

SECTION III

*Northeast Asia:
China and the
Republic of Korea*

13

chapter

Reshaping economic geography in China

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Much has been made of China's impressive growth as well as its distributional and environmental consequences. But with 1.3 billion people spread unevenly across 31 ecologically diverse provinces and municipalities, China is perhaps the best example of how a country has reshaped its economic geography to reverse half a century of economic decline. This chapter provides an overview by drawing on chapters in this volume that deal in depth with particular aspects and on other related studies.

China's historic and geographic legacy

China's geography has been fundamental in shaping 5,000 years of social and economic history and has been a defining factor in influencing China's pattern of population settlement (see figure 13.1). Although by global standards its land mass is large, the population is concentrated in the more fertile central plains and valleys of the Yangtze and Yellow rivers and along the urbanized coastal areas. The western region, comprising 12 provinces with large tracts of uninhabitable mountainous terrain and deserts, is isolated, sparsely populated, and thus less suited to commercial activities. The central region, with 8 provinces, has large concentrations of population along major river basins and accounts for a substantial portion of agricultural production. Finally, the coastal region, with 11 provinces, has traditionally been China's industrial and commercial heartland and is historically linked to the outside world through trade and labor migration.

Geographic factors determined that regional development in China would be uneven long before the post-1980s reform era. The potential for disparities to emerge, however, was less visible because of the low level of development after the postwar period of central planning (1950–80). To encourage more balanced growth, investment was directed to inland provinces and the northeast, rather than based on regional comparative advantages. China's unique *hukou* residency restrictions also limited the potential for both rural to urban and interprovincial migration and prevented cities from getting too large. As elaborated by Yao in chapter 14, these location-specific industrial policies took place in the midst of altering periods of economic and fiscal centralization and decentralization. These shifts were motivated by the adverse consequences of the Great Leap Forward and the Cultural Revolution, which pushed senior policy makers either to tighten or to liberalize their grip on the local authorities.

By 1980, three decades after liberation, China was still a desperately poor agrarian economy, although by international standards it was an exceptionally egalitarian society. With these facts in mind, Deng Xiaoping launched a series of reforms that, in opening the country to the outside world, foreshadowed the basic tenets underpinning the new economic geography and trade theories that were only just becoming prominent in the literature. During the ensuing reform era, preferential policies were sequenced to work with rather than against differences

Figure 13.1 Regions and open cities in China



in natural endowments and comparative advantages; in the process, they fundamentally reshaped China's economic geography.

The story of China during the past quarter century revolves around a series of pragmatic and at times trial-and-error reforms that made use of the country's natural advantages, unleashing the pent-up energies of the nation. These policies had three distinct consequences: (1) they reshaped the spatial dimensions of development both in terms of regional concentration and the dynamism of urban and rural areas; (2) they broke the gridlock in the mobility of factors and goods both internally across provinces and between urban and rural areas and externally between China and the rest of the world; but (3) they also set in motion forces that increased disparities across regions and provinces and between as well as within urban and rural areas. In the process, China emerged as an exceptionally competitive, growth-oriented economy,

having dealt successfully with the three "Ds": realizing the benefits of agglomeration economies through a higher *density* of economic activities in its major urban centers, overcoming the *distance* factor by making a concerted effort to improve regional transportation and communications infrastructure, and eliminating internal and external *divisions* to promote national market integration and China's participation in the global economy.

This chapter begins by presenting a synopsis of how the government's reform policies managed to reorient growth dynamics to tap China's comparative advantages as influenced by its economic geography. It then explores more deeply several of the key spatial and policy factors that have shaped these growth and distributional trends: agglomeration benefits, fiscal policies, investment in transport services, and the migration cum urbanization process, before assessing the distribution and equity

implications. Finally, this chapter explores the implications of these issues for future policies and trends in inequality.

Accelerating growth: coordinating structural, incentive, and fiscal policies

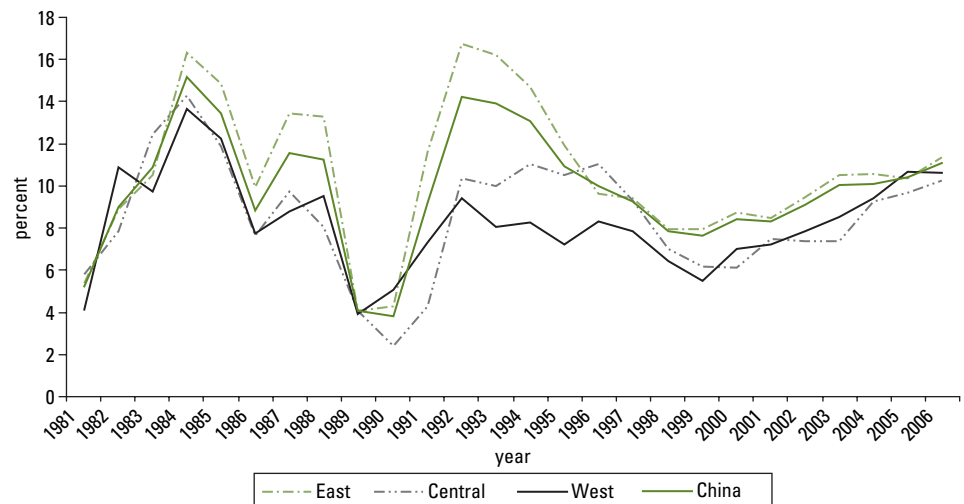
With the advent of economic reforms in the late 1970s, the past quarter century has seen a period of unprecedented growth, coupled with equally sharp increases in income and regional disparities. Gross domestic product (GDP) growth averaged nearly 10 percent a year, lifting half a billion people out of poverty. The record of rapid growth and increasing inequality, however, was marked by periods of considerable variation (see figure 13.2). The major factors underpinning this growth have been well analyzed. Growth increased sharply in the first half of the 1980s as households became part of the agrarian economy, along with communes and state farms, as a result of the new “household responsibility system.” By simply de-collectivizing production and allowing farmers to sell their surplus on the market, rural per capita incomes tripled during the 1978–84 period, contributing to a surge in the GDP growth rate to more than 15 percent by the mid-1980s. By the second half of the 1980s, the momentum from these reforms had petered out, while

the full benefits from the emergence of rural-based “township-and-village enterprises” and the restructuring of state-owned enterprises in urban areas were still to be felt. Nevertheless, these enterprise-related reforms spurred the movement from farm-based to off-farm labor activities and sowed the seeds of rapid urbanization.

This urbanization process was integral to the process of industrial agglomeration in China and influenced by the uniqueness of the transition from a planned to a market economy. The transition was supported initially by an agenda of dual-track reform—an “open-door policy” that strengthened the investment climate along the coastal provinces before going national and waves of fiscal decentralization and recentralization that initially favored more experimentation among certain coastal provinces but is now trying to deal with the disparities and expenditure needs of a highly decentralized intergovernmental fiscal system.

As discussed by Chen and Lu in chapter 15, the open-door policy began with the establishment of the first special economic zones (SEZs) in 1980 in four cities in Guangdong and Fujian provinces (figure 13.1). This initiated a process that generated urban-based agglomeration benefits but also triggered wider regional disparities. The preferential status of SEZs was soon rolled

Figure 13.2 GDP growth in China, by region, 1981–2006



Source: National Bureau of Statistics of China (various years).

out to 14 other coastal cities in 1984, to the three deltas in 1985, to Hainan in 1988, to Pudong in Shanghai in 1990, and then gradually to 11 border cities and eventually to all capitals of the inland provinces and autonomous regions during the 1990s. These SEZs were the precursor to a more broad-based improvement in China's investment climate and laid the foundations for a ratcheting up of investment rates.

In the early 1990s, Deng Xiaoping's famous southern tour gave a strong boost to the open-door policy and conferred formal status on the "gradient development model" (see Yao in chapter 14). This approach, which considered coastal, central, and western regions as three ladders of economic growth starting from the coast, gave the coastal region large benefits as the first movers of reforms. This was supported by a strategy of "big inputs, big exports," which was centered in the coastal region and sought to stimulate processing trade and attract foreign direct investment (FDI). Foreign trade and investment provided the coast not only with capital but also with advanced technology and management, which enhanced productivity. In 1990, when only coastal provinces were open to foreign investors, more than 92 percent of FDI accrued to the coast. (Despite more regionally neutral incentive policies, by 2005, the coastal region still accounted for more than 90 percent of total exports and imports and received 85 percent of a much larger volume of FDI.) With the first-nature advantages of geographic location supported by favorable second-nature policy advantages, the coastal region took off economically.

These industrial reforms were complemented by additional agrarian reforms, notably the overhaul of China's food-grain marketing system in the mid-1990s, which increased farm-gate prices and led to another surge in rural incomes. Together these reforms pushed GDP growth rates well into the double digits during the first half of the 1990s. The growing divergence between growth of coastal and inland provinces widened, however, and only in the last several years has there been some evidence of convergence (figure 13.2). (In chapter 18, Yueng and Shen provide a comprehensive discus-

sion of the emergence during this period of the three major commercial regions centered on Guangzhou, Shanghai, and Beijing.)

