increasing pressure of the business sector, the Hong Kong government eventually became more active in promoting cross-border development in 2001. It even took the initiative to ask the central government to act as facilitator and coordinator to reach agreements with the PRD cities and Guangdong.

The divergent interests and visions of a cross-border relationship between Hong Kong and the PRD region have been the focus of debate both before and after 1997. In the case of cross-border city-regions, governments on both sides of the border may adopt active or passive strategies toward regional integration and globalization. An active strategy for regional integration means that one actively designs and implements incentive policies to facilitate cross-border flows and actively seeks cooperation and partnership with the other side of the border. A passive strategy toward regional integration means that one does not respond to the increasing needs and pressure on cross-border social-economic linkages, including transport infrastructure, for good planning. Only very limited measures are taken, and cross-border issues are generally ignored. The Hong Kong government before 2000 could be considered an example of using such a strategy.

The return of Hong Kong to China in 1997 was expected to be a catalyst for developing close economic relationships between the two, especially at the governmental level. The nationalist TSE and the pro-economic-integration TSE were expected to reinforce each other. Close economic cooperation between Hong Kong and the PRD region was high on the agenda of the first chief executive of the HKSAR. Nevertheless, there was little progress in cross-border cooperation in the period of 1997–2000. Indeed, July 1997 marked the beginning of a period of cross-border protectionism because of the emergence of the politically distancing TSE in post-handover Hong Kong and the potentially negative economic impact of cross-border development on Hong Kong.

Hong Kong's economy entered another round of stagnancy after the 9/11 event in New York in 2001. In the meantime, the economy on the mainland continued to grow despite a worldwide economic slowdown. China's entry into the WTO in 2001 was expected to further boost its economy, upgrade its service sector and increase competition in the mainland market. Hong Kong is facing competition from cities in the PRD, such as Shenzhen, while the Hong Kong–PRD region is facing competition from the YRD region. Without a close economic tie with the hinterland in the PRD and Guangdong, Hong Kong's economy will suffer, since goods-and-service trade with the PRD has been an important driving force of its economy (Shen 2003). On the other hand, as a leading world city in Asia,

Hong Kong can play an indispensable role in providing financial and professional service to the PRD region (Enright et al. 1997; Meyer 2000). After China's entry into the WTO in 2001, the argument that Hong Kong would suffer from closer economic-integration has been outweighed by the argument that closer economic integration will benefit Hong Kong. With the departure of the former chief secretary for administration, the influence of politically distancing TSE has subsided. Thus the HKSAR government is moving toward a close economic relation with the PRD. It has been argued that the HKSAR government should facilitate easy movement of people and goods between Hong Kong and the PRD while helping Hong Kong's enterprises to consolidate their competitive edge on the mainland and in world markets in terms of human resources, R&D, logistics and producer services.

It is clear that the HKSAR government plays an indispensable role in mediating the cross-border integration between Hong Kong and the PRD according to its own political and economic considerations. This is in stark contrast to the notions of the laissez-faire policy of Hong Kong. It is clear that its government has always responded selectively to cross-border issues, according to prevailing political and economic interests. The case of cross-border governance of Hong Kong vividly shows the role of the state as a gatekeeper in the globalizing process even for the freest economy in the world. Yet its strategy changes according to changing social-economic circumstances in the pursuit of its interests.

Note

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8 Cross-boundary integration in Hong Kong and Shenzhen[1]

Introduction

In the age of globalization, dramatic spatial restructuring spurs the emergence of cross-border regions and new forms of regional integration (Perkmann 2003; Bunnell et al. 2006; Otgaar et al. 2008; Shen 2011). Regional integration in boundary areas is a comprehensive process involving economic, political and social dimensions of integration.

Hong Kong and Shenzhen, the Pearl River Delta (PRD) in general, have formed a dense regional production network since 1978. Political history, kinship and business ties have facilitated close economic integration in the region (Grundy-Warr et al. 1999: 309). The implementation of "one country two systems (OCTS)" in Hong Kong after 1997 also distinguishes this region from other cross-border regions (Sparke et al. 2004; Shen 2004; Yeung and Shen 2008).

Scholars have used the model of "front shop, back factory" to describe the economic relationship between Hong Kong and the PRD (Chen 2007; Chan 1998; Li 1998; Sit 1998; Cheung 2006). The economic integration has been driven by businessmen and residents. But cooperation at government level was not smooth before 2001. Since then, the HKSAR government has become increasingly active in enhancing government-to-government cooperation with PRD. Before 1997, the Hong Kong government did not ever consider the interest of the Hong Kong–PRD as a whole city-region, with little investment in the cross-border infrastructure (Cheung 2005). But even after 1997, scholars pointed out that some HKSAR officials were concerned that close economic integration could undermine the political autonomy of the HKSAR (Rohlen 2000). Scholars found fierce competition in ports and airports in the region (Song 2002; Chen 2007). Cheung (2006) argued that different perspectives in Hong Kong and Guangdong are major constraints for cross-boundary cooperation.

Previous studies on regional integration in Hong Kong–PRD region and Hong Kong–Shenzhen region mainly focused on economic cooperation (Chen 2007; Yang 2005; Sit 1998). The effect of social integration and the politics of cross-border governance are largely ignored with a few exceptions (Lin and Tse 2005; Shen 2004).

By tracing the process of Hong Kong and Shenzhen integration during the past three decades, Luo and Shen (2012) found three stages in Hong Kong–Shenzhen regionalization – namely, the emergence of informal regional society from below, transitional regional society and formal regional society. The changing relation between Hong Kong and Shenzhen/PRD region has also been considered in the context of rising China and internal social and economic conditions in Hong Kong (Shen and Luo 2013). Economically, PRD and Shenzhen have become stronger with a growing service sector, which has important implications to Hong Kong. But there is little study on the political and cultural differences between Hong Kong and mainland China and their impact on Hong Kong–Shenzhen integration.

This chapter will use Hong Kong and Shenzhen as a case study to examine the status and relations of economic integration, institutional integration and social integration. The integration of cross-border communities that share common value and identity is considered the most advanced form of cross-border integration as economic or institutional integration can be motivated just by economic or political interest and may not ensure social integration. Thus it is used as a key criterion to assess whether Hong Kong–Shenzhen is really a twin city. Economic and trading statistics, government documents and first-hand survey data will be used in this study.

The main research questions are as follows. Are the economic, institutional and social integration processes progressing at the same pace? Have the economic and institutional integrations enhanced social integration? How do political and cultural factors and OCTS affect regional integration? Is Hong Kong–Shenzhen really a twin city?

The remainder of this chapter is organized as follows. The next section reviews the conceptual advancement in the study of borderland and the integration of cross-border regions. The next three sections examine the regional economic integration, institutional integration and integration of cross-border communities in Hong Kong–Shenzhen region. Some conclusions are reached in the final section.

Borderland and integration of cross-border regions

Significant regional economic integration has taken place in many cross-border regions, e.g., Hong Kong–PRD region, Indonesia-Malaysia-Singapore growth triangle and the US-Mexico border (Chen and Ho 1994; Grundy-Warr et al. 1999; Shen 2003; Bunnell et al. 2006; Sparrow 2001). Such cross-border regional integration, called subregionalism or micro-regionalism, is a subset of regional projects which have been examined from the popular perspective of "new regionalism," emphasizing an open and multidimensional system with multiple (state and social) actors (Hettne 2003).

Based on the literature on borders, boundaries, frontiers and borderland regions, Brunet-Jailly (2005) suggests a comprehensive framework with four equally important analytical lenses: (1) market forces and trade flows, (2) policy activities of multiple levels of governments on adjacent borders, (3) the particular political clout of borderland communities and (4) the specific culture of borderland

communities. The main hypothesis of the theory of borderland studies proposed by Brunet-Jailly is, if each analytical lens enhances or complements one another, what emerges is a borderland region that is culturally emerging and integrating. This hypothesis has not been fully tested in previous studies. The findings from Hong Kong–Shenzhen region can shed light on the complex relations among the economic, institutional and social processes of cross-border integration.

