Chapter 5
Economic Geography

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5.1 Introduction

China and the U.S. are in different stages of economic development and display very different economic geographies. The U.S. experienced industrialization and urbanization in the late nineteenth century and early twentieth century as farmers moved to the cities to meet the labor demand of the rapidly growing manufacturing. By mid-twentieth century, the employment in the tertiary (services) sector in the U.S. has forever passed that in the secondary (industrial) sector (Fig. 5.1). Based on the experiences of the U.S. and other developed countries, western theories (Clark 1940) have suggested that as economies develop, labor markets shift from the primary sector to the secondary sector and then to the tertiary sector. This domestic labor transition was deepened as the U.S. was integrated into the globalization process in the late twentieth century. As a result of the international division of labor, manufacturing jobs moved out of the U.S. to developing countries such as China and Mexico while the U.S. increasingly relies on exporting advanced service to the world market for its economic growth. Today, the U.S. is one of the few countries that has reached the post-industrial stage of economic development, in which services is the most important economic sector in both income and employment (Table 5.1). As of 2010, the services sector contributes 76.8 % of the gross domestic product (GDP), much higher than the industrial sector (22.1 %) and the agricultural sector (1.1 %) (The Richest 2012). Similarly, the services sector employs about 83 % of the labor force, while that percentage is around 15 % for the secondary (industrial) sector and 2 % for the primary (agricultural) sector (de Blij and Muller 2006).

China began its industrialization much later. It was not until 1970 (Gong 2002) that the contribution of the industrial sector in GDP has forever passed that of the

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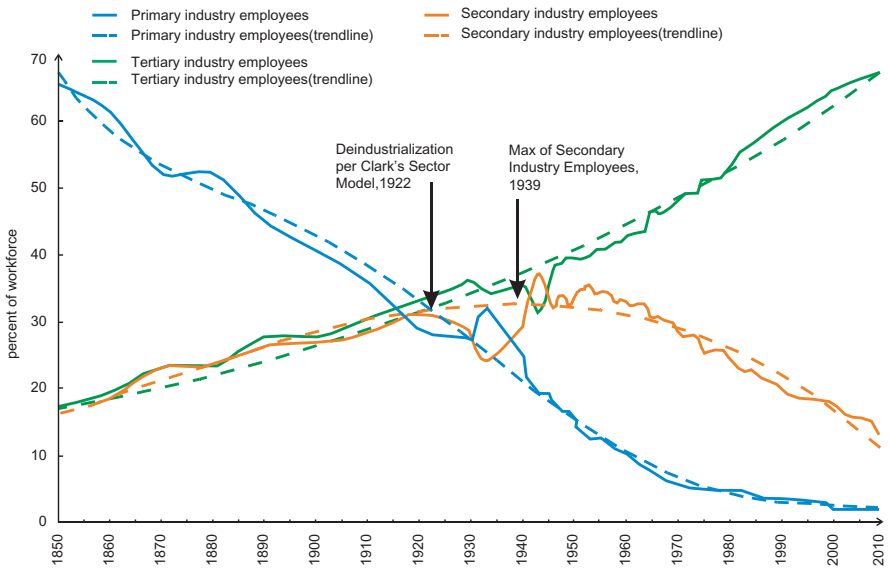

Fig. 5.1 Sector model for the U.S. economy, 1850–2009. (Kossik 2011)

Table 5.1 GDP and employment structures of China and the U.S. (The Richest 2012; CSSB 2009a; de Blij and Muller 2006)

Structures	Countries	Primary/agricultural sector (%)	Secondary/ industrial sector (%)	Tertiary/services sector(%)
GDP	China	10.2	46.9	43.0
	United States	1.1	22.1	76.8
Employment	China	40	27	33
	United States	2	15	83

agricultural sector to become the leading sector. As of 2010, the industrial sector contributes 46.9% of the GDP, slightly higher than the 43% of the services sector (The Richest 2012). China is still in the industrialization stage and has not yet reached the post-industrial stage of economic development. In the globalization process and the international division of labor, China is at the receiving end of manufacturing that is moving out of developed countries such as the U.S. and Japan. China has become the largest manufacturer in the world (Mitra-Thakur 2011).

In terms of employment, 40% of China's labor force was employed by the primary sector in 2008, 27% by the secondary sector, and 33% by the tertiary sector (CSSB 2009a). The percentage of the tertiary sector in the total labor force was lower than that of the secondary sector in the 1970s and 1980s, but passed it since 1994 (Fig. 5.2) as China became more industrialized and labor productivity in the manufacturing sector increased. Overall, China followed a similar path of sectoral