Although growth moderated in the late 1990s due to the Asian financial crisis, an ambitious public investment program coupled with accession to the World Trade Organization (WTO) led to the rapid expansion of exports, which has kept GDP growth above 10 percent in recent years. Further liberalization of the agrarian economy was largely connected with WTO trade-related reforms, which eliminated any remaining pricing biases against agriculture and encouraged a shift to more profitable crops in line with China's comparative advantages (Huang and others 2007). This was subsequently reinforced by a whole-scale reduction in agricultural taxes and fees that lifted agrarian incomes and moderated regional disparities in the new millennium.

Spatial factors and government policies: growth and equity implications

China's success in building a more competitive economy over the past several decades can be viewed from various perspectives, but overall its success can be interpreted as the consequence of having initiated a major agglomeration process that boosted the productivity of Chinese enterprises (supported by policies that revived agricultural productivity). As elaborated in chapter 16 by He and summarized here, in the aftermath of the open-door policies and selective fiscal incentives, the triple forces of marketization, globalization, and decentralization jointly drove the spatial transformation of the industrial sector.

In 1980 the most agglomerated industries were state owned and capital intensive, with the majority of the dispersed industries being resource based. By allowing market signals and globalization to play a more important role, economic reforms gave birth to centripetal forces that encouraged competitive industries, especially those with an export orientation, to locate along the coast. Coastal cities have not only first-nature comparative advantages in factor endowments but also second-nature advantages

as first-movers in attracting and retaining domestic and foreign resources.

Meanwhile, as decentralization of responsibilities encouraged provincial authorities to protect their local industries, inefficiencies and duplicative industrial structures also emerged. This was motivated in part by a desire to protect local revenues and jobs, but over time it undermined the achievement of productivity gains for the overall economy as a result of geographic and economic specialization. As reforms deepened, however, interactions between centripetal and centrifugal forces gradually reshaped the spatial structure of activities. Differences increased between the productivity of agglomerated competitive industries and that of dispersed resource-based, heavy industries.

Gradually, a process of rapid urbanization and specialization evolved in the coastal areas. Several factors supported this process. First, national market integration facilitated labor and capital mobility, while cross-provincial commodity exchanges encouraged industrial development in line with locational advantages. This process allowed Chinese companies to exploit economies of scale (as discussed by Chen and Lu in chapter 15 and by He in chapter 16). Second, external market integration, as part of globalization, encouraged more dynamic activities to concentrate in the coastal region, which, in turn, generated agglomeration effects. As the coastal cities became more linked to the global economy, the benefits became obvious, as exemplified by rapid employment creation, competitive pressures on enterprises to restructure, and a much improved domestic and external financial position. (Yeung and Shen describe the contrasting experiences in chapter 18.) This provided the basis for broad-based political support for WTO membership and trade liberalization more generally. The remarkable changes in the degree of openness of the economy are evident in the increase in the ratio of trade to GDP from 10 percent in 1978 to nearly 70 percent in 2006. Much of the trade liberalization took place over the past decade, as reflected in the decline in trade-weighted statutory tariffs from 40 percent in 1992 to an estimated 7 percent after WTO accession

(Bhattasali, Li, and Martin 2004). Third, as labor markets became more flexible, wages began to reflect differences in quality, and skill premiums rose sharply.

As market integration deepened, provincial industrial structures gradually became more diversified, but by the late 1990s, the agglomeration process began to take hold, with the effect of nurturing more specialization. As He discusses in chapter 16, the relationship between regional specialization and per capita GDP is U shaped. Driven by market forces, both the very poor and very rich regions are now more specialized, with the more service-oriented or higher-technology industries concentrated in the coastal urban areas. Moreover, as analyzed by Bai and Lin in chapter 17, differences in returns to capital across provinces have decreased over time although returns remain greater in the coast than in the west. This lends support to the view that the agglomeration process has not become wasteful over time; rather, market forces have been encouraging the more efficient allocation of resources.

Today, many agglomerated industries are globalized, with more diversified ownership structures, while the dispersed industries either are oriented to the domestic market or are strategic industries. Heavily protected or state-controlled industries remain relatively dispersed due to the strong local pressures to retain profits (and associated fiscal revenues) within provincial boundaries. Industries with less local protection and government intervention typically are more exposed to external competition. Eventually, as agglomeration effects have taken hold, these industries have become more regionally specialized as well as more productive.

Role of fiscal policies

These open-door policies were also supported by shifting decentralization and recentralization of fiscal policies. Although far from meeting the needs of a modern economy, these actions provided Guangdong and Fujian and then other coastal provinces with stronger revenue incentives to experiment with reforms and thereby improve their investment climate. But the system also encouraged fiscal disparities

to widen between the relatively better-off coastal provinces and the poorer inland areas. Only with the 1994 tax reforms was the fiscal system restructured to begin tackling distributional concerns.

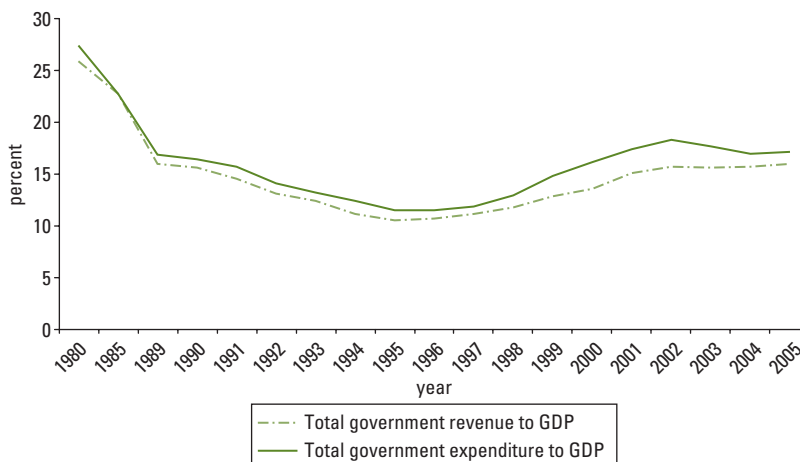
Before 1980, China's fiscal system was characterized by centralized revenue collection and fiscal transfers, which created few, if any, incentives to develop the local economy. Under this system, subnational governments were highly dependent on the central government and had limited fiscal autonomy (Ma and Norregaard 1998). From 1980 to 1993, China adopted the fiscal contracting system, which decentralized tax administration. Subnational governments, with relatively large discretionary powers to grant tax privileges, had strong incentives to retain fiscal revenues and develop their localities by imposing the lowest taxes possible on enterprises to compete with other regions. As a result, the ratio of total government revenue to GDP declined, as did central government revenues relative to total government revenues. The ratio of total government revenues to GDP declined from 26 percent in 1980 to 16 percent in 1989, and to 12 percent in 1993 (see figure 13.3). The ratio of total government expenditure to GDP declined accordingly.

The fiscal capacity of local governments closely mirrored the availability of resources. To keep resources within their control, local governments avoided sharing their revenues

with the central government. The ratio of central government revenues to total government revenues declined from 55 percent in 1980 to 31 percent in 1989 and to 22 percent in 1993. Fiscal devolution, on the one hand, contributed to rapid economic growth by effectively enhancing the incentives of local governments; on the other hand, it limited the central government's ability to use tax and expenditure policy instruments to narrow regional fiscal disparities and support the delivery of basic public services in poor localities. At this stage in China's transition from a centrally managed to a market economy, the priority was more to revive growth than to deal with distributional concerns. In the aftermath, the more advantageous revenue-sharing arrangements contributed to the rapid growth of the two provinces on the frontier of open-door policies, namely, Fujian and Guangdong. This was reinforced by incentives favoring the allocation of public investment projects to provinces with a greater financing capacity. As a result, the share of public capital expenditures going to the coastal provinces rose from about 50 percent in the mid-1980s to nearly 65 percent by the mid-1990s.

With the major tax reform of 1994, this discretion-based revenue-sharing system was replaced with a more rule-based fiscal assignment system, allowing the central authorities to reassert themselves more actively and to use fiscal policy for redistribution

Figure 13.3 Ratio of total government revenue and expenditure to GDP in China, 1980–2005



Source: National Bureau of Statistics of China (various years).

(Dollar and Hofman 2008). The reform package brought China's intergovernmental fiscal system much closer to international practice and paved the way for a turnaround in the ratio of government revenues to GDP in the second half of the 1990s (figure 13.3). To mitigate possible resistance from the provinces, the central government made certain concessions, including tax rebates in favor of the richer provinces, and only gradually changed the tax-sharing arrangements between the central and subnational governments.

Before the reforms, the share of central government expenditures was roughly in line with its share of revenues (see figure 13.4). After the reform, the share of central

government revenues to total government revenues rose sharply, more than doubling from about 22 percent in 1993 to 56 percent in 1994 and hovering around 50 percent in recent years. The share of central government expenditures to total government expenditures remained at about 30 percent.