An integrated borderland means the development of genuine transnational institutions and a more complete harmonization of regulatory systems (Grundy-Warr et al. 1999: 322). Brunet-Jailly (2005) pointed out that a borderland that is economically, politically and culturally emerging, and integrating is an ideal case. The literature documents many cases with local tensions, despite shared infrastructures and strong economic linkages (Bunnell et al. 2006; Otgaar et al. 2008). Grundy-Warr et al. (1999) argued that the growth triangles in Asia lag behind Europe and North America in transboundary cooperation because of the lack of bottom-up initiatives, and they tend to move toward "interdependent" rather than "integrated" borderland with no institutional innovation.

The economic, institutional, political and social processes of integration in cross-border regions have been studied separately, although there are interactions among these processes. The concept of "cross-border regional production systems," focusing on economic integration, has been used to describe the cross-border regions in Asia (Tsui-Auch 1999; Shen 2003). Such a system involves at least two countries with one well developed and the other one underdeveloped. The two countries have different factor endowments and the subsequent development will mainly take place in the border region of the less developed country where abundant cheap land and labor are available. A spatial division of labor will be developed (Sit 1998). Nevertheless, regional economic integration and cooperation has never been a smooth process as each side has its own economic interest (Barter 2006). In cross-border regions of North America, intra-metropolitan regional competition is common (Brunet-Jailly 2004). Similar competition tension exists in the development of airports, container ports and cross-boundary infrastructure in Hong Kong–PRD region (Shen 2008a). One functionalist explanation is that competition prevails, fostering competitiveness and distrust, as "cities have very few policy options" (Peterson 1981: 111).

Recent studies have paid increasing attention to political and social dimensions of integration. The geopolitical concerns can constrain and limit the process of economic integration. In the study of Indonesia-Malaysia-Singapore growth triangle, Grundy-Warr et al. (1999: 306) concluded that countries are not willing to compromise national sovereignty for the sake of the development of a functionally integrated cross-border economy. The growth triangle is characterized by cooperation without institutional innovation or many changes in regulatory framework, national security enhancing instead of the loss of sovereignty and incremental intraregional cooperation.

Another useful concept of "bi-national city" refers to urbanized borderland communities. The bi-national city is "divided" by a national border, but shares a common hinterland and whose inhabitants have a sense of belonging together

(Ehlers and Buursink 2000). The term goes beyond nationalism and creates a common cross-border identity. The concept stresses the utopian aspect of cross-border integration (Ehlers 2001). Not many cross-border regions have reached such an ideal stage.

Bunnell et al. (2006) documented the agency and struggle in the context of Singapore's cross-border urban expansion into adjacent parts of Indonesia. The indigenous villagers in Bintan were disrupted. Franz and Hornych (2010) examined the conditions that ease or complicate cooperation between municipalities with a case study on the "Saxony triangle." Sparrow (2001) concluded that the relationship between San Diego and Tijuana is driven by factors of economics not trust. Following over 100 years as neighbors, the two cities are still learning to coexist with each other.

While a bi-national city involves national borders, a more general term is "twin city," which includes closely integrated cities between countries or within a country. The territorial integration of two cities can be tested by following question: what is the emotional and mental "togetherness" of the two urban communities, on the side of their politicians, administrators and residents (Buursink 1996)?

Following the twin city model, four steps or stages in the progress of territorial integration are proposed by Sparrow: Step 1, physical integration; Step 2, behavioral integration; Step 3, organizational integration; and Step 4, politico-administrative integration (Buursink 1996). Although one step may not follow the next step exactly in the cross-border integration, the early steps are easier and more likely to be achieved and later steps are more difficult but also representing more close and advanced integration. Cross-border cities can be tested to find out the extent of cross-border integration, which stage they have reached and whether they can be called a twin city.

In the study of cross-border integration involving geopolitical and geoeconomic power relations, one useful concept is TSE. TSE is a nexi of social and political relations that projects a coherent identity to a space. The concept was applied to cross-border regions by Sum (2001) and to Hong Kong–PRD region by Shen (2004). The TSE concept will be used in the analysis of the effect of political and cultural factors on cross-border integration in this chapter.

Following the earlier discussions, the territorial integration of two cities can be evaluated in terms of economic integration, institutional integration involving cross-border cooperation between governments and integration of cross-border communities that share a common identity and value system. The interaction among the three subprocesses is likely to be complicated with many possibilities. For example, the integration of cross-border communities may be delayed, partial or not happen at all even under rapid economic integration.

Hong Kong and Shenzhen are two major Chinese cities governed by OCTS under basic law. This makes the case distinctive from other cross-border regions. The general term of "twin cities" can be adopted to analyze the territorial integration of the two cities. Hong Kong has an area of 1,108 km^2 and a population of 7.07 million in 2011 (Figure 8.1). Hong Kong was a colonial city from 1841 to 1997, and it has become an SAR of China with high autonomy since 1997. OCTS

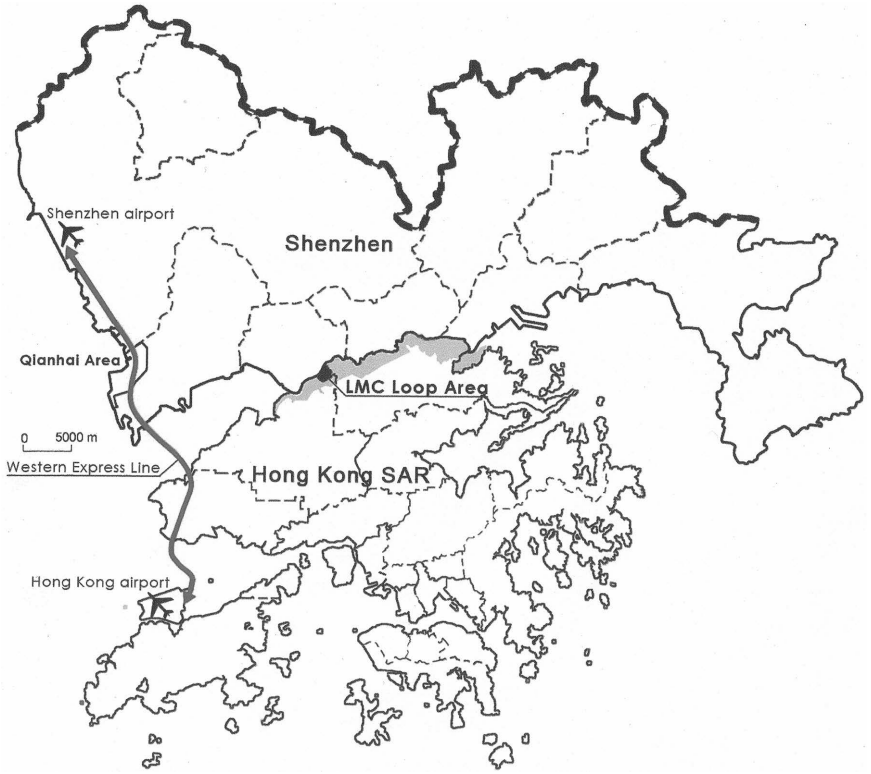

Figure 8.1 Map of Hong Kong and Shenzhen showing RLA and western express line

has been implemented in Hong Kong. Hong Kong and mainland China have a special political relationship. Generally, Hong Kong remains a quasi city-state, like Singapore, with its own money, immigration and customs control, and a full member of WTO. Hong Kong has emerged as an advanced service center for China since 1978 when China introduced economic reforms and the open door policy.

Shenzhen city origins from the SEZ set up by China on the border area near Hong Kong in 1980. The total area of Shenzhen city is 1991.64 km^2. The area of the Shenzhen SEZ was 417.16 km^2 before July 2010, and it has been extended to the whole city since then. The city had a population of 10.37 million in 2010 (SSB and NBS Survey Office in Shenzhen 2011). There was border control between Shenzhen SEZ and the rest of China in the 1980s and 1990s. This control was abolished after the extension of SEZ area to the whole city. Shenzhen SEZ was established to make use of capital from Hong Kong as well as to prepare the return of Hong Kong to China in 1997. Cross-border integration of Hong

Kong–Shenzhen region exemplifies Hong Kong's unique political and economic relation with mainland China.