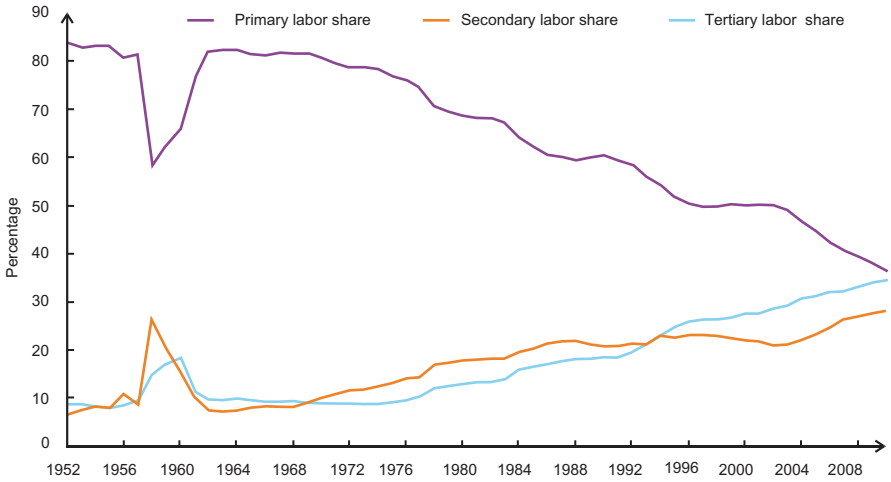

Fig. 5.2 Change in employment structure in China, 1952–2010. (CSSB 2011)

labor shift in developed countries from the primary sector to the secondary sector and then to tertiary sector (Gong 2002). In the future, the percentage of the primary sector in the total labor force is expected to continue to decline and eventually become the lowest among the three sectors, while that of the tertiary sector in the total labor force will become the highest.

Since China and the U.S. are in different stages of economic development, in addition to their different physical geographies as discussed in a previous chapter, the economic geographies of China and the U.S. display different spatial patterns. For example, the economic activities in the U.S. are almost entirely concentrated in urban areas; while a good portion of those in China (10.2% of GDP and 40% of labor force) are primary (agricultural) activities that widely spread across the rural areas. This chapter is devoted to discuss the three economic sectors and their geographies in the two countries. The primary sector typically includes agriculture and mining, economic activities that make direct use of natural resources. Although agriculture is the major component of the primary sector and these two are often used interchangeably, agriculture has been discussed in the last chapter. The discussion of the primary sector in the next section will therefore focus on mining (including quarrying and extraction of oil and gas) of natural resources.

5.2 Natural Resources and Mining

Both the U.S. and China have large territories and abundant natural resources. While both countries take advantage of their natural resources through mining, they import raw materials from the world markets to sustain their economy development. As the

U.S. has reached the post-industrial stage, its import of raw materials is mostly oil and gas to keep up with its high per capita energy consumption. China, on the other hand, imports raw materials necessary for its production of manufactured goods.

China has discovered and extracted a multitude of metal ores and non-metallic minerals to provide the raw materials for domestic industrial production. China has large coal reserves. Raw coal production reached 3.24 billion tons in 2010, accounting for 40% of the total coal production worldwide (CSSB 2011). Most of the coalfields are found in the central interior and western areas of the country. The three provinces of Shanxi, Inner Mongolia, and Shanxi account for two thirds of the known coal reserves in China. By contrast, Eastern China where most of the industrial production takes place has only 5% of the coal reserves. This imbalance has resulted in constant energy shortage in Eastern China and large amount of coals being shipped eastward (in Chinese Pinyin, the "Xi Mei Dong Yun" policy).

China is not only the leading producer but also by far the largest consumer of coal. In 2010, China consumed 47.5% of the coal produced worldwide. While the U.S. is another major consumer of coal—the U.S., Europe, and India combined is responsible for nearly 30% of the growing world coal consumption—it is a coal exporter, with large coal reserves available in Appalachia and beneath the Great Plains. In recent years, the U.S. has started to export coal to China where energy needs have considerably risen along with a growing economy and greater output of manufactured goods.

China's coal powered economy is aided by other energy sources such as oil and natural gas. In order to reduce its coal dependency, China has made significant progress in developing renewable energy sources, most importantly solar and wind energies. The proportion of clean energy resources has increased from 9.9% in 2001 to 13% in 2011 (CSSB 2012) and further growth can be expected. In the United States efforts in generating more energy from renewable sources have been made as well but change has come very slowly; the share of clean energy in total energy consumption has surpassed 5% but has not yet reached 10%. The U.S. economy remains largely dependent on the uses of fossil fuels, with 36% of its energy coming from petroleum, 26% from natural gas, and 20% from coal in 2011 (U.S. Energy Information Administration 2011).

The production and consumption trends of oil and natural gas in China and the U.S. emphasize again the growing importance of a globalizing world economy. The U.S. has been an importer of oil and natural gas for several decades now—with more than 50% of the oil and natural gas consumed imported from the neighboring countries of Canada and Mexico, from the Middle East, Venezuela and more recently from African countries, whereas China has become an oil importer not until the mid-1990s. However, the tremendous needs of a rapidly growing economy have resulted in a considerable increase of oil and natural gas imports over the past ten years (Ying 2012), mostly from countries in the Middle East, Angola in Africa, Kazakhstan in central Asia, Russia, and Venezuela.