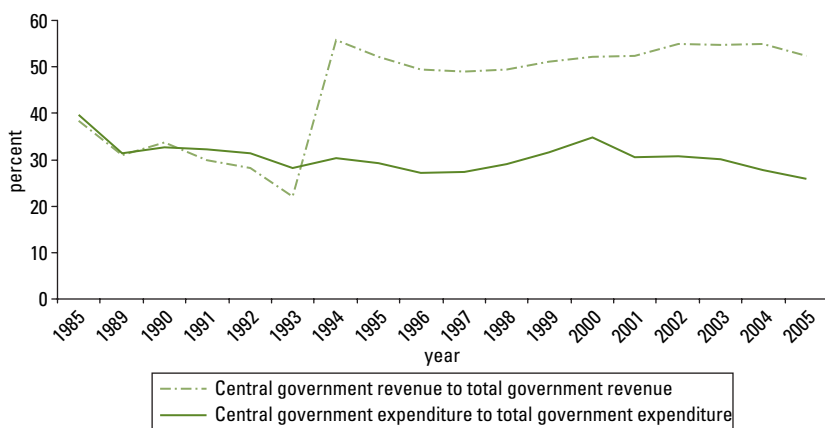
The centralization of the fiscal system strengthened the central government's capacity to redistribute in favor of poorer inland provinces. After a decade of decline under the fiscal contracting system, the share of total fixed-asset investment that went to the inland region versus the coastal region increased gradually from the mid-1990s onward (see figure 13.5).

The ratio of local government expenditures to regional GDP rose over time under the tax-sharing system, especially in the inland region in the late 1990s to early 2000s, when the "Go West" policy was implemented (see figure 13.6). By 2005, the ratio of fiscal revenues in the eastern, central, and western parts of China was 60:23:17, while the ratio of their expenditures was 46:29:25, which suggests that overall the fiscal system has had some redistributive effects (Lou 2008).

Figure 13.6 shows that total central transfers range widely across provinces in aggregate terms as well as in per capita terms, but there appears to be some preference in favor of inland provinces.¹ Generally, the larger the size of the provincial economy, the larger the central transfer; however, in per capita terms, the level of transfer is relatively greater, the poorer the province, especially if it is inland (see figure 13.7).

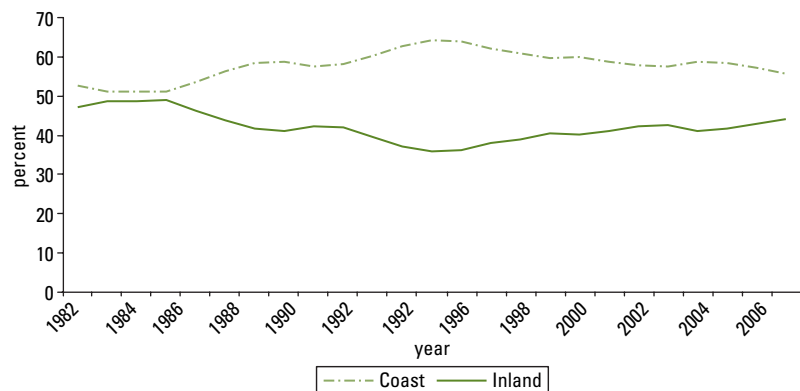
At the provincial level, a higher GDP per capita is associated with a lower ratio of central transfers to subnational government expenditures (see figure 13.8). Central transfers play a more important role in inland provinces, especially in the more remote and poorer ones, as their subnational administrative units are more dependent on intergovernmental support. In 2004 the ratio of central transfers to subnational government expenditures was, on average, about 40 percent for coastal provinces, but almost 70 percent for inland provinces. This suggests that central transfers have helped to reduce disparities in fiscal capacity across regions (see also chapter 15 by Chen and Lu).

Figure 13.4 Ratio of central government revenue and expenditure to total government revenue and expenditure in China, 1980–2005



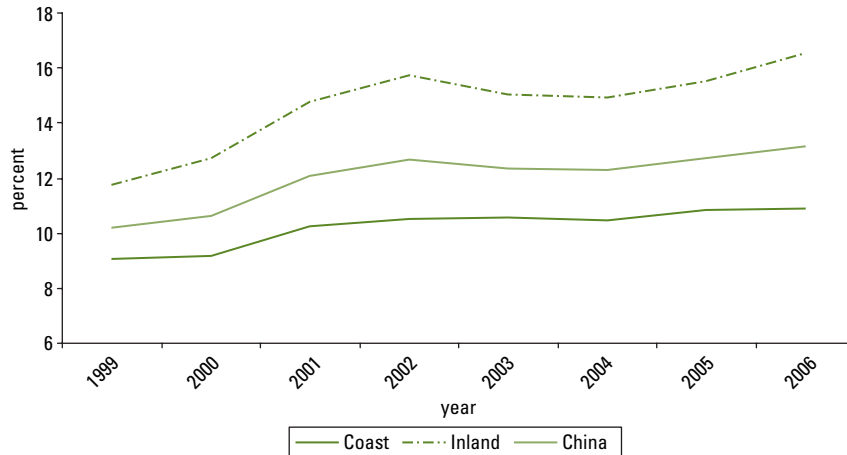
Source: National Bureau of Statistics of China (various years).

Figure 13.5 Share of total investment in fixed assets in coastal and inland areas of China, 1982–2007



Source: National Bureau of Statistics (various years).

Figure 13.6 Ratio of total provincial government expenditure to regional GDP in coastal and inland regions of China, 1999–2006



Source: National Bureau of Statistics (various years).

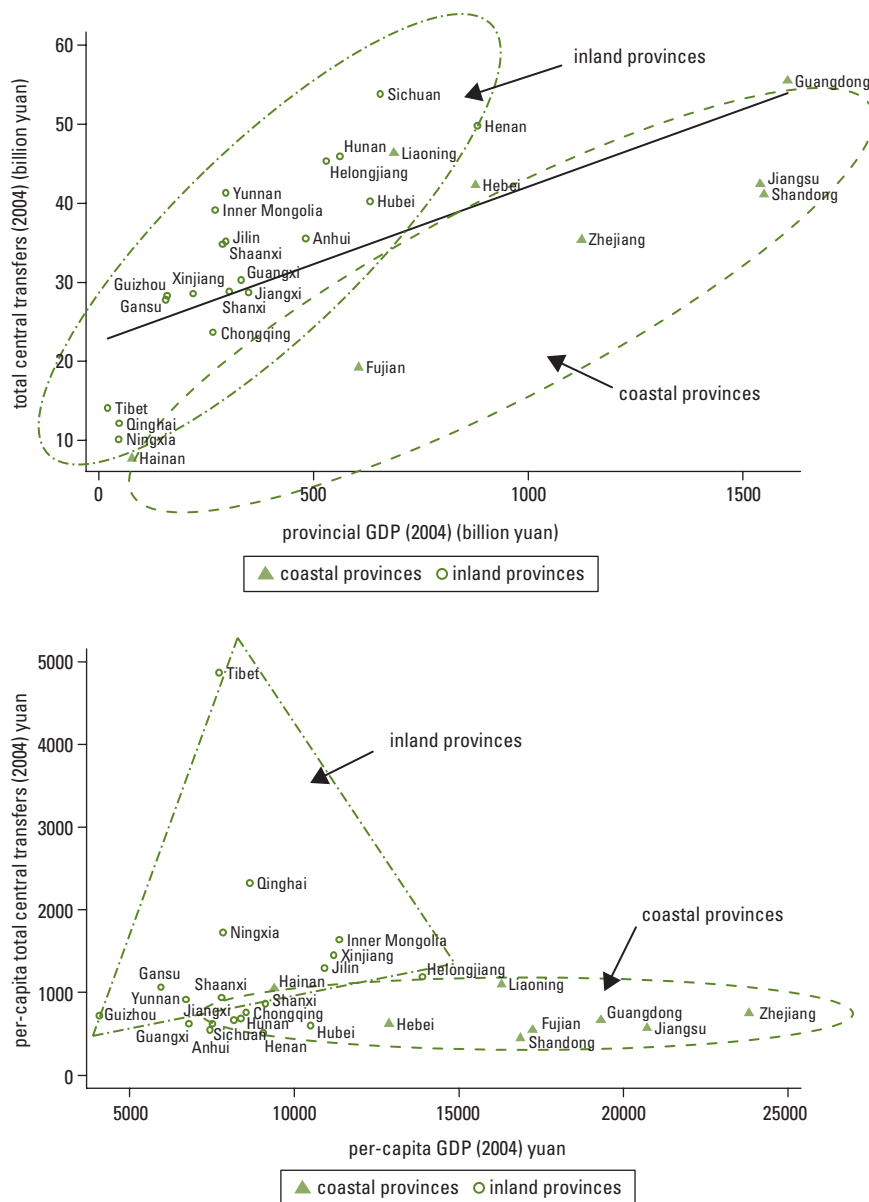
However, fiscal disparities across regions, as measured by per capita social expenditures, continue to be large. Wealthier provinces, as measured by GDP per capita, tend to have a higher level of local government expenditures per capita. This positive relationship has remained virtually unchanged over the years. In 2005 GDP per capita of the richest province, Zhejiang, was about 5.5 times that of the poorest province, Guizhou; and subnational government expenditures per capita of the former were about 1.85 times those of the latter. Disparities in public spending contribute to disparities in social outcomes across regions and between rural and urban areas.² Although the differences in subnational government expenditures on education and health care across regions have been decreasing in recent years, per capita expenditures in the coastal region are still more than 1.5 times those of inland regions (see figure 13.9). For example, in 2005 the national average per capita expenditure on public health was Y 78; major cities like Beijing spend several multiples of the average. But worth noting is that some of the poorest provinces like Tibet and Qinghai spend well above the average, largely because of the higher costs of serving a sparsely distributed population. Furthermore, budgets are set at the county level and are based largely on county government revenues. Local governments in the poorest parts of China, which face the toughest public health challenges,

spend the least on public health. In 2003 the maternal mortality rate was 73 per 10,000 live births in the poorest fifth of the population covered by China's maternal and child health surveillance system and 17 per 10,000 live births in the richest fifth (Wagstaff and Lindelow 2008).