This chapter attempts to examine the pace and interaction of economic, institutional and social integrations, and whether a twin city, with a high degree of integration, has been formed in Hong Kong–Shenzhen region. It will also reveal how political and cultural factors have affected the regional integration in the region.

Urban economic integration: FDI and trade between Hong Kong and Shenzhen

Economically, Hong Kong and Shenzhen have been well integrated since 1980, forming one of the most economically integrated cross-border regions in the world (Ohmae 1995; Chen and Ho 1994; Chen 2007; Chan 1998; Sit 1998). Such close economic integration can be shown clearly using investment and trade indicators between the two cities.

Hong Kong plays an important role in foreign direct investment (FDI) and international trade of mainland China. A large portion of Hong Kong FDI goes to Shenzhen. Shenzhen received 27.1% of Hong Kong FDI to mainland China in 1986, 8.1% in 1997 and 7.1% in 2010. Hong Kong is the major source of foreign capital in Shenzhen, accounting for 78.9% in 1986, 70.7% in 1997 and 59.3% in 2010 (Shen 2008b; SSB and NBS Survey Office in Shenzhen 2011).

Shenzhen's export grew from US$9.9 billion in 1991 to US$25.5 billion in 1997 and US$204.2 billion in 2010 (Table 8.1). It contributed 12.9% of the total export of China. More importantly, FDI and Hong Kong investors play a significant role in the growth of export in Shenzhen. Outward processing related export accounts for the bulk of export from Shenzhen. In 2010, the outward processing related export reached US$117.4 billion and the export by FDI firms was US$120.8 billion. A high proportion of Shenzhen's export went to Hong Kong, mostly re-exported to other markets then. Shenzhen to Hong Kong export grew from US$9.3 billion in 1991 to US$84.4 billion in 2010. It is useful to note that such export increased by three times from 1997 to 2010. Its share in the total export from mainland to Hong Kong was 29.0% in 1991 and 38.7% in 2010 (NBS 2011; SSB 2006; SSB and NBS Survey Office in Shenzhen 2011). Clearly, Shenzhen is a major destination for FDI, outward processing, re-export and logistics activities of Hong Kong companies. Shenzhen and Hong Kong are important economic and trade partners.

Another major role of Shenzhen is as a gateway of economic integration of Hong Kong and mainland China. Both Hong Kong and mainland companies can use Shenzhen as a base for their cross-boundary activities. For example, many mainland companies and local governments have set up their branches or offices in Shenzhen. Many Hong Kong banks have also set up branches in Shenzhen to expand their services.

Clearly, the economies of Hong Kong and Shenzhen are deeply integrated and mutually dependent, possibly deeper than any other cross-border regions in the world. This has been achieved by active promotion of a local development state in

Table 8.1 Export of Shenzhen and the share of Shenzhen to Hong Kong export 1991–2010 (US$ billion)

Year	*Total export*	*Export related to outward processing*	*Export of FDI firms*	*Shenzhen to Hong Kong export*	*Share of Shenzhen to Hong Kong export in Shenzhen total export (%)*	*Share of Shenzhen to Hong Kong export in China to Hong Kong export (%)*
1991	9.9	8.7	3.5	9.3	94.4	29.0
1997	25.5	21.1	14.1	21.2	83.1	48.4
2005	101.5	75.5	67.6	45.1	44.4	36.2
2010	204.2	117.4	120.8	84.4	41.4	38.7

Data sources: NBS (2006, 2011); SSB (2006); SSB and NBS Survey Office in Shenzhen (2011).

Shenzhen and active investment by the business sector from Hong Kong. OCTS has a positive contribution to economic integration by various favorable measures such as CEPA (Yeung and Shen 2008).

Institutional integration: inter-city cooperation led by city governments

According to the twin city model, politico-administrative integration is an important step in the progress of territorial integration. Indeed, geopolitical concerns often constrain and limit rather than facilitate the process of economic integration in many cases in the world (Grundy-Warr et al. 1999; Aguiar 2012).

Sum's (2001) multiple TSE approach has been used to study the geopolitical and geoeconomic power relations in Hong Kong (Shen 2004). It is proposed that there are two competing geoeconomic TSEs, pro-economic integration TSE and anti-economic integration TSE, and two competing geopolitical TSEs, nationalist TSE and political distancing TSE, in Hong Kong. They have different economic interests and political agenda. The interaction, confrontation and dynamics of these TSEs determine Hong Kong's path in its cross-boundary relationship with Shenzhen and the mainland China in general. HKSAR government anxiously and actively attempted to resist close regional integration across the Hong Kong–Shenzhen boundary in the period of 1997–2000, even after the return of Hong Kong to China.

As a British colony up to 1997, a colonial geopolitical TSE dominated Hong Kong although a nationalist TSE always existed. Politically, it was natural for Hong Kong government and politicians to keep distance from the Chinese government. The cross-boundary relation between Hong Kong and Shenzhen/mainland China can be characterized as separation in the cold war period of 1949–1978. A pro-integration TSE emerged in Hong Kong after 1980, when China implemented open door policies and Shenzhen SEZ was designated. But there was no

synergy between the pro-economic integration TSE and colonial geopolitical TSE as political indifference persisted between the governments on both sides of the border.

The 1997 handover intensified rather than reduced the struggle between the two political TSEs. The local and international confidence in the future of Hong Kong was fragile after 1997. Political separation between Hong Kong and the mainland was desired, strengthening the political distancing TSE. The society in Hong Kong was divided politically into pro-Beijing and anti-Beijing camps after 1997. In the meantime, Hong Kong and mainland China adopt capitalist and socialist systems, respectively, under "one country." Although Chinese language and culture are popular in Hong Kong, there are significant gaps in the value system and ideology between Hong Kong and Shenzhen/mainland China, which is confirmed by residents surveys reported in the next section.

With the end of British colonial rule, the concern over Hong Kong's autonomy and protection of local identity, in place of geopolitical concern and national sovereignty in other cases, constrain significantly the institutional and social integration between Hong Kong and Shenzhen (Cheung 2006). This section focuses on the institutional integration at government levels.

After the return of Hong Kong to China, Shenzhen city attempted to develop a close relation with Hong Kong at government level. But the HKSAR government was skeptical of most suggestions from Shenzhen side and did not actively move toward cooperation, showing resistance and protectionism against closer cross-boundary integration. There are both political and economic reasons. First, some politicians and HKSAR officials were concerned that close economic integration could undermine the political autonomy of HKSAR. The political distancing TSE reinforced the anti-economic integration TSE. Second, the 1997 Asian Financial Crisis (AFC) made the government even more conservative about close cross-boundary integration. At that time, it was considered that the shopping and consumption in Shenzhen by many Hong Kong residents would affect Hong Kong's local economy negatively. The HKSAR government did not introduce the 24-hour operation for passengers in Lok Ma Chau boundary control point until 2003 (Yeung and Shen 2008). The existence of institutional barrier against economic integration was an outstanding feature of Hong Kong–Shenzhen relation in the 1990s.

The year 2001 was indicative of a fundamental shift of HKSAR government's position toward the cooperation and development in the Hong Kong–Shenzhen/PRD region (Shen 2011). After China's WTO entry, the argument that Hong Kong would suffer from close economic integration was outweighed by the argument that close economic integration would benefit Hong Kong. The resignation of Ms. Chan as the chief secretary in 2001 was also an important factor in the change of government attitude. Ms. Chan was quite conservative on regional integration with the PRD. Her successor, Mr. Donald Tsang, was a senior civil servant with much administrative experience. He cooperated well with Chief Executive Mr. Tung Chee-hwa, who was keen to enhance regional integration. This has made communication with mainland authorities much easier.