Importing more and more oil and natural gas is a trend that China shares with the U.S. In both countries, domestic oil and natural gas production has become a high priority. New technologies in extraction, most notably hydraulic fracturing ("frack-

ing"), have enabled the U.S. to significantly increase its domestic production in states such as Colorado, North Dakota, and Pennsylvania, and the goal of reducing imports considerably below the 50% mark in the near future have found a more realistic basis. In China, major efforts in increasing domestic production are made as well. Crude oil and natural gas resources are mainly concentrated in the lacustrine petroleum basins of Northeastern China, Northern China around the Bohai Sea, Sichuan Province, and Northwestern China. Xinjiang, in particular, has the potential of developing into a national base for oil and gas production and processing. China also has large crude oil and natural gas reserves on its continental shelves. The East China Sea holds the largest reserve in China, followed by the South China Sea, the Bohai Sea, and the Yellow Sea. Exploitation efforts of these offshore reserves have not come without controversy as neighboring Asian countries have increasing energy needs as well.

The increasing use of fossil fuels, with nearly 70% of its energy coming from coal, has brought about high level of manufacturing carbon emissions in China. According to the report of UK Tyndall Climate Change Research Center (Zhang 2012), China ranked the top in the world as it produced 28% of the global carbon emissions in 2011, followed by the U.S (16%). However, China's carbon emissions per capita are lower than that of the U.S. Chinese central government promised to reduce carbon emission per unit of GDP by at least 40% by 2020 from the 2005 level (Wang and Feng 2011). For different reasons, both China and the U.S. opted for voluntary measures in addressing national and international concerns regarding their respective 'carbon foot print'.

The availability and use of metals for industrial production in China have also a global dimension. Although endowed with significant resources, China imports some of these raw materials for the high quality production of manufactured goods. For instance, China is rich in iron ore but the average grade is relatively low and the proportion of high-grade ore is less than 5%. Consequently, the import of iron ore increased six times in China between 2002 and 2011, mainly from Brazil and Australia. As to lead, zinc, and copper ore reserves, China has sufficient domestic resources, though.

China is especially endowed with rare earth that is useful for the production of specialized high-tech goods. China has 23% of the world's rare earth reserves and accounts for more than half of the global production. However, overexploitation not only makes rare earth resources decrease in value quickly, but may also have serious environmental impacts. In recent years, China's dominance in the global rare earth market has been weakened as other countries made efforts to explore rare earth resources. Some countries in the global economy launched new exploitation efforts while other countries that were used to depend on China for rare earth have managed to employ substitutive technologies (Wei and Pan 2012). Responses to China's once prominent role in rare earth extraction have also been implemented by U.S. companies inside and outside of the United States, which again shows the forces of the global market in action.

In general, mining of natural resources has been growing in both the U.S. and China to meet their demands for consumption and production. Table 5.2 shows the

Table 5.2 Employment and growth in mining in the U.S. and China. (Calculated from U.S. Census Bureau (2007a) and CSSB (2005, 2009b))

U.S.				China			
NACIS	Industry	2007	2002–2007 Annual growth (%)	Code	Industry	2008	2004–2008 Annual growth (%)
21	Mining, quarrying, and oil and gas extraction	703,129	8.2	B	Mining	9,908,000	2.8

employment and its annual growth rate in mining (including quarrying as well as oil and gas extraction in China's statistics) in the two countries. The employment data come from their latest economic censuses (2007 for the U.S. and 2008 for China). The average annual growth rates are calculated from the last two economic censuses (2002 and 2007 for the U.S. and 2004 and 2008 for China). The annual growth rate in the U.S. was 8.2% between 2002 and 2007, almost three times of that in China, as the U.S. encouraged domestic production (mostly in Texas and Louisiana, see Fig. 5.3) to reduce the import of oil and gas. On the contrary, China invested heavily in overseas, such as Africa, South America, and Australia, for its growing quest for energy and raw materials (Stevenson 2010). As a result, China's oil import rose while domestic oil production declined, for example, in May 2012 (China Daily 2012).

5.3 Industrial Sector

While the economies of the U.S. and China are at different stages of development, they have become increasingly integrated into the rapidly growing global economic system over the past twenty-five years. This applies most evidently to the production and distribution of manufactured goods. The industrial sectors of both countries are intricately and tightly connected to the global economy. This section will discuss the growth and geographies of the industrial sectors in the two countries, with a focus on China being integrated into the global production network.

5.3.1 Industrial Structure and Growth

The industrial sector, also called the secondary sector, includes utilities, construction, and manufacturing industries. Because the U.S. has passed the industrial stage, the employment in the industrial sector has been experiencing decline as a whole and in manufacturing in particular (Table 5.3). Manufacturing jobs in the U.S. have been outsourced to developing countries, such as Mexico and China, to take advantage of the cheap labor and land there to reduce the production costs and increase