Although revenue collections have been gradually recentralized, expenditure assignments in China continue to be exceptionally decentralized. The mismatch between expenditures and revenue assignments has led to major financing gaps, as responsibilities cascade from the center to the provinces and then down through several layers to the local level. Subnational governments have a wide array of economic responsibilities in addition to the delivery of social services, including basic health care, education, and social security schemes. Such a mismatch of risk pooling and resource redistribution leads not only to deadweight efficiency loss but also to uneven provision of public services. As fiscal transfers from the upper levels are often inadequate, local governments largely rely on their own devices to finance and deliver public services. Due to tighter fiscal constraints, many local governments, especially those in rural inland areas, which often suffer from significant resource shortfalls, have to provide more limited public services, while charging higher user fees.

In sum, although revenues have grown substantially in recent years and the fiscal

Figure 13.7 Central transfers and GDP per capita in China at the provincial level, 2004



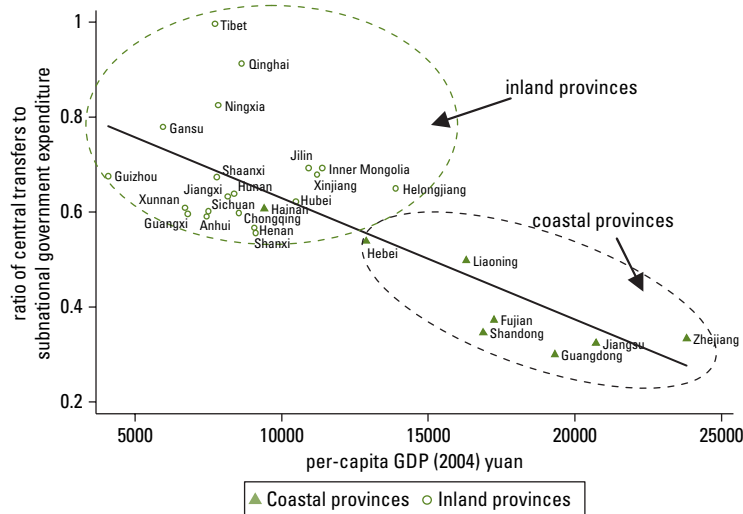
Source: Shen (2008).

system has now taken on a redistributive role, the impact on the provision of more equitable access to public services is still modest, in part because of the way expenditure assignments are pushed down to the local level without the provision of commensurate funding and in part because of the structure of revenue sharing. These consequences are more significant in the poorer inland provinces and partially explain why urban-rural disparities are greater there relative to the coastal areas.

Overcoming the distance factor: expanding transport services

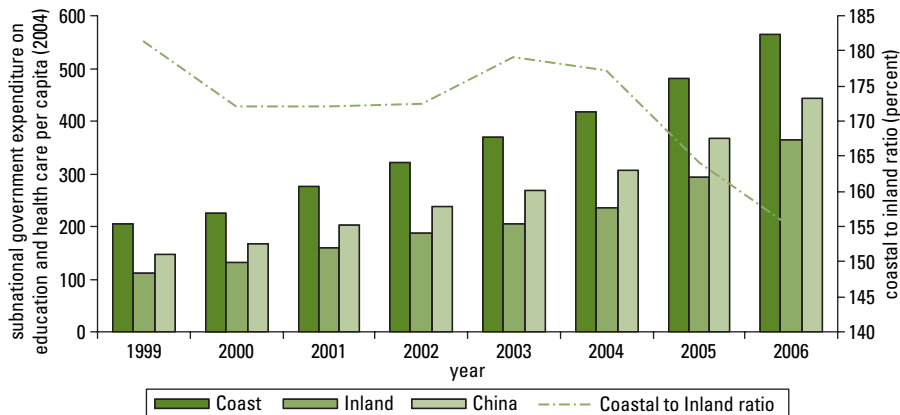
China's experience illustrates the importance of spatial factors in development. There is a significant correlation between the distance of inland provinces to the major commercial centers along the coast and the level of economic development. This is illustrated by the growth rates of per capita income, which decline with distance from the east coast. As seen in figure 13.10 (panel A),

Figure 13.8 GDP per capita and ratio of central transfers to subnational government expenditure at the provincial level 2004



Sources: National Bureau of Statistics (various years); authors' calculations.

Figure 13.9 Subnational government expenditures per capita on education and health care in coastal and inland provinces of China, 1999–2006

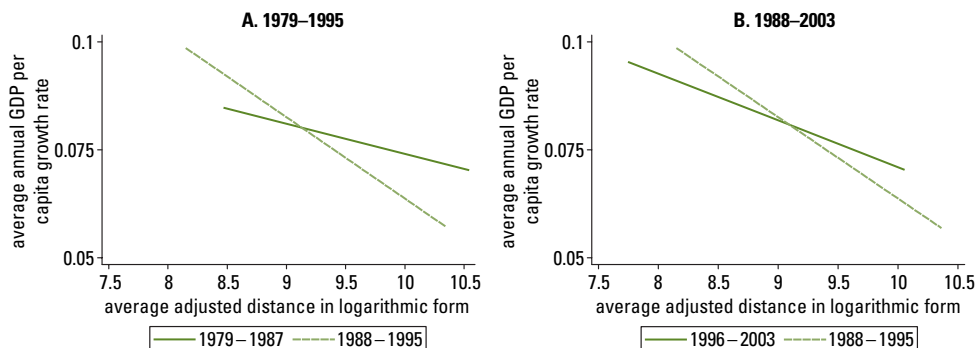


Source: National Bureau of Statistics (various years).

in the early years of the reform period (1979–87), growth was less dependent on location, as measured by the relatively flat line showing the relationship between GDP per capita growth rates and the “adjusted distance”³³ of a province from the coast. This is because the “balanced growth” strategy in the earlier years partially offset any locational advantages, with the consequence that growth rates tended to equalize across provinces, but at a lower level. With the onset of reforms and globalization during the 1988–95 period, locational advantages became more important; the closer

provinces were to the coast, the faster they grew, with the effect illustrated by a more steeply sloped line in figure 13.10 (panel A). Given the nature of the growth process in the reform period, a typical coastal province benefited from the compound effect of a reduction in the adjusted distance and the presence of market-oriented policies that capture the benefits of location. While a typical inland province benefited from the same reduction in adjusted distance, the disadvantages of remote location in the reform era had a negative effect on its growth potential. However, the adverse impact of distance

Figure 13.10 Relationship between growth in provincial GDP per capita and adjusted distance from the major coastal commercial areas in China, 1979–2003



Source: Authors' calculations based on National Bureau of Statistics (various years).

on growth was mitigated over time as China expanded its transport services. With the massive transport investment programs initiated in the 1990s, the distance factor became less of a barrier during the third period from 1996 onward (figure 13.10, panel B), making it possible for the growth rates of the inner provinces to move a bit closer to those along the coast, as shown in the line becoming slightly flatter. This may be one of the reasons why the gap in growth rates between the inland and coastal provinces has narrowed in recent years.