The HKSAR government proposed to establish a free trade zone between HKSAR and the mainland on 20 December 2001. This was called CEPA later, which was signed in 2003. The central government of China introduced many favorable policies to boost Hong Kong economy. HKSAR government moved on quickly to enhance regional integration. In 2004, Hong Kong and Shenzhen city governments signed the Memorandum on Close Cooperation between Hong Kong and Shenzhen and eight other cooperation agreements. Two governments formally agreed to embark on deep inter-city cooperation aiming to form Hong Kong–Shenzhen Metropolis. Hong Kong–Shenzhen Cooperation Forums was first held in 2006 (Hong Kong Economic and Trade Office 2007). Two outstanding inter-city cooperation projects led by governments are the boundary area development and airport cooperation.

The Shenzhen River divides two cities. The Shenzhen side is well developed. Shenzhen likes to take full advantage of being close to Hong Kong, which is a leading business center. But the Hong Kong side of the boundary is not developed. Hong Kong maintains a Frontier Closed Area (FCA) as a buffer zone between the two cities. It was set up in 1951. No development is allowed in the area.

One outstanding case of boundary area development is the Lok Ma Chau river loop area (RLA), about 1 km^2. This area was originally within the Shenzhen side of the boundary. In the 1990s, an improvement project was implemented in Shenzhen River to reduce flooding. As a result, the RLA fell within the Hong Kong side of the boundary after the completion of the project in April 1997. The land in the RLA is owned by Shenzhen, but is under the jurisdiction of Hong Kong (Figure 8.1). Shenzhen has great interest to develop the RLA as a strategic project. Nevertheless, Hong Kong had no plan to implement any substantial land development there until 2008.

Since 2001, both governments have been seeking ways to move on the inter-city cooperation. Previously, Hong Kong was more active than Shenzhen in the airport cooperation, while Shenzhen was more active than Hong Kong in the boundary area development. Thus the two projects have been moved ahead as both cities can benefit from cooperation. As one project may not benefit two cities equally, this case shows that two cities can cooperate in multiple projects to reach win-win situation. This is a useful experience from the region.

A Hong Kong/Shenzhen cooperation meeting was held in Hong Kong in December 2007. The meeting decided to set up two joint task forces – namely, the "Task Force on Airport Co-operation between Hong Kong and Shenzhen" and the "Hong Kong–Shenzhen Joint Task Force on Boundary District Development" to accelerate collaboration on two projects.

The two governments agreed to develop the RLA jointly as an experimental project of inter-city cooperation. The Task Force on Airport Co-operation would study the feasibility and economic benefits of connecting the two airports with a rail link and pursuing airport business cooperation, respectively. The rail link will link two airports in 23 minutes so that passengers can transfer between Hong Kong and Shenzhen airports conveniently. It is now named Hong Kong–Shenzhen Western Express Line, adding two middle stops (Figure 8.1).

Close relations have been established between Hong Kong and Shenzhen at the government level. Hong Kong–Shenzhen Co-operation Meetings have been held every year since 2007 to advance inter-city cooperation in various areas. The Hong Kong–Shenzhen Co-operation Forums have been held every year since 2006, except 2008, for discussion and sharing among academic and various social organizations in two cities. For example, the 2011 Hong Kong/Shenzhen Co-operation Meeting was co-chaired by Chief Secretary for Administration Mr. Stephen Lam and the mayor of the Shenzhen Municipal Government Mr. Xu Qin (The Information Services Department of HKSAR Government 2011). Top officials from the two cities reviewed the progress of the past year, and conducted detailed discussion on cooperation in a number of key areas, such as Qianhai development, financial services, trade, industries, cross-boundary infrastructure and livelihood issues. Four cooperation agreements were signed before the meeting: "Co-operation Arrangement on Legal Matters," "Co-operation Agreement on Jointly Taking Forward the Development of the Lok Ma Chau Loop"; "Co-operation Agreement on Enhancement of Safety of Imported and Exported Food" and "Long-Term Co-operation Agreement in Numerical Weather Prediction Technology."

It is noted that the notion of Hong Kong–Shenzhen Metropolis is not equal to the utopian vision of twin city. According to the Bauhinia Foundation Research Centre, the basic objective of Hong Kong–Shenzhen Metropolis is to achieve a freer flow of goods, capital, labor and information rather than a complete free flow of these factors because of the constraints of OCTS (BFRC 2007). Nevertheless, the aforementioned government-led, inter-city cooperation indicates significant, although limited, progress in institutional integration.

Lagged integration of cross-border communities: inadequate understanding and significant differences

Have close economic integration and limited institutional integration resulted in close social integration in the Hong Kong–Shenzhen region? This will happen if Brunet-Jailly's (2005) main hypothesis of the theory of borderland studies is valid. Resident surveys are conducted in Hong Kong and Shenzhen to reveal the condition of cross-border communities. The Hong Kong survey was conducted during the evenings (6:00–10:30 p.m.) of 30 January–4 February 2008 via the Telephone Survey Research Laboratory at the Chinese University of Hong Kong. An initial 7,000 random residential telephone numbers were generated and approached. Some 1,180 households answered the phone. But 183 households had no suitable respondents and 487 respondents refused to do the survey. The survey obtained a random sample of 510 respondents aged 18 years and above with a response rate of 51.2%, excluding households that had no suitable respondents. The Shenzhen survey was conducted during 15–25 February 2009 in the SEZ via a street survey in the main commercial centers and residential areas in all districts. The survey obtained 508 valid respondents aged 18 years and above.

The surveys collected data on the traveling behavior, the familiarity with the other city, the perceived impact, the degree of support and the main barriers to the

project of Hong Kong–Shenzhen metropolis. The first-hand survey data make it possible to examine the complicated perceptions and realities of the cross-border community. Cross-tabulation analyses are also conducted to examine the impact of traveling behavior on familiarity with the other city, the perceived impact and the degree of support of the project of Hong Kong–Shenzhen metropolis.

The surveys reveal that Hong Kong residents travel to Shenzhen more frequently than Shenzhen residents travel to Hong Kong. As many as 93.9% of the Hong Kong sample visited Shenzhen in the past year. Some 22.7% of Hong Kong sample visited Shenzhen at least once a month, and they were considered frequent visitors. Others who visited Shenzhen occasionally were considered not frequent visitors. Only 5.7% of the Hong Kong sample had never visited Shenzhen. In contrast, just 52.4% of the Shenzhen sample visited Hong Kong in the past year. Only 7.7% of the Shenzhen sample were frequent visitors. As high as 38.6% of the Shenzhen sample had never visited Hong Kong.

The difference in travel frequency is affected by the travel regulations. The majority of Hong Kong residents have Chinese nationality, and they can travel to mainland China any time using "home visit cards." Shenzhen residents are more restricted in their visits to Hong Kong. Shenzhen residents with local hukou could only apply for travel permit to visit Hong Kong one to two times every three month, seven days for each visit before April 2009. A similar policy has been extended to Shenzhen residents without Guangdong hukou since December 2009, and they can visit Hong Kong once every three months. Since April 2009, Shenzhen residents with local hukou could apply for travel permit to visit Hong Kong multiple times, seven days for each visit (Tsang 2010). This new policy can help these Shenzhen residents to visit Hong Kong more easily. But the majority of Shenzhen residents do not have local hukou, and they cannot apply for such permits for multiple visits. One important issue is whether the frequency of visits affects residents' familiarity with another city.

Indeed, most Hong Kong and Shenzhen residents are not familiar with the other city, indicating that the cross-border urban communities have not been well integrated (Table 8.2). In the Hong Kong sample, only 7.7% of the residents said that they are familiar or very familiar with Shenzhen city. Some 37.6% of residents are not familiar with Shenzhen, and 20.3% of residents are very unfamiliar with Shenzhen. In the Shenzhen sample, a higher proportion of residents, 13.3%, are familiar or very familiar with Hong Kong. Some 53.3% of residents are not familiar with Hong Kong and 8.4% of residents are very unfamiliar with Hong Kong. Traveling behavior has a significant effect on the knowledge and possible mutual understanding of a city. As high as 19.9% of frequent visitors from the Hong Kong sample are familiar or very familiar with Shenzhen. Some 36.8% of frequent visitors from the Shenzhen sample are familiar or very familiar with Hong Kong. There are only two Hong Kong respondents whose answer is "do no know/not sure" to the question of visiting frequency, and they are excluded from the analysis. There are 44 Shenzhen respondents whose answer is "do no know/not sure" to the question of visiting frequency. As shown in Table 8.2, their familiarity with Hong Kong is close to those who have never visited Hong

Table 8.2 How familiar are you with the social, political and economic systems and situations in Hong Kong or Shenzhen by frequency of visiting?