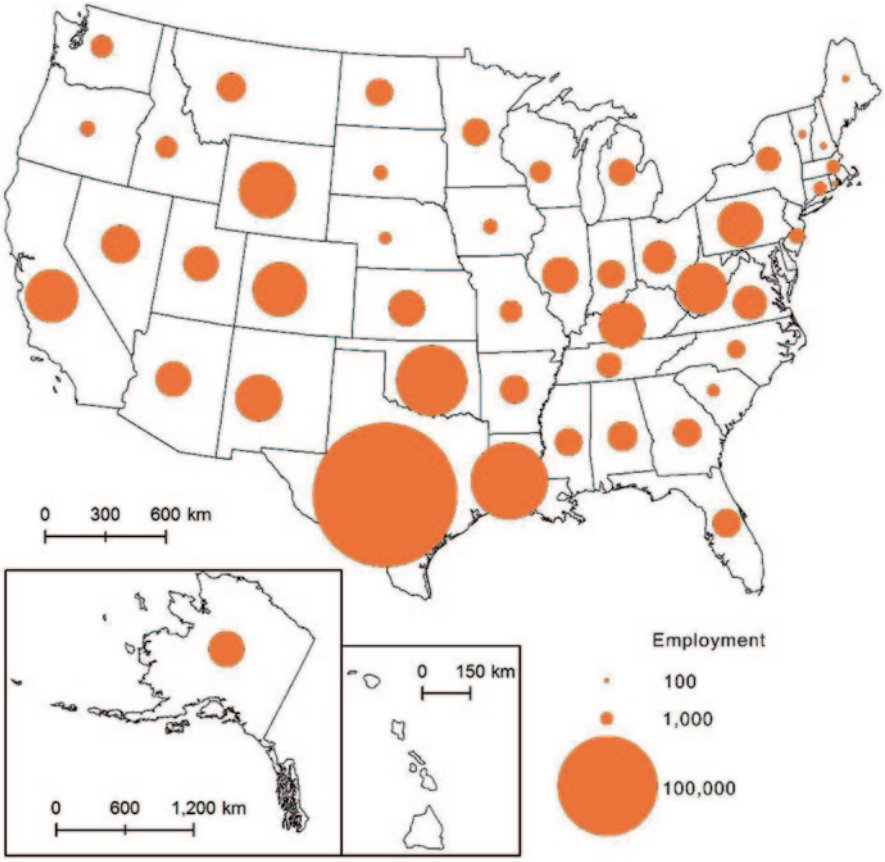

Fig. 5.3 Employment in mining, quarrying, and oil and gas extraction in the U.S. by State, 2007

the profits. Although the employment in manufacturing declined in the U.S, the revenues from manufacturing increased from $ 3,915 trillion in 2002 to $ 5,339 trillion in 2007 (U.S. Census Bureau 2007a), an annual increase of 6.4 %. The labor in the U.S. has been shifting from labor-intensive manufacturing to high-tech manufacturing and high-order services to capture higher value-added and profits.

Employment in construction in the U.S. experienced minor growth (Table 5.3) between 2002 and 2007, due to the housing market boom before the financial meltdown in 2008. As it is much more difficult to outsource construction work to overseas than manufacturing, the U.S. has used many foreign workers in construction, many of them are illegal immigrants from Mexico and other countries in Latin America. When the housing market crashed in 2008, the number of construction workers in the U.S. dropped from 7.4 million in 2007 to 5.4 million in 2010 (U.S. Census Bureau 2010), an annual decline of 11.1 %!

Table 5.3 Employment and Growth in the Industrial Sector in the United States. (Calculated from U.S. Census Bureau (2007a))

NACIS	Industries	2007	Percent (%)	2002–07 Annual growth (%)
22	Utilities	632,432	3.0	−1.0
23	Construction	7,399,047	34.6	0.6
31–33	Manufacturing	13,333,390	62.1	−1.9
22–33	Total in industrial sector	94,116,804	100	−1.1

Table 5.4 Employment and growth in the industrial sector in the China. (Calculated from CSSB (2005, 2009b))

Code	Industries	2008	Percent (%)	2004–2008 Annual growth (%)
D	Utilities	4,046,000	2.7	2.6
E	Construction	39,077,000	26.5	8.8
C	Manufacturing	104,331,000	70.8	5.6
C–E	Total in industrial sector	147,454,000	100.0	6.3

China is booming in the industrial sector, especially in construction and manufacturing (Table 5.4). Manufacturing is the predominant industry in the industrial sector, accounting for 70.8% of the employment in China's industrial sector, higher than the 62.1% in the U.S. (Table 5.3). Manufacturing is mainly responsible for China being called the world's factory floor (Hennock 2002) and for China surpassing Germany to be the world's top exporting country in 2009 (Mufson 2010). The proportion of manufactured goods in the total exported goods of the country increased dramatically from 49.4% in 1985 to 94.7% in 2011. Meanwhile, the proportion of manufactured goods in the total imports declined from 87.5 to 65.3% in the same period (CSSB 2012).