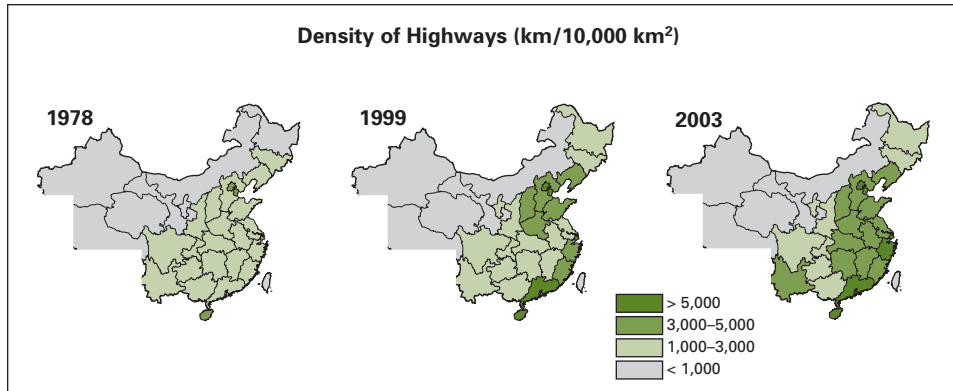
Part of China's success story is therefore due to sustained improvements in transportation and communication networks, which mitigated some of the disadvantages associated with distance. In the process, this allowed competitive forces to reshape interprovincial industrial structures more in line with evolving comparative advantages. These investments also contributed to globalization pressures by reducing the costs of transport and logistics as a percentage of the final price of traded goods, which helped to link production to both domestic and global markets. Internal divisions in the form of provincial boundaries have traditionally inhibited the integration of national markets, as evidenced by abnormally large differences in product prices and wages across provinces before the mid-1990s. Due largely to massive investments in transport infrastructure in the 1990s, internal transport and logistics costs have fallen significantly, and interprovincial prices and wage rates have begun to converge. In the

early 1990s, emphasis was placed on development of the coastal provinces and on upgrading of logistics services to improve connectivity with the outside world. After 2000, increasing priority was given to infrastructure investments in the western and central regions, as exemplified by a 45 percent expansion in highway mileage from 1999 to 2004, compared with a 30 percent expansion in the eastern region (Li and Xu 2007). Over the past decade, completion of the 44,000-kilometer national highway system along with improvements in 400,000 kilometers of local and township roads connected almost all of China's major regional centers.⁴ This was supplemented by huge investments in the railway network, ports, and inland waterways. All together, China has been spending more than 5 percent of GDP on transport investments annually, amounting to more than US\$100 billion in 2006 (of which about a third was on the expressway network). This is roughly double the amount spent in comparable countries.

As seen in figure 13.11, highway expansion was initially concentrated in the three core economic centers in the eastern region (Pearl River delta, Shanghai, and Beijing-Tianjin), spreading inward over time, following the need to move finished products and people. These patterns reinforced the fiscal and investment-related policy reforms, which favored growth along the coast and helped to promote agglomeration effects arising from unification of the national market.

The pattern of development for the railway sector has been different, driven largely

Figure 13.11 Density of highways in China, 1978, 1999, and 2003
kilometers per 10,000 square kilometers



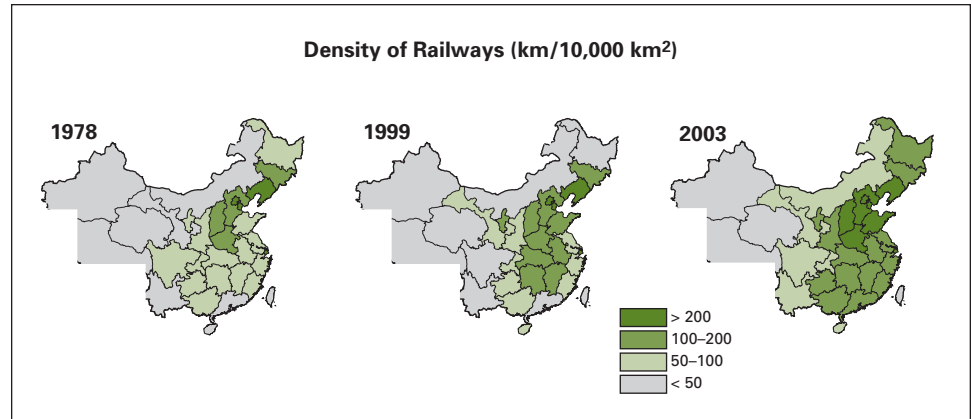
by the need to move bulk commodities like coal from resource-intensive regions in the northeast (see figure 13.12). Thus railway development was initially concentrated in the northeast, spreading first into the central provinces and then to the coastal areas. Investment in railways has lagged investment in the highway system. In particular, connections between the north and south for passenger and processed goods have not kept up with demand. Consequently, the rail system is overloaded, carrying 25 percent of the world's railway traffic on just 6 percent of its track length, but capacity is expanding rapidly in line with an ambitious investment program laid out for the coming decade.

Evaluations of the rates of return on highway projects over the past decade show that the majority cluster in the 15–25 percent range. There is now enough evidence to support the view that transport investments have been fundamental in linking regional markets. Only in the last few years has it been possible to drive by expressway from Beijing to Hong Kong (China) and from Shanghai to Xinjiang. Within the eastern provinces, transporters now have optional routes, which are important for long-distance transport of high-value freight, thus allowing distributors to hold smaller inventories and respond more quickly to changing market tastes. Wal-Mart now has a single major distribution center in Guangdong for supplying stores throughout China, a practice that would not have been possible a decade ago.

Improved connectivity has increased efficiency and facilitated greater industrial specialization through agglomeration economies. Reduced transport costs between inland cities and coastal mega cities and sea-ports—and from there to overseas markets—have promoted development of inland firms in two ways: through lower costs of inputs delivered by inland factories and higher net revenue from sales to external markets. The result is greater access to both national and external markets, creating more competition and eroding existing local monopolies. Both skilled and semiskilled labor is increasingly able to move from the interior to the coast and back in line with shifting economic activity, resulting in greater economies of scale and rewards to innovation.

These transport investments are part of a broader strategy to reduce logistics costs driven, in part, by the competitive pressures of globalization and the key role that China now plays in regional supply chains. Factors that influence logistics costs range from customs procedures, transport infrastructure, security, and regulations. China has made impressive progress over the past few decades. According to rankings on the logistics performance index (World Bank 2007b), China ranks 30 globally among 150 countries, but 1 among lower-middle-income countries. However, there is still potential for improvement, as measured by estimates that logistics costs amount to 18 percent of GDP in China compared with 10 percent in the United States (“China’s Infrastructure

Figure 13.12 Density of railways in China, 1978, 1999, and 2003
kilometers per 1,000 square kilometers



Splurge: Rushing by Road, Rail, and Air,” *Economist*, February 16, 2008).

Toward a more urbanized economy and implications for labor mobility

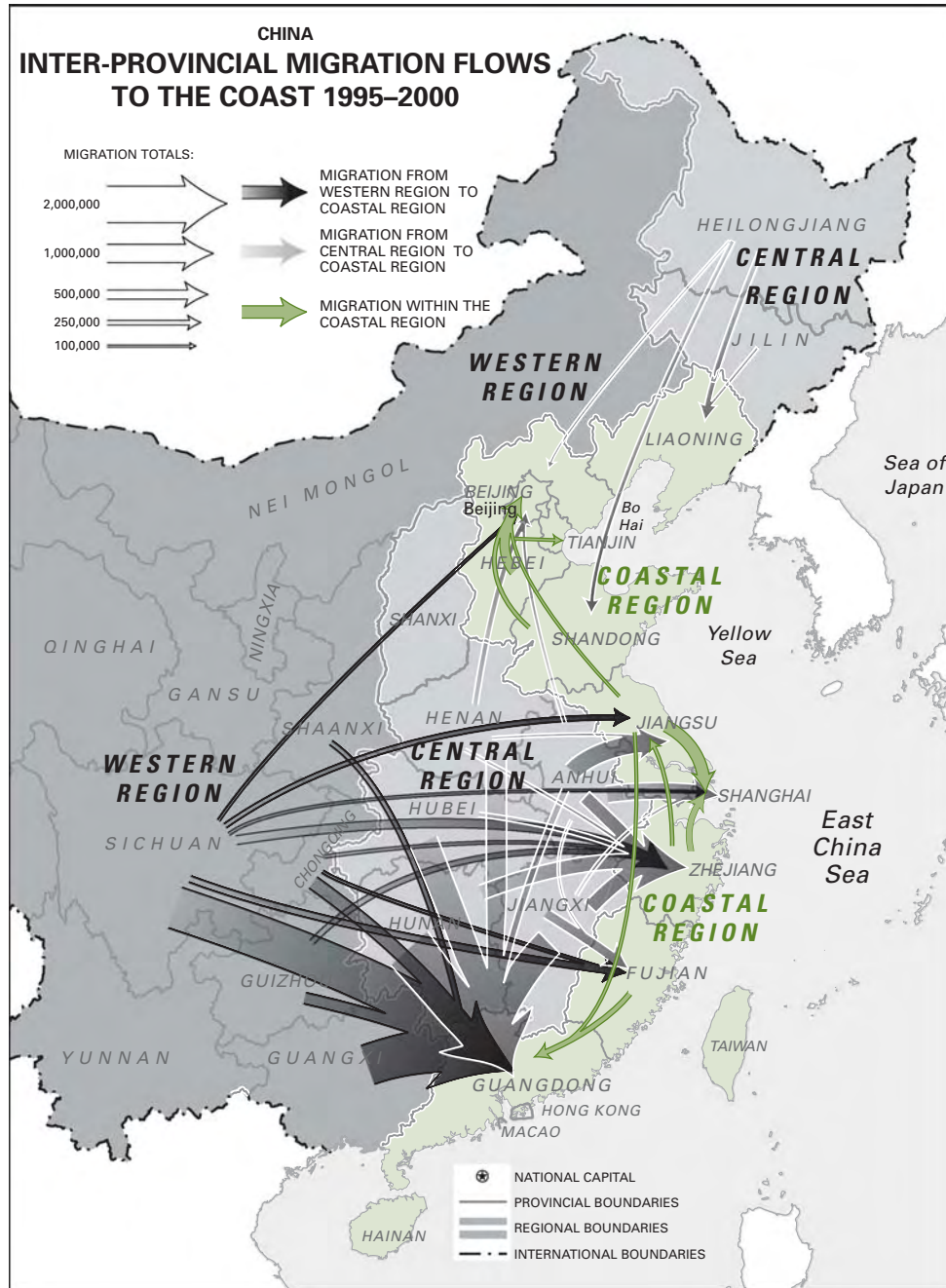
China’s urbanization process accelerated when the introduction of township-and-village enterprises drew workers out of farm production and facilitated migration. Over time, this spawned a large population of migrant labor, which now totals an estimated 140 million, heavily concentrated in the major commercial centers along the coast: Pearl River delta (Guangzhou and Shenzhen), Yangtze River delta (Shanghai), and Bohai Bay area (Beijing-Tianjin). See figure 13.13. However, rural migrants often can only find jobs not wanted by urban residents, characterized by long working hours, poor pay, and inferior working conditions. As reforms deepened, administrative constraints on labor mobility were progressively alleviated in the mid-1980s. Although access to housing, health services, and education for children remained unequal for migrants without urban residency status (*hukou*), they became less prohibitive over time.