Frequency of visiting	*Choice*						
	Very unfamiliar	*Not familiar*	*Average*	*Familiar*	*Very familiar*	*Do no know/not sure*	*Number of respondents*
Hong Kong respondents on Shenzhen (%)							
Never	37.9%	37.9%	17.2%	6.9%	0.0%	0.0%	29
Not frequent	21.2%	42.4%	31.4%	3.0%	1.1%	0.8%	363
Frequent	12.9%	22.4%	45.7%	15.5%	3.4%	0.0%	116
Total	20.3%	37.6%	33.9%	6.1%	1.6%	0.6%	508
Shenzhen respondents on Hong Kong (%)							
Never	12.9%	60.8%	13.9%	9.3%	0.0%	3.1%	194
Not frequent	4.4%	49.6%	30.1%	12.8%	1.3%	1.8%	226
Frequent	5.3%	31.6%	26.3%	28.9%	7.9%	0.0%	38
Do no know/ not sure	11.4%	54.5%	22.7%	6.8%	0.0%	4.5%	44
Total	8.4%	53.0%	22.9%	12.2%	1.2%	2.4%	502

Data source: Author survey

Note: There is a significant difference in familiarity by frequency of visiting. Significance level 0.05.

Kong. They may have never visited Hong Kong or have only visited Hong Kong occasionally.

Although Hong Kong residents travel more to Shenzhen, they are less familiar with the other city than Shenzhen residents. There are two possible explanations. First, Shenzhen residents may have great interest in Hong Kong. They can get experience and learn about Hong Kong during shopping and sightseeing in Hong Kong. Second, information flow is asymmetrical. Hong Kong TV channels are broadcasted and watched widely in Shenzhen. Shenzhen residents receive rich information from Hong Kong. But only satellite TV channel from Shenzhen is broadcasted in Hong Kong, and few Hong Kong residents watch its programs. Hong Kong residents are well served by Hong Kong–based, media which covers news and developments in mainland China. Shenzhen is not the main focus of such media coverage. It is also noted that these data are based on self-evaluation. Residents' perceived familiarity may not reflect the actual knowledge of a city exactly.

Nevertheless, with the rising Chinese economy and close economic integration between Hong Kong and Shenzhen, residents in both cities are very positive about the governments' proposed project to develop a well-integrated Hong Kong–Shenzhen metropolis (Table 8.3). Over 69.8% and 88.4% of the Hong Kong and

Table 8.3 Do you support the construction of Hong Kong–Shenzhen metropolis (by perceived impact on own city)?

Choice	*Do not support strongly*	*Do not support*	*Support*	*Support strongly*	*Have not heard about "Hong Kong–Shenzhen metropolis"*	*Do not know/ not sure*	*Number of respondents*	*Share (%)*
Hong Kong respondents (%)								
Negative impact	2.8%	35.2%	50.9%	1.9%	5.6%	3.7%	108	21.2%
No impact	0.0%	6.5%	79.3%	4.3%	5.4%	4.3%	92	18.0%
Positive impact	0.9%	8.5%	66.4%	7.7%	9.8%	6.8%	235	46.1%
Do not know/ not sure	4.0%	8.0%	61.3%	2.7%	12.0%	12.0%	75	14.7%
Total	1.6%	13.7%	64.7%	5.1%	8.4%	6.5%	510	100.0%
Shenzhen respondents (%)								
Negative impact	6.3%	18.8%	31.3%	12.5%	12.5%	18.8%	16	3.2%
No impact	2.2%	2.2%	60.0%	31.1%	0.0%	4.4%	45	8.9%
Positive impact	5.2%	0.6%	56.2%	36.5%	0.3%	1.2%	329	65.4%
Do not know/ not sure	2.7%	8.8%	68.1%	13.3%	0.9%	6.2%	113	22.5%
Total	4.4%	3.2%	58.4%	30.0%	0.8%	3.2%	503	100.0%

Data source: Author survey

Note: There is a significant difference in the degree of support by the perceived impacts on own city by Hong Kong and Shenzhen residents. Significance level 0.05.

Shenzhen samples support/strongly support the project, respectively. Shenzhen residents are even more enthusiastic than Hong Kong residents in the sample: 30.0% strongly support the project and only 7.6% do not support the project, respectively. The traveling behavior has significant effect on Shenzhen residents' support of the project. Frequent visitors to Hong Kong support the project more strongly.

This can be compared with residents' perception of the impact of Hong Kong–Shenzhen integration on Hong Kong and Shenzhen. Some 61.8% and 65.4% of the Shenzhen sample believe that Hong Kong–Shenzhen integration will have a positive impact on Hong Kong and Shenzhen, respectively, and Shenzhen will

receive more positive impact than Hong Kong. Cross-tabulation analysis shows that the traveling behavior has a significant effect on the perceived impact on Hong Kong and Shenzhen per Shenzhen residents. Frequent visitors from Shenzhen are less likely to believe that Hong Kong–Shenzhen integration will have a negative impact on Shenzhen and a positive impact on Hong Kong. The perception of the Hong Kong sample is not so positive. Although 46.1% of the Hong Kong sample believe that Hong Kong–Shenzhen integration will have a positive impact on Hong Kong, 21.2% and 18.0% of them believe that Hong Kong–Shenzhen integration will have a negative impact or no impact on Hong Kong, respectively (Table 8.3). The traveling behavior has no significant effect on Hong Kong residents' support of the project and their perceived impact on Hong Kong.

There are more residents who support the construction of Hong Kong–Shenzhen metropolis than residents who perceive a positive impact of Hong Kong–Shenzhen integration. Among residents who believe that the project has a negative impact, 52.8% of 108 Hong Kong residents and 7 out of 16 Shenzhen residents still support or strongly support the project (Table 8.3).

Clearly, Hong Kong society is divided regarding the interest in close cooperation and integration with Shenzhen. Many Hong Kong residents do not support close integration of Hong Kong and Shenzhen. This is also revealed in their views on allowing Shenzhen residents to travel to Hong Kong more easily (Table 8.4). Over 50% of the Hong Kong sample support or strongly support allowing Shenzhen residents to come to Hong Kong for studying, sightseeing or doing business more easily. A similar share of the Hong Kong sample supports or strongly

Table 8.4 Views of Hong Kong residents on allowing Shenzhen residents coming to Hong Kong more easily by frequency of visiting

Frequency of visiting Shenzhen	*Choice*					
	Strongly disagree	*Disagree*	*agree*	*Strongly agree*	*Don't know/ not sure*	*Number of respondents*
Allowing Shenzhen residents coming to Hong Kong for studying, sightseeing or doing business more easily* (%)						
Never	6.9%	27.6%	58.6%	6.9%	0.0%	29
Not frequent	10.2%	36.9%	44.9%	2.8%	5.2%	363
Frequent	6.1%	22.8%	57.0%	4.4%	9.6%	114
Total	9.1%	33.2%	48.4%	3.4%	5.9%	506
Allowing Shenzhen residents with university degree coming to work in Hong Kong (%)						
Never	6.9%	37.9%	51.7%	3.4%	0.0%	29
Not frequent	8.0%	33.3%	47.4%	2.5%	8.8%	363
Frequent	4.3%	27.6%	54.3%	4.3%	9.5%	116
Total	7.1%	32.3%	49.2%	3.0%	8.5%	508

Data source: Author survey

Note: * There is significant difference by frequency of visiting. Significance level 0.05.

supports making it easier for Shenzhen residents with university degrees to work in Hong Kong. But over 39% of the Hong Kong sample does not support such measures. The traveling behavior has no significant effect on Hong Kong residents' views on allowing Shenzhen residents with university degrees to more easily come to work in Hong Kong. But it has a significant effect on Hong Kong residents' views on allowing Shenzhen residents to travel to Hong Kong more easily. Frequent visitors to Shenzhen in the sample are less likely to oppose allowing Shenzhen residents to travel to Hong Kong more easily. But even among these Hong Kong residents, 28.9% oppose the aforementioned measure. Clearly, many Hong Kong residents do not want to open the city to Shenzhen residents freely.