Compared to that in the U.S., manufacturing in China is primarily labor-intensive, although technology and capital-intensive products have been steadily increasing. The proportion of labor-intensive products to the export commodities in China was 62.2% in 1991, but declined to 39.8% in 2010 (Fig. 5.4). Technology and capital intensive products grew quickly; it percentage in manufacturing export increased from 15.3% in 1991 to 55.0% in 2010. The export of high-tech products reaches 31.2% of all exports in 2010, nearly 3 percentage points higher than that in 2005 (Fig. 5.5). While China has clearly been integrated into the global production network, technology and capital-intensive products (such as chemicals and related products) are still less competitive than labor-intensive ones (such as light textile industrial products) in terms of trade competition index (Table 5.5). Evidence shows that China focuses on some low-skill-labor-based manufacturing and is still at the low-end of the value-added chain (Xing and Detert 2011).

In terms of gross industrial output value in 2010, the top ten sectors in China's manufacturing are transportation equipments manufacturing, communication equipments, computers, and other electronic equipments manufacturing, ferrous metals

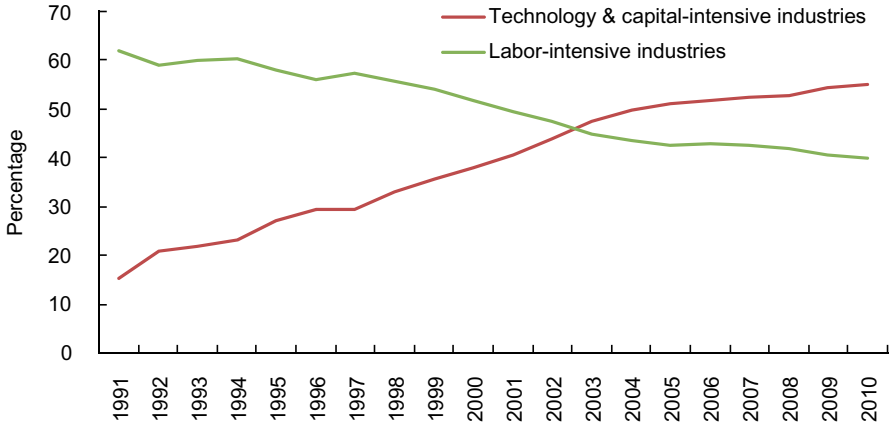

Fig. 5.4 Export structure of China's manufactured goods, 1991–2010. (CSSB 2011)

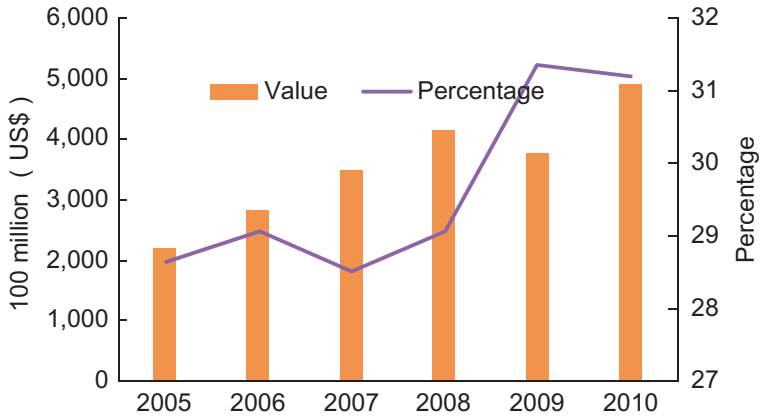

Fig. 5.5 Percentage of high-tech products in China's total export, 2006–2011 (CSSB 2006–2011)

Table 5.5 Trade Competitive (TC) Index of China's Products. (CSSB 2007–2011)

Year	Chemicals and related products	Machinery and transport equipment	Light textile industrial products, rubber products, minerals and metallurgical products
2006	−0.32	0.12	0.34
2007	−0.28	0.17	0.36
2008	−0.20	0.21	0.42
2009	−0.29	0.18	0.26
2010	−0.26	0.17	0.31

TC (Xi − Mi)/(Xi + Mi), where Xi represents the export trade and Mi represents the import trade of the product i (Grubel and Lloyd 1975). TC ranges between −1 and 1. The higher the value of the TC index, the more competitive the product

smelting and pressing, raw chemical materials and chemical products manufacturing, electrical machinery and equipment manufacturing, general purpose machinery manufacturing, agricultural products and byproducts processing, non-metallic mineral product manufacturing, petroleum processing, coking, and nuclear fuel processing, and textile industry. These sectors combined accounts for 67% of the manufacturing, indicating that the heavy industry overweighs the light industry. The heavy industry occupies a dominant position in the industry sector in China, with a high percentage (70%) in terms of value added (CSSB 2011).

Inwards foreign direct investment makes great contribution to the speedy growth of Chinese manufacturing. The amount of overseas investment actually utilized on manufacturing increased from $ 25.84 billion in 2000 (CSSB 2001) to $ 52.10 billion in 2011 (CSSB 2012). However, its proportion in the total inwards foreign investment decreased from 63.4 to 44.9% in the same period. During this time, manufacturing did not grow as fast as services. Moreover, multinational corporations shifted investment from China to Southeast Asia since the mid-2000s as the labor cost in China started to increase. Furthermore, reindustrialization in some advanced economies caused some foreign manufacturers to close their factories in China and other developing countries and to focus on economic activities at home. General Electric and Caterpillar are two cases in point (Zeng 2012).