For many migrants economic security is typically linked to their rural *hukou* in their home province, which, in the absence of formal land markets, provides the right to use agricultural land. A fully functioning land market, which would allow existing landowners to sell or lease use rights to others and migrate to the city if they found

employment opportunities to be sufficiently attractive and durable, is still absent in China. In the absence of more formal land use markets in rural areas, the equally contentious and politically sensitive issue of granting residency rights to migrant labor in the cities is difficult to resolve. However, as addressed in many studies, perhaps the most effective instrument for dealing with rural-urban disparities would be to reform the *hukou* system and give migrant workers better access to social services and equal employment rights. But understandably, elements of the system have helped China to avoid some of the worst features of urban slums typical of many Asian cities. Thus the issue is really about how to manage better rather than halt rural-urban migration to moderate social tensions while providing more equitable access to employment and social services.

A quarter century after the reforms began, China’s urbanization rate, including migrant labor, has more than doubled and is now about 50 percent. The urbanization rate of Guangdong province now exceeds 60 percent compared with about 35 percent in most western provinces. At the current stage of development in metropolitan areas, positive agglomeration effects dominate negative congestion effects, although China’s cities face severe environmental challenges and urban transport systems need to be improved. Contrary to popular perceptions, in relation to its population and land mass,

Figure 13.13 Interprovincial migration flows to the coast in China, 1995–2000



China's major cities are too small rather than too large. Building new "secondary" towns on the edge of existing cities may be effective, but only if there is a strong demographic and economic rationale for doing so. Fragmentation in large cities (agricultural or vacant land within the contiguously built-up city), resulting from a typical multiple-ring spatial

format of city development, has unnecessarily increased infrastructure costs by creating less densely utilized enclaves and increasing the costs of urban transport and other social services. More efficient urban planning that would infill "leapfrogged" areas will be an important issue as urban population growth continues to accelerate.

Dealing with emerging disparities: spatial and welfare aspects

Income inequality in China, as measured by various indicators, has risen rapidly in the past quarter century: between coastal and inland regions, within provinces, as well as across and within rural and urban areas. The dynamics of spatial divergence across subnational areas have taken the form of a “race to the top.” Disparities are not the result of stagnant income growth among certain segments of society or regions but rather the consequence of unusually high and sustained growth in coastal and urban areas. As the biggest gains have gone to the leading commercial centers, the income gap between the coastal and inland provinces as well as between urban and rural areas has steadily widened.

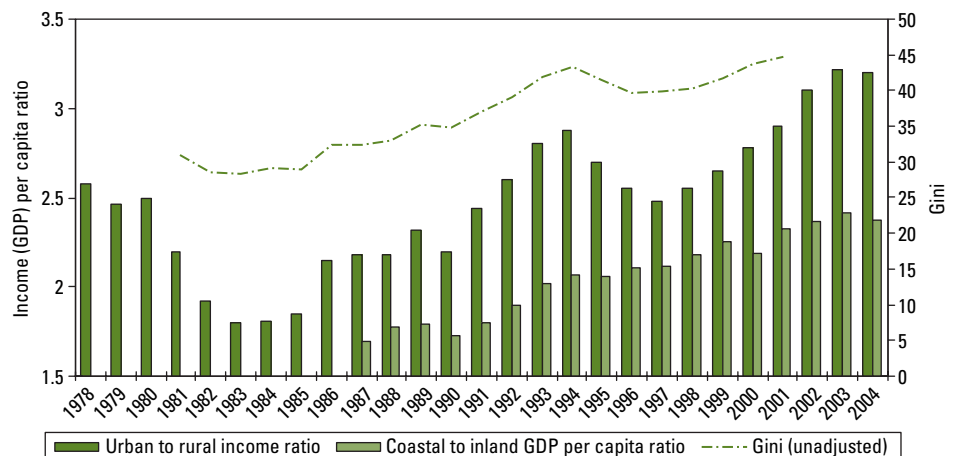
As one indicator, the Gini coefficient has risen from around 30 to 45 over the past 25 years (see figure 13.14). Although regional disparity is widely considered as the key determinant in China, the rural-urban divide is the more important factor in shaping overall inequality. Changes in the Gini are closely associated with changes in the urban-to-rural income ratio and the coastal-to-inland per capita GDP ratio.

Shifts in the urban-to-rural income ratio as well as the Gini are largely explained by performance of the rural economy. Over the past two and half decades, agricultural

production increased by around 4 percent a year; by international standards this is quite impressive. Yields for the major food grains, for example, are already quite high in China compared with other countries; in fact, they are similar to or higher than those in the United States and Japan and much higher than in Argentina, Canada, and Thailand (Yusuf and Nabeshima 2008). Given technological constraints and the cost implications of increasing crop yields in a land- and water-scarce economy, it is hard to see how agricultural growth could have been rapid enough to prevent rising urban-rural income ratios, because urban income growth rates have, at times, approached double digits. Thus experience suggests that inequality would be more effectively addressed by promoting off-farm income opportunities in rural areas. This is evidenced by the higher share of off-farm income in the coastal areas compared with the inner provinces and the extent to which this has lowered urban-rural income disparities in the former.

The challenge in reducing inequality, however, is that, as impressive as growth in rural incomes has been, it is still much lower than growth in urban incomes. As a result, trend lines for indicators of disparity either level off or reverse during periods of sharply rising rural incomes, notably in the early 1980s with the household responsibility reforms, in the mid-1990s with agrarian

Figure 13.14 Income inequality in China, 1978–2004



Source: Authors' calculations based on data from Ravallion and Chen (2004).

marketing reforms, and more recently with the reduction in rural-based taxes and the increase in commodity prices. For example, the urban-to-rural income ratio fell from 2:5 in 1980 to 1:8 by the mid-1980s and then rose to 2:8 by the mid-1990s. It then fell again to 2:5 in the late 1990s, before rising sharply and leveling off at the current ratio of 3:1 (World Bank 2007b, forthcoming; also see chapter 14 by Yao).

Regional factors do matter, however, because the larger urban-rural differences in the western provinces can be seen as structural: in those areas, ecological conditions militate against higher agricultural productivity and lower urbanization rates. Moreover, more isolated settlement patterns raise the costs of providing public services to rural inhabitants. Per capita GDP in the coastal region is now more than twice that in the inland region. As documented in many studies, the coastal provinces have smaller urban-rural income gaps than the inland provinces, with differences within rural and urban areas in the poorer regions being particularly pronounced (World Bank 2007a). In 2006 the ratio of urban to rural per capita income for the three richest provinces was about 2:5 times, while the ratio for the three poorest provinces was about 4:5. A large part of the inequality between regions is associated with the differences between their rural areas and is related to the uneven degree of urbanization across provinces. Thus equalizing mean incomes between rural areas and urban areas would have a larger impact on reducing overall inequality than equalizing mean incomes across regions (World Bank forthcoming). Both rural income levels and urbanization rates are lower in inland provinces than in coastal provinces. In 2005 rural per capita incomes were 70 percent higher and urbanization rates were 65 percent higher in the coastal region than in the western region. As urban incomes are, on average, two to three times rural incomes, the higher income levels in coastal areas are due largely to their more urbanized labor force.