It is well understood in Hong Kong and Shenzhen societies that two cities have many differences that may make it difficult to achieve full integration (Shen 2011). This is also the reason why OCTS has been adopted in Hong Kong and Shenzhen/mainland China. According to our surveys, as many as 46.4% and 40.7% of the Hong Kong and Shenzhen samples consider that their different value systems are a main barrier to the construction of a Hong Kong–Shenzhen metropolis. Some 37.5% and 42.7% of the Hong Kong and Shenzhen samples also consider that the different political systems in two cities are a main barrier. Hong Kong residents tend to emphasize the differences in value systems and political systems as main barriers for integration.

Shenzhen residents in the sample tend to emphasize the differences in economic systems as the top barrier (47.2%), followed by differences in political systems and value systems. They also think that different historical and cultural backgrounds and different development levels are important barriers for integration. The data in this section reveal the impact of fundamental gaps in the value systems, political and economic systems on Hong Kong–Shenzhen integration. They are likely to affect social and institutional integration.

Conclusion

This chapter demonstrated close economic integration between Hong Kong and Shenzhen. Limited progress in the institutional integration took place after 2001. But the integration of cross-border communities has lagged well behind economic and institutional integrations. Brunet-Jailly's (2005) main hypothesis of the theory of borderland studies is only partially valid in the Hong Kong–Shenzhen region. To some extent, the institutional integration is necessitated by economic integration and, in turn, aims to facilitate economic integration. But close economic integration and limited institutional integration have not resulted in close social integration in the case of the Hong Kong–Shenzhen region.

Hong Kong and Shenzhen have many differences that may make it difficult to achieve full integration. Many Hong Kong and Shenzhen residents consider that the different value and political systems in two cities the main barriers of Hong Kong–Shenzhen integration. These profound gaps exist under the political and cultural context of OCTS and Chinese culture. They affect social and institutional integration. Considering a twin city as a city of strong emotional

and mental "togetherness," it can be concluded that Hong Kong–Shenzhen has not become a twin city yet (Buursink 1996; Ehlers and Buursink 2000). Hong Kong and Shenzhen, the PRD in general, is often considered an advanced case of cross-border regional integration facilitated by political history, kinship and business ties (Grundy-Warr et al. 1999: 309). A smoother and deeper integration than other cross-border regions is often expected. This chapter demonstrates that this is not the case, especially in terms of institutional integration and social integration (Sparrow 2001; Aguiar 2012).

The OCTS adopted in Hong Kong and Shenzhen/mainland China, to some extent, is to maintain the social and political differences across the Hong Kong–Shenzhen boundary. So far, social integration toward a cross-border community has not been a main objective of inter-city cooperation. It is noted that the notion of a Hong Kong–Shenzhen Metropolis is not equal to the utopian vision of a twin city or a quasi-bi-national city with a common identity as defined by scholars (Ehlers and Buursink 2000; Buursink 1996). There is no agenda to abolish the boundary or to merge two urban governments completely.

Note

1 This chapter is reprinted from Shen, J. 2014. Not quite a twin city: Cross-boundary integration in Hong Kong and Shenzhen. *Habitat International*, 42: 138–146, Copyright (2014), with permission from Elsevier.

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9 Conclusion

Introduction

There has been extraordinary urbanization, development and transformation in China since the 1970s. The previous chapters have introduced the theoretical mechanisms and models of Chinese urbanization and analyzed the courses of urbanization and development since the late 1970s at the provincial and city scales in China. Using urbanization, development and governance as key links, the critical issues for understanding the rapid urbanization in China have been studied systematically: the role of state and scale in urbanization, the new process of dual-track urbanization, the changing regional urban systems, sustainable urban development and the regional development, integration and governance in the Hong Kong–PRD region. The theoretical perspectives of the scale theory of social-spatial transformation, dual-track urbanization, TSEs and theory of borderland studies are applied to the Chinese cases. Under these theoretical perspectives, the previous chapters have demonstrated how the urbanization process and urban and regional developments unfold in China with detailed empirical evidences and data analyses. This concluding chapter will revisit the key empirical findings and theoretical insights. Prospectus of urbanization, regional development and governance in China will be discussed in the final section.

Scale, state and dual-track urbanization

The rapid urbanization process coupled with strong government planning, regulation and policy intervention in post-reform China have attracted the attention of many scholars. Scholars are divided about the uniqueness of the Chinese urbanization process and if the Western theories can be applied to the Chinese case. For example, some scholars argued that the urbanization process in China is unique in the pre-reform period of state socialism and the reform period of market transition (French and Hamilton 1979; Ma 2002; Chan and Zhao 2002). Friedmann (2006: 440) argued, "China's urbanization, although entwined with globalization processes, is to be understood chiefly as an endogenous process leading to a specifically Chinese form of modernity." Other scholars believed that Chinese cities and Western cities share similarities in the broad urbanization process, and the

concepts and theories of urban change developed in the Western context, such as "rent gap theory," "urban regime theory" and "urban growth machine," are also relevant to Chinese cities (Wu et al. 2007; Zhu 1999; Zhang 2002).

Urban development and urbanization are general processes, and many existing Western theories have been developed to explain them, often in the context of developed countries. The basic principles can be or have the potential to be applied to other countries, including China. However, some countries have specific political and economic contexts that have two implications. First, some theories developed in such context may have less applicability to China. "Urban regime theory" developed in the American context is one example. Second, when applying some theories to the Chinese context, great attention needs to be paid to unique factors and endogenous processes that affect urban development and urbanization on top of the general urbanization process. Thus there is great potential to conduct original urban China research by either applying the existing Western theories with new or revised interpretations in the context of China or developing new theories or models of urbanization regarding the unique process in China. Such original academic research builds on exiting theories, and thus is not meant to replace the existing theories.

Chapters 2 and 3 made attempts to apply the scale theory to the Chinese context and used the dual-track urbanization model to explain the urbanization process in post-reform China. The scale theory is developed mainly in the context of Western capitalist societies to describe the scalar organization of capitalism. As a general sociospatial theory, the general principle of scale theory is also relevant to transitional socialist economies where scalar configuration has also been rearticulated by liberalization and globalization. In addition to territorially bounded practices and relations, one important form of de- and re-territorialization in China is the shrinking or expansion of physical space – the urban space reorganization. The rescaling of central and local states is a politically constructed process. It does not just mean the decline of the central state and the rise of the local state. There have been intensive interactions and negotiations between local and central governments over administrative powers, revenue sharing, taxation, investment projects and loans. Under a hierarchical administrative system, the central government has substantial power in the process of changing city scale and territorialization. The local governments also participate in the process actively.

The new mode of dual-track urbanization is a consistent interpretive framework for urbanization in pre-reform and post-reform China, which shows clearly the complicated relationships between the urban or rural residential location of people with the hukou status of non-agricultural or agricultural population, their occupational attachment to non-agricultural or agricultural sectors and their entitlement to state sponsorship in terms of state benefits and social privileges.

In the pre-reform period, only state-sponsored urbanization prevailed during the period of "urbanization from above" (Ma and Fan 1994; Lei 2001). In the post-reform period, the nature of state-sponsored urbanization was transformed during the reform era and a pro-urban regime emerged. A new track of spontaneous urbanization has emerged in post-reform China. Rural urbanization and the

growth of the urban temporary population are two important streams of spontaneous urbanization. In the reform period, both tracks of urbanization are important, but the speed of spontaneous urbanization is faster than that of state-sponsored urbanization.