A growing number of Chinese manufacturing companies have been speeded up their pace of internationalization through going abroad since the late 1990s. A large proportion of Chinese overseas investment in manufacturing concentrates in Africa and Southeast Asia. However, a few large companies, such as Haier in home appliance manufacturing, Lenovo in electronic computer manufacturing, ZTE and Huawei in telecommunication equipment manufacturing, and Geely in automobile manufacturing, have successfully expanded to North America and Europe through setting up branch plants or merger and acquisition. China is increasingly integrating its manufacturing into the global economy.

5.3.2 Geography of Manufacturing

In general, manufacturing in China concentrates in the area along the Yangtze River and the coast, especially in the Pearl River Delta, the Yangtze River Delta, and the Bohai Rim. In terms of employment, five provinces in the three areas mentioned above, Guangdong, Jiangsu, Zhejiang, Shandong, and Liaoning, account for more than half of the country. In addition, Hubei, Sichuan, Henan, and Jilin are also important manufacturing provinces in China (Fig. 5.6). In contrast, Tibet, Xinjiang, Gansu, Inner Mongolia, Ningxia, Qinghai, Yunnan, and Guizhou in western China account for less than one percent of China's manufacturing employment.

To a great extent, the spatial distribution in manufacturing is a result of its physical geography, historical development, and government policies in China. Historically, manufacturing was concentrated in the Northeast, a by-product of Japanese occupation in this area to extract the rich natural resources, and in a few major cities along the coast. When the People's Republic of China was established in 1949, the

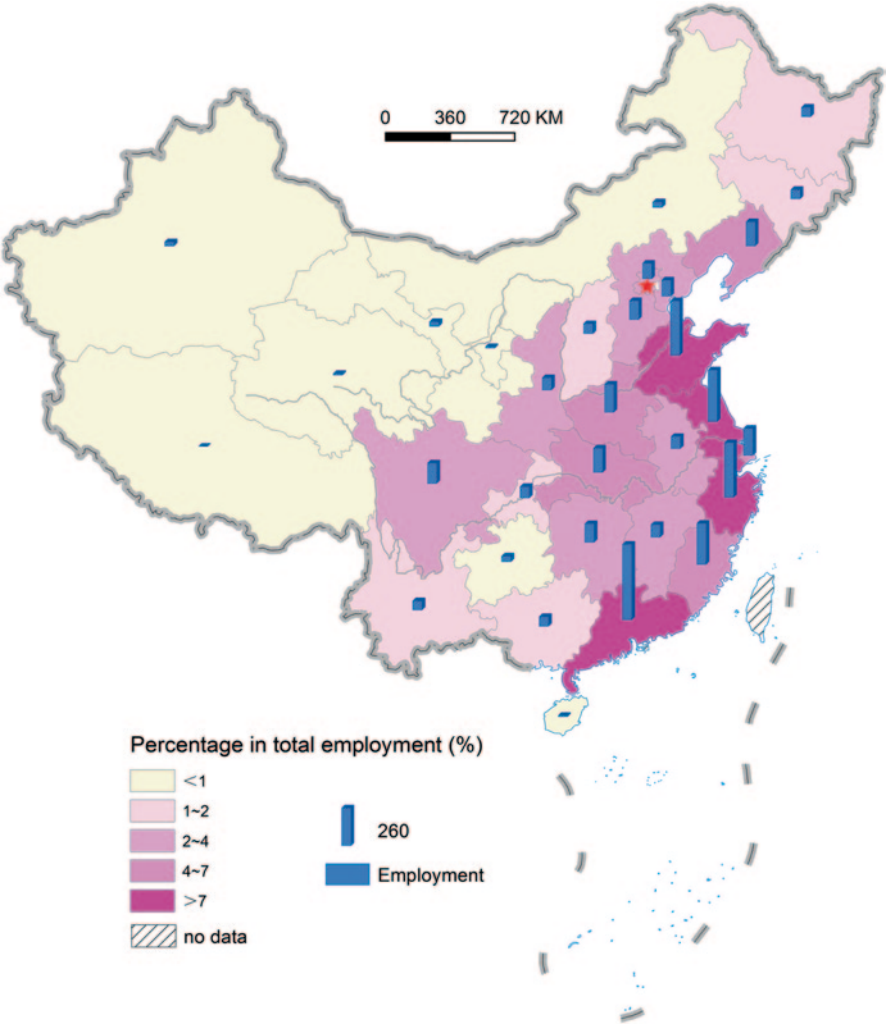

Fig. 5.6 Distribution of manufacturing employment in China by province. (CSSB 2011)

Chinese government adopted a regional balanced development strategy to change the excessive concentration of manufacturing on the East. The gap between the inland and the coastal areas shrank significantly. Since the open-door policy and economic reforms in the late 1970s, the strategic status of the eastern coastal belt and the Yangtze River has been highlighted by the Chinese government to increase the productivity in manufacturing. The two areas constituted a "T"-style spatial structure of the national economy, and the agglomeration economies of manufacturing were further intensified. Since 2000, China has successively implemented strategies to encourage economic development in Western and Central China and to revitalize old Northeastern industrial bases, to reach a more balanced regional

development. Under such circumstances, the inland areas have more opportunities to attract manufacturing companies at home and from abroad to take advantage of the lower labor costs and improved infrastructure.