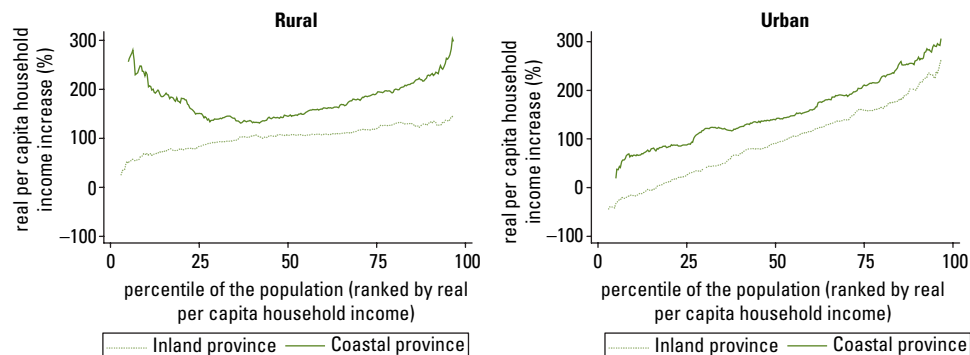
Within provinces, inequality within rural and urban areas has accounted for a larger share of total inequality over time.⁵ Before the reform era, the extent of urban and rural inequality was contained by the guaranteed

employment and flat remuneration system among urban enterprises and the comprehensive social welfare role provided by the communal farming system in rural areas. When marketization and structural transformation deepened, individual circumstances gradually played a more important role in determining income, including the high premium accorded to education.⁶ This suggests that increasing income inequality is, to some extent, a consequence of the stage of China's development: the growth process unleashed competitive pressures and created incentives for investment in skills enhancement.

There is also a regional dimension to the evolution of inequality. Among the coastal provinces, the poorest groups in rural areas have experienced phenomenal growth in their incomes, while among inland provinces rural households have not experienced as significant an increase. Meanwhile, the incomes of the wealthier groups in urban areas—both the coastal and inland regions—have been rising the most rapidly (see figure 13.15). Overall, in both urban and rural areas, the growth rate of income has been higher in coastal than in inland provinces.

The divergence in growth rates between coastal and inland provinces peaked between the mid-1980s and 1990s, but there seems to be some convergence in recent years, especially in the western region, as the growth rates of many of the poorer provinces increased more rapidly (see table 13.1). This is also noted by Yao in chapter 14 and by Li and Xu (2007). These encouraging trends may be due to recent regional policies, but they are also an affirmation that globalization forces, embodied by WTO accession, have not worsened the rural-urban divide. Accompanied by labor market reforms, the forces of globalization actually narrowed the differences between international and domestic market prices for agricultural products and eliminated domestic policy distortions between farm prices and market prices. In doing so, the terms of trade improved in favor of agricultural products, and rural-urban inequality declined (Huang and others 2007).

It might be too early, however, to attribute this convergence to the impact of various regional development policies—"Go West"

Figure 13.15 Income growth in rural and urban areas of China, 1989–2004

Source: Luo and Zhu (2008).

in 1999, “Revive the Northeast” in 2003, and “Central China Rising” in 2005—that targeted rebalancing regional growth (see chapter 14 by Yao). By remedying market failures and some of the earlier biases in spatial policies, these programs probably did help to address some of the issues underpinning regional disparities. In focusing on ecological restoration and infrastructure improvements in the west, restructuring static industrial and institutional systems in the northeast, and developing intermodal connectivity facilities in the central region, these efforts can be an effective means to develop the comparative geographic and economic advantages of the various regions. However, arguments for a more aggressive investment-led strategy to raise agricultural productivity to levels comparable to those in the industrial and services sectors, and thus to moderate rural-urban disparities, should be pursued cautiously, given differences in regional endowments and considerations of cost-effectiveness.

Judged by social indicators, China’s performance has been favorable, with achievements exceeding what would be predicted in relation to income levels. China’s human development index (HDI) has risen continuously over the past quarter century to 0.78, placing the country 81 in 2005 among 177 countries (UNDP 2007). China’s primary school net enrollment rate of 97 percent and life expectancy of 72.5 years are higher today than the average of lower-middle-income countries.

However, as discussed earlier, disparities in social indicators among regions and

Table 13.1 GDP growth rates of central and western regions as a percentage of the coastal region in China, 1980–2006

coastal = 100

Year	Central	Western
1980–85	94	91
1986–90	72	80
1991–95	75	63
1996–2000	87	82
2001–06	87	92

Source: National Bureau of Statistics (various years).

between rural and urban areas are large. As of 2000, 2.5 percent of the urban population between 15 and 64 years of age received no education, while the proportion in rural areas was more than three times as high, at 8.7 percent. Child and maternal mortality rates are twice as high in rural areas as in cities. Moreover, social disparities between urban and rural areas appear to be greater in the poorer provinces, particularly in the west. For example, the urban-rural disparity in life expectancy is less than 3.5 years in the eastern region, but more than 8 years in the western region. Over the past decade, given the increased attention to regional differences, especially in the poorer western provinces, interregional gaps at the primary educational levels have narrowed. However, urban-rural disparities in health conditions may have widened since the late 1990s due to the persistence of urban-rural income inequality and slow development of rural health care insurance systems. This issue has drawn increased attention from policy makers, with indications that more support will be brought to bear in the near future. This reinforces the point made earlier: the

persistence of such disparities in welfare indicators illustrates how much further the distributional aspects of fiscal policies need to go to moderate trends.

Looking to the future

Recent trends suggest a gradual convergence in growth rates between the coastal provinces and the interior. But the advantages of location will likely persist even if narrowed, with agglomeration effects continuing to favor the larger and more globalized urban areas along the east coast. What, then, should be the course of future policies, given public pressures to deal with increasing disparities?

Both theory and experience indicate that government initiatives should not try to “balance the location of productive capacity” across regions. However, a strategy to “moderate differences in economic welfare” between the coastal and inner provinces and between rural and urban areas would involve a three-prong approach that builds on China’s past success by (1) strengthening the distributional aspects of the fiscal system so that regional and rural-urban differences in access to social services are reduced and allocations of investment projects are less constrained by the financing capacity at the poorer sub-provincial levels; (2) eliminating jurisdictional barriers that inhibit mobility of labor, financial resources, and goods, while strengthening infrastructure and logistics links so that the regions and rural-urban areas are better connected; and (3) encouraging complementary regional development policies that recognize and build on the uniqueness of geographic and inherited economic differences rather than working against them.

The government’s policies have been generally consistent with this agenda, although progress on some aspects could be accelerated and others refined given political pressures (see chapter 15 by Chen and Lu and chapter 14 by Yao). The distributional impact of the fiscal system in transferring resources from richer to poorer provinces and between urban and rural areas should be further enhanced, especially since revenue growth has been so buoyant in recent years. Although the bias favoring infrastructure needs in the coastal provinces has been reversed, interior regions remain less well served in relation to

the needs of the population. Protectionist provincial regulations that discourage inter-regional movement of goods, finance, and services and encourage duplicative industrial structures have lessened as national markets have become more unified, but many inefficiencies persist. Regionally differentiated policies should continue to recognize that the priority for the western region is defined by its fragile ecological conditions and the need to strengthen its base of human capital to prepare for the voluntary migration of labor to better employment opportunities. For the northeast, the priority is to encourage more aggressive restructuring of enterprises, create supportive social protection systems, and tap the region’s natural agriculture-based advantages. For the central region, the priority is to strengthen intermodal transport links and logistics services, as commercial activities inevitably shift inward to serve major population centers and growth becomes more domestically driven.

In the future, however, China’s evolving economic structure is likely to favor a more balanced pattern of investment in transport infrastructure. Investment in one province will increasingly have spillover effects on other provinces (see chapter 17 by Bai and Lin; Luo 2005). In addition, as China’s growth becomes driven relatively more by growth in domestic consumption and services and less by external demand, highway investment in the central provinces will exert both a push and a pull effect on adjacent western and eastern provinces, and this may produce the best overall net economic effect (Luo 2004). In addition, while a relatively complete transport network has developed along the coastal areas, many of the western and some of the central provinces lack high-grade highway connections to each other and to the major eastern cities. Over the coming decades, the regional pattern of investment priorities is likely to involve a combination of the following: (1) eastern provinces: expand capacity where the volume of traffic warrants; (2) central provinces: complete network connectivity; and (3) western provinces: improve accessibility through a balanced investment program of expressways and lower classes of roads (World Bank 2007a).

Positive externalities within and across sectors have further intensified the concentration of activities. As the most developed coastal metropolitan areas move up the ladder into higher value-added services and high-technology industries, dispersion of labor-intensive activities remains limited within the coastal region (Catin, Luo, and Van Huffel 2005). Only a few industries have relocated to adjacent inland provinces, and some are attractive candidates, if there are no major agglomeration economies in being along the coast and if access to domestic consumer centers and lower cost structures become more important. Thus reducing local protective barriers and encouraging more regional integration will help to strengthen the spillover effects from the coast to the rest of the country, which are necessary to facilitate continued gains in productivity.