A new regime of active pro-urbanization has emerged since 1997, marked by China's tenth FYP, which was approved by the National People's Congress on 2001 March 15 (Wang 2001). It is likely that the hukou system will be radically reformed eventually and that it will only retain its function of population registration, while other administration functions for allocating state benefits may be scrapped. Nevertheless, there remains a requirement for people to have a local hukou status, and those who cannot meet such a requirement will remain defined as part of the temporary population, which is likely to continue to be an important component of spontaneous urbanization in the near future.

Urban system and sustainable urban development

Because of the urban agglomeration effect, urban systems are unbalanced and consist of large and small urban centers. Concepts of city-regions, metropolitan regions and urban clusters have been used to describe large urbanized areas. There is no standard demarcation of urban clusters. An urban cluster is often drawn by a central city that may overlap with urban clusters drawn by other central cities. This may result in problems of planning and development coordination (Luo and Shen 2008). With rapid growth of urban population and its concentration in major urban centers, urban systems have been dramatically transformed in China. Chapters 4 and 5 analyzed the urban system in the Guangdong province and sustainable urbanization in Shenzhen city as a result of uneven development under the socialist market economy. The study attempts to demonstrate how the new urbanization process is forming a new urban system. Considering the substantial discrepancy among the rank-size distribution of cities in terms of population and economic indicators, especially owing to the existence of a "temporary population" and the policy of "designating a whole county as a city," the urban system in Guangdong province was analyzed using demographic and economic indicators with reference to rank-size distribution of cities.

The primacy of Guangzhou in Guangdong varied by population and economic indicators. The primacy index was the largest in terms of non-agricultural population and commercial wholesale and retail value, as Guangzhou continued to be the trading center of the province, and the growth of non-agricultural population was largely controlled. The primacy index was close to two (which was the case of Zipf's rank-size rule) in terms of hukou population and total retail value. The primacy index was the smallest, just over one, in terms of total population and GDP. Considering city size in terms of total population and GDP, the urban system in the region now has twin-centers of Guangzhou and Shenzhen. This is largely due to a large temporary population and dramatic economic growth in Shenzhen. It is clear that rank-size distributions of various population and economic indicators are not the same. Thus it is useful to examine the rank-size distribution of urban

size based on various population and economic aspects, and the relative positions of top cities in the urban hierarchy.

The high level of urbanization in the PRD region is associated with its advanced economy in contrast with non-PRD region in Guangdong province. Correlation analysis of time-series data also shows significant correlation between economic variable and the size of urban built-up area and employment. Clearly, economic factor plays an important role in the recent expanding urbanization in Guangdong and in China in general. This does not exclude the role of policy and institutional factors, but any institutional reforms and policy changes must be based on sound economic foundations. Right institutions and policies will only work in regions and cities with right economic foundations.

The emergence of Shenzhen as a major urban center in South China is an outstanding case (Chen and de'Medici 2010). Rapid economic growth is fueled by the massive inflow of migrants from all over China. Previous studies often emphasized the importance of foreign investment in Shenzhen and PRD in general. The study found that both domestic and foreign investments have significant contributions to the rapid economic growth in the city, similar to previous study on PRD (Shen et al. 2001).

With rapid population growth and the expansion of the city, a city will face various social and environmental problems such as the provision of housing and urban infrastructure, the problems of increasing crime rates and environmental pollution. Shenzhen provides a good case to address these issues. Generally, Shenzhen's performance is better than many other major cities in China in terms of environmental protection.

Shenzhen's case indicates that it is possible to move toward balanced development in social, economic and environmental dimensions, even for new large cities such as Shenzhen. Other old and large cities may face even more environmental problems because of inertia in economic structure and the historical legacy of poor urban infrastructure. With further industrialization, rising living standards and expectations for high quality of life, Chinese cities need to invest more to reduce environmental pollution and carbon emissions. The recent move to smart cities may help to build more efficient, environmental friendly and sustainable cities (Batty 2013).

Regional development, integration and governance

Urban performance depends on both urban competitiveness (internal factors) and the external environment (external factors). Different external environments present different development opportunities for various cities and thus affect their urban performance differently. Hong Kong's case shows how its hinterland, the PRD region and mainland China in general have provided favorable investment and trade opportunities for Hong Kong and stimulated its economic transformation from an industrial city to a major world city since the 1980s. While Hong Kong benefited from a favorable position in the division of labor in the Hong Kong–PRD regional production system before the change in sovereignty in 1997

(Shen 2003), such an advantage is being challenged by the rise and upgrading of the economic structure of Guangdong and the neighboring cities in the hinterland after 2001. Hong Kong is facing increasing competitive pressure in the post-handover period because of the narrowing gap between Hong Kong and the mainland in economic terms.

Compared with other cities in mainland China, Hong Kong's competitiveness builds on a sound legal and institutional framework, a free market system, sophisticated business community, diligent and relatively well-educated labor force, efficient and clean government, good infrastructure and dense international networks. The overall trend suggests that Hong Kong will continue as a leading world city in Asia and China. But Hong Kong will no longer be the only city to dominate the economy of China. It will have to compete aggressively while also cooperating closely with other major Chinese and Asian cities to remain dynamic and prosperous.

Accelerating globalization worldwide has resulted in the restructuring of the political, economic, social and culture orders in the world. Such global restructuring often involves dense and complicated governance processes at the international, national, regional and local levels. The Hong Kong–PRD region has experienced rapid globalization and regional integration in recent decades. This has involved the PRD region on the mainland that has implemented a reform and open door policy since 1978 and, more importantly, Hong Kong that has been a well-known free port for many years.

The framework of TSEs is adopted for a study of cross-border governance in Hong Kong, especially the role of the state. The author argues that a tension-free model of regional integration has never existed in southern China because of complexities of the governance network and the interaction between geoeconomic and geopolitical TSEs. The shift from cross-border protectionism to a cross-border free trade zone in Hong Kong's cross-border urban governance since 2001 was a result of the rearticulation of the state cutting through the geoeconomic and geopolitical TSEs.

The divergent interests and visions of a cross-border relationship between Hong Kong and the PRD region have been the focus of debate both before and after 1997. The return of Hong Kong to China in 1997 was expected to be a catalyst for developing close economic relationships between the two, especially at the governmental level. The nationalist TSE and the pro-economic-integration TSE were expected to reinforce each other. Close economic cooperation between Hong Kong and the PRD region was high on the agenda of the first chief executive of the HKSAR. Nevertheless, there was little progress in cross-border cooperation in the period of 1997–2000. Indeed, July 1997 marked the beginning of a period of cross-border protectionism because of the emergence of the politically distancing TSE in post-handover Hong Kong and the potentially negative economic impact of cross-border development on Hong Kong.

Hong Kong's economy entered another round of stagnancy after the 9/11 event in New York in 2001. In the meantime, the economy on the mainland continued to grow despite a worldwide economic slowdown. After China's entry into the

WTO in 2001, the argument that Hong Kong would suffer from closer economic-integration has been outweighed by the argument that closer economic integration will benefit Hong Kong. Thus the HKSAR government moved toward a close economic relation with the PRD.

It is clear that the HKSAR government plays an indispensable role in mediating the cross-border integration between Hong Kong and the PRD according to its own political and economic considerations. This is in stark contrast with the notion of the laissez-faire policy of Hong Kong. The case of cross-border governance of Hong Kong vividly shows the role of the state as a gatekeeper in the globalizing process, even for the freest economy in the world.

Hong Kong and Shenzhen, the PRD in general, is often considered an advanced case of cross-border regional integration facilitated by political history, kinship and business ties (Grundy-Warr et al. 1999: 309). A smoother and deeper integration than other cross-border regions is often expected. But this is not the case, especially in terms of institutional integration and social integration. Close economic integration between Hong Kong and Shenzhen has been emerging. Limited progress in the institutional integration took place after 2001. But the integration of cross-border communities has lagged well behind economic and institutional integrations.