Specifically, the geography of high and new technology industries is worthy of note as they are the future of manufacturing in China. In China, high and new technology industry consists of eight sub-sectors, namely nuclear fuel processing, information chemical manufacturing, medical and pharmaceutical products, aviation and aircrafts manufacturing, electronic and communication equipment manufacturing, electronic computers and office equipment manufacturing, medical treatment instruments and meters manufacturing, and public software services. The high and new technology industry in China has made great progress especially since the 1990s. Employment in high-tech industry increased from 4.48 million in 1995 to 114.7 million in 2011. The number of high and new technology companies increased from 9,758 in 2000 to 21,682 in 2011, while the gross output went up from 1041 billion Yuan to 8843 billion Yuan, and the effective number of patents increased from 1,443 to 77,725. The ratio of expenditure on R&D to prime operating revenue reached 1.41% in 2011, three times more than that in 1995 (0.46%). In terms of value added, electronic and communication equipment manufacturing accounted for nearly half of the high and new technology industry in 2011, followed by electronic computers and office equipments whose percentage was close to 24%. The medical and pharmaceutical products manufacturing ranked the third with a proportion of 16.8% (CSSB 2012). In 2008, China ranked first in the world for its high technology manufacturing exports of $ 381 billion, accounting for 19.11% of the world, followed by the U.S. ($ 231 billion). Meanwhile, China ranked fourth in the world for its high proportion of manufacturing exports in high technology products (28.66%) in the same year (World Bank 2010).

High and new technology companies in China agglomerate in the coastal areas. Figure 5.7 shows the location of 105 national-level high and new technology industrial development zones (NHNIDZs) in 2012. Of the 105 NHNIDZs, 45 of them are in the Eastern area, 13 in the Northeast area, 23 in the Central area, and 24 in the Western area. Seven of the eight NHNIDZs with more than 10 billion Yuan of gross output in 2010 lie in the Eastern China while only one is in the western province of Shaanxi.

Similar to China, manufacturing in the U.S. was traditionally concentrated in the Northeast, the so-called manufacturing belt. However, the geography of manufacturing in the U.S. changed significantly during deindustrialization in the late twentieth century. While many manufacturing jobs moved out of the Northeast of the U.S., domestically, they moved from the manufacturing belt (also called Snowbelt) to the Sunbelt areas, i.e. the South and the West.

In Fig. 5.8, the size of the pies represents the magnitude of employment in the industrial sector while the blue, green, and red colors in each pie represent the percentages of total industrial employment in manufacturing, construction, and utilities in each state. In the Sunbelt, California in the West and Texas in the South have the highest employment in the industrial sector (Fig. 5.8) and in manufacturing. In terms of percentage, Midwest states such as Wisconsin and Indiana have the higher proportions of manufacturing employment in the industrial sector.