The disadvantages of being located in the remote interior may not always be a problem, and, ironically, globalization may well be a significant factor in expanding trade to Central Asia and Europe through the old silk route via the relatively poorer western provinces of Gansu and Xinjiang. Similarly, there is a noticeable increase in trade flows going into Southeast Asia via Guangxi and Yunnan due in part to the promotional efforts to integrate the Greater Mekong region (see chapter 6 by Rigg and Wittayapak). In fact, growth in exports along these border areas is expanding more rapidly than anywhere else, albeit from a relatively low base.

Pressures will also be high to address widening urban-rural disparities. Improving connectivity and encouraging spillover effects that provide more wage-based rural employment is the most attractive option. While designing policy reforms for rural and urban areas is often seen as separate exercises, sustainable institutional solutions may emerge from thinking about the problem in a more spatially neutral framework. For example, social welfare schemes that segregate rural and urban populations tend to accentuate differences and hamper financial sustainability.

Perhaps the major challenge, however, is managing the pace and nature of reforms

in China's *hukou* system, which are closely linked to policies governing rural and urban land use rights. No other measure is likely to have as significant an impact as liberalizing internal migration from rural to urban areas and from disadvantaged inland regions to the more dynamic commercial centers along the coast as well as the newly emerging inland commercial centers such as Chongqing and Wuhan.

The government's policies have been generally consistent with this agenda, placing renewed emphasis on improving welfare in rural areas and dealing with the environmental concerns from rapid urbanization. Taken together, such initiatives will promote the agglomeration benefits from higher *density*, help to minimize the *distance* factor that impedes more efficient location of economic activity, and take down the *divisions* that limit factor mobility and discourage sustainable development outcomes. As discussed below, over time, location-specific disparities, as measured by social welfare indicators, will become less pronounced.

Likely trends in inequality

The key question facing policy makers is whether China can maintain rapid growth in a way that moderates existing inequalities. This is all the more important given the concern of the senior leadership for fostering a more "harmonious society," which is a major objective of the current Five-Year Plan. Thus how will the above policies affect distribution of income across income groups and space? The links between growth and equity are complex. Sustained growth is likely to uplift the incomes of everyone—urban and rural, rich and poor—as has been the case thus far. But as impressive as this progress has been, it does not necessarily lead to a more equitable distribution of income. As noted, over the past quarter century, the Gini has been closely associated with movements in the ratio of urban-to-rural incomes and coastal-to-inland GDP per capita. Small differences in annual growth rates can lead to wide gaps over time. Take urban and rural income growth as an example. A 1 percent difference in the annual growth rate (4 percent for rural and 5 percent for urban)

compounded over 24 years will result in an increase in the urban-to-rural income ratio from 2.5 times to 3.2 times. If one ignores the fluctuations over time, that is roughly the change in the urban-to-rural income ratio during the period of 1980–2004.

In the future, inequality will very likely continue to rise. The reason, as observed by Kuznets in his seminal work, *National Income and Its Composition* (Kuznets 1941), is that, as a country develops and the population moves from lower-productivity agriculture to higher-productivity urban centers, this leads to a lengthy period of rising overall inequality as the share of the higher-paid urban workers increases relative to the less well-off rural population (Bourguignon 2008). But over time, as the rural population diminishes with migration, inequality begins to decline as the vast majority of the population becomes engaged in urban-based activities.

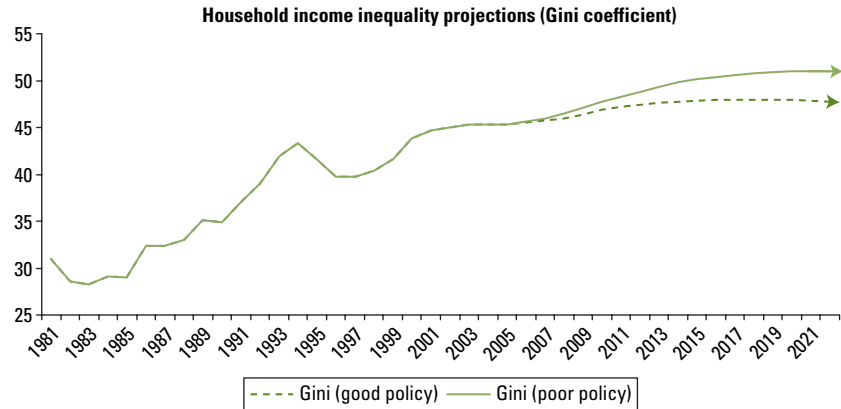
At this stage in China's development, for the foreseeable future growth in productivity will remain higher in the industrial and service sectors than in agriculture due to specialization and agglomeration effects. China's GDP growth rates, however, will likely decline somewhat from recent levels to a more sustainable 8–9 percent over the coming decade or two. The recent shift in the terms of trade between the industrial and primary sectors will reverse itself at some point or become a neutral factor in affecting intersectoral incomes. As a consequence, the urban-to-rural income ratio will feed into rising overall inequality as measured by the Gini. With appropriate policies, however, a plausible scenario could begin to reverse this trend:

- As a large continental economy (similar to the United States), domestic demand will eventually play a more dominant role than trade as China develops. Industries, starting probably with those that are more “footloose” and geared to the domestic market, may choose to locate more inland to optimize their cost-profit structure and better respond to consumers in the major population centers in the central provinces. Once the economic mass in inland

areas reaches a critical threshold, centripetal and centrifugal forces may work in favor of the emerging new economic centers and eventually lead to a narrowing of inland-coastal differences.

- Current policies that emphasize a more balanced approach in building a “more harmonious society” may redistribute resources in favor of more social services for less-developed areas and poorer segments of the population. Implementation of appropriate fiscal and regional policies will influence the emergence of new economic centers, but in ways consistent with shifting comparative advantages and market forces.
- Migration will become a powerful force in shaping development and influencing distribution. Movement of labor, typically from rural to urban and inland to coastal areas, contributes to overall income growth. On the one hand, it provides coastal and urban areas with a flexible labor supply at reasonable costs; on the other hand, it augments the availability of land and other resources for those staying in rural farming areas, while generating higher incomes for migrants (Zhu and Luo 2008). Although the impact of migration on lowering the urban-to-rural income ratio may be uncertain—because this depends on the combined effects on migrants and non-migrants in sending areas and residents in receiving areas—migration is likely to reduce coastal-inland inequality by accelerating urbanization and increasing overall productivity.

How long will it take before the forces that moderate income inequality begin to make a difference? As the percentage of the population working in more productive jobs in urban areas becomes large enough, at some point the pattern of income divergence and inequality will have peaked and the Gini will begin trending downward. These processes take decades and perhaps even a generation to become significant if the experiences of developed countries are to be taken as a guide. We project that with good policies—freer internal migration, more redistributive

Figure 13.16 Projected household income inequality in China, 1981–2021

Source: National Bureau of Statistics (various years) and authors' calculations.

fiscal policies, and continued infrastructure investments to improve connectivity—the Gini will continue to rise over the next decade, peaking at around 48, but then begin to decline before 2020.⁷ With less effective policies, the Gini will continue to increase to well over 50 and may then level off, but it will not begin to decline even by 2020 (see figure 13.16). Either way it is important to realize that growth and spatial factors have a very slow impact on distributional outcomes. This does not mean that social and economic progress is not being made. With appropriate policies, all segments of society are likely to be better off in the coming years. How China handles this complex set of issues will have profound implications for shaping the location of future activity and for determining its impact on social disparities and growth.

Notes

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1. The municipalities of Beijing, Tianjin, and Shanghai are not included in this analysis given their special fiscal situations.

2. In almost all countries, per capita social expenditures are higher for richer areas than for poorer and in urban areas than in rural. These can be explained not only by differences in the availability of local financing but also by differences in price indexes. Thus a degree of inequal-

ity is normal, but in China's case, the disparities are unusually large.

3. Adjusted distance is defined as the “traveling distance” between the province in question and the economic centers along the coast, adjusted by the level of development of the transport network. Transport investments “shorten” the economic distance between the two provinces by reducing transportation costs. See Luo (2001, 2004).

4. For a comprehensive discussion of transport investment and its impact on development in China, see World Bank (2007a), which is the source of much of this discussion.

5. Rural inequality continues to be higher than urban inequality, although the rate of increase in urban inequality is becoming more significant.

6. A recent study based on household survey data of eight Chinese provinces in 1989–2004 (Luo and Zhu 2008) suggests that the most important factor explaining overall inequality is the differential returns to schooling and sector of employment; the increase in returns to education explains two-thirds of changes in household income in urban areas and one-sixth in rural areas.

7. See He and Kuijs (2007), who show that, with a more labor-intensive, service-led pattern of urban growth, urban-rural inequality will decline in the decades ahead as more migration allows productivity of those left behind in agriculture to increase.

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