Many Hong Kong and Shenzhen residents consider the different value and political systems in the two cities the main barriers of Hong Kong–Shenzhen integration. These profound gaps exist under the political and cultural context of OCTS and Chinese culture. They affect social and institutional integration. The OCTS adopted in Hong Kong and Shenzhen/mainland China, to some extent, is to maintain the social and political differences across the Hong Kong–Shenzhen boundary. There is no agenda to abolish the boundary, and it is in the best interest of both Hong Kong and mainland China to continue OCTS beyond 2047.

Prospectus of urbanization, regional development and governance in China

According to recent population censuses (NBS 2011: 96), the urban population in China more than tripled in the period of 1982–2010, increasing from 210.82 million in 1982 to 458.44 million in 2000 and 665.57 million in 2010. The level of urbanization reached 56.1% in 2015 (NBS 2016). It is expected that the urban population in China will further increase to 1,030 million in 2035 and the peak of 1,051 million in 2047, according to the projection of Population Division, Department of Economic and Social Affairs, United Nations (2014). The level of urbanization will reach 71.1% in 2035 and 75.8% in 2050.

Different from other countries, the population in a Chinese city does not just consist of local residents and migrants because of a unique hukou (household registration) system. It actually consists of three parts: the local population (people with local hukou), permanent migrants (with local hukou) and temporary migrants (without local hukou) (Shen 2005). The temporary migrants contribute to the bulk of the increased urban population and usual residents in Chinese cities based on

the census definition in the reform period. The current urbanization of China is incomplete and not inclusive. To achieve a complete and high level of urbanization in China, attention should be paid to three important aspects: the usual rural to urban migration, the integration or inclusion of the floating population in the existing urban areas and the urban-rural integration in the urban periphery. A systematic and sustainable approach is needed for efficient and sustainable urbanization with an efficient urban system and high livability.

Given the large urban population and high population density in China, a number of mega-city regions and mega-cities will emerge in China. According to the projection of Population Division, Department of Economic and Social Affairs, United Nations (2014), there will be 41 mega-cities in the world by 2030, each with a population of ten million or more. Seven of them will be in China, including Shanghai, Beijing, Guangzhou, Chongqing, Tianjin, Shenzhen and Chengdu. These mega-cities will play a pivotal role in the further development of the urban system and economy in China. The policy makers and planners need to address the following key issues: the functional division of these mega-cities with medium and small cities; the efficient regional inter-city and intra-city transport systems, especially railway services for passengers; the sustainability and livability for residents; dynamic education, research and innovation systems; regional governance and coordination to manage inequality; and the resource and environmental protection.

In the Hong Kong–PRD region, there are a number of developments that will stimulate urban and regional development in the region. Guangdong-Hong Kong-Macauo Greater Bay Area development was promulgated by Premier Li Keqiang in March 2017 in the government report for the 12th National People's Congress, and thus this Greater Bay Area development has become a national strategy. Good progress has been made on this initiative. The Framework Agreement on Deepening Guangdong-Hong Kong-Macao Cooperation in the Development of the Bay Area was signed on 1 July 2017, and the Development Plan for City Clusters in the Guangdong-Hong Kong-Macao Bay Area will be released in 2018. Various suggestions have been made by academics, business sectors and other organizations in Hong Kong on this joint planning exercise.

In the meantime, a number of major infrastructure projects are underway, and some will be completed for operation very soon. Hong Kong International Airport was completed for operation in 1998. It was ranked the busiest airport in terms of handing air cargo, 4.38 million tons, and number eight in terms of passenger throughput, 68.1 million, in 2015. The airport will reach its full capacity in 2020. After keen debate in Hong Kong, the third runway project started in August 2017, with an estimated cost of HK$141.5 billion. The funding sources include a 49% bank loan or bond, 33% airport dividend and 18% airport tax (AAHK 2017). The completion of the project will support the development of various economic sectors in Hong Kong.

High-speed railway in the Hong Kong–Shenzhen section is another major cross-boundary project. It is 26km to link Hong Kong with the high-speed railway network over 20,000 km, which will be expanded to 38,000 km in China by

2025. The HKSAR government approved the project in 2009, and the funding was approved by the Legislative Council on 8 January 2010. It has been very controversial in Hong Kong. The main objections include the land assumption and the relocation of Choi Yuen Village in the early years, expensive cost (over HK$80 billion) and the co-location boundary checkpoints of mainland China and Hong Kong in the Western Kowloon station.

The current objection to the arrangement of co-location boundary checkpoints is centered on two concerns. First, this arrangement violates the Basic Law, which states that mainland laws cannot be implemented in Hong Kong, except for those listed under Appendix 3. Second, when mainland officials work in the Western Kowloon station, they may arrest Hong Kong residents illegally. These concerns are overstated, as the co-location boundary checkpoint of mainland China only uses a very limited space in the station for the purpose of boundary controls to facilitate passengers. There is not much ground to assume that mainland officials will arrest Hong Kong residents in the station beyond a normal boundary checkpoint control such as Lowu or Futian. The alternative option to replace the co-location boundary checkpoints will significantly affect the efficiency of the cross-boundary travel, as passengers have to get off the high-speed train to go through the mainland boundary control procedures in Shenzhen. A passenger may use at least one additional hour to complete the procedure and get on another train, whereas one hour may allow the passenger to travel 250–300km if the co-location boundary checkpoints are adopted.

The HKSAR government signed an agreement with Guangdong government on the cooperation of co-location boundary checkpoints, which was approved by the Standing Committee of National People's Congress in December 2017. Local legislation will proceed for approval from the Legislative Council of HKSAR in 2018. The Hong Kong–Shenzhen high-speed railway section will start operation in the third quarter of 2018. It will provide three important functions (Shen 2017). First, it will provide frequent direct services between Hong Kong and Shenzhen in 19 minutes, linking central business districts of the two cities. It will also relieve the congestion of the East Rail line service from Hong Kong to Lowu and Lok Ma Chau (316,000 passengers a day in 2015). Second, it will provide frequent services between Hong Kong and other cities in the PRD, including Guangzhou, the provincial capital of Guangdong. Third, it will provide regional high-speed railway service to some major cities such as Beijing and Shanghai, and many other cities by transit in mainland stations such as the Shenzhen North station. High-speed railway is more competitive than air services within the distance of 1,000–1,200km. The Western Kowloon high-speed railway station can play the role of regional airport, and its passenger throughput is expected to be close to that of Zhuhai Airport and much greater than that of Macao Airport. The co-location boundary checkpoints of mainland China and Hong Kong in the Western Kowloon station will become an important case of regional governance and inter-city cooperation in the region.

Hong Kong, Zhuhai and Macao Bridge (HZMB) is a cross-boundary project linking Hong Kong with Zhuhai and Macao in the western PRD. Again, this

project has been controversial between Hong Kong and other cities in PRD, and within Hong Kong. For example, there was a suggestion from Shenzhen that the bridge could also land in Shenzhen, making it a double Y bridge. This suggestion was not favored by Hong Kong and was not adopted. Another controversy is the effect that the HZMB projects would have on the air quality and health of residents' in the surrounding environment. One resident applied for a judicial review on the EIA (Environmental impact assessment) report, which was not successful. Another controversy is the high cost of the construction of the project. After some delay, the construction of the bridge started in 2012, and it will be open to traffic in 2018. The bridge will significantly reduce the traffic time from Hong Kong to western PRD and will have profound impact on the development of western PRD in the long term. One important issue of regional governance and inter-city cooperation is which and how vehicles from the region can get licenses to use the new bridge to facilitate the cross-boundary flows and also to make use of the bridge efficiently.

Two important trends will affect future urbanization and regional development in China. The first is sustainable development, including social, economic and environmental sustainability, which need the efforts of all citizens, social organizations, enterprises and governments to work together to achieve economic development, social equity, environmental conservation and quality and healthy living. The second is the smart cities with the wide use of information technology, artificial intelligence, big data analytics and Internet of Things (Batty 2013). New urban systems and new urban forms are emerging with new (sharing) economies. At the time of this writing, it seems that human society and cities are entering a new era of greater transformation with rapid technology innovation and much uncertainty.

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