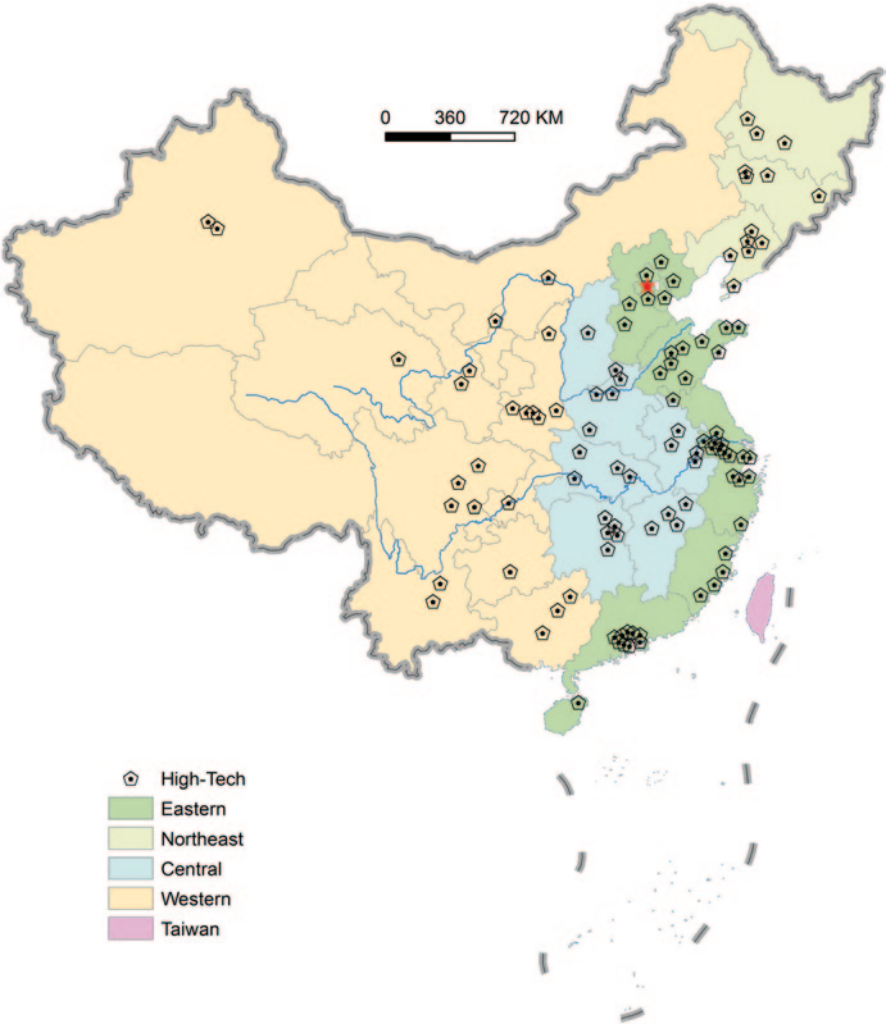

Fig. 5.7 Distribution of national-level high- and new-tech industrial development parks in China

5.4 Services Sector

5.4.1 Structure and Growth of Services

The services sector was called the tertiary sector in the past, but is subdivided into tertiary, quaternary, and quinary services when the services sector expanded to become the predominant economic activities in developed countries such as the U.S. (Table 5.6). Tertiary services in the U.S. today include low-order services such as

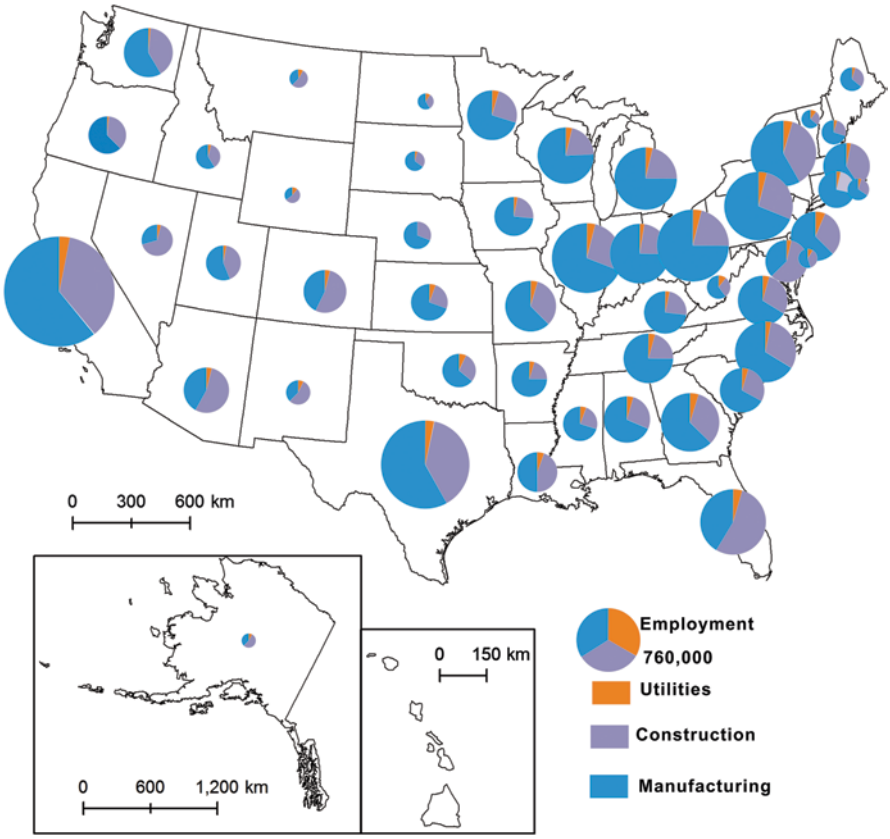

Fig. 5.8 Industrial employment and structure in the U.S. by state, 2007

retail, wholesale, transportation, and warehousing. Quaternary services, also known as producer services, primarily cater to manufacturing producers or other services and include intermediate services such as business and professional services, finance and insurance, and real estate services. Quinary services typically include health, education, arts, entertainment, and recreation services. Quaternary and quinary services are also called high-order services or knowledge-based services, the demand for which tends to increase as an economy develops and per capita income rises. The services sector in China is much less developed and is often reported together in government statistics as the tertiary sector. For comparison purpose, it is subdivided and reported in Table 5.7 in this chapter by using data from the first two national economic censuses in China.

Of the services sector, a lower percentage of the labor force is employed in low-order tertiary services in the U.S. (23.3 %) than in China (27.8 %) and a higher percentage in quaternary or producer services in the U.S. (29.3 %) than in China (24.6 %). These are indications that the services sector is more advanced

Table 5.6 Services employment and growth in the United States. (Calculated from U.S. Census Bureau (2002, 2007a, b) and de Blij and Muller (2006))

NACIS	Industries	2007	Of services Total (%)	Of U.S. total (%)	2002–2007 annual growth (%)
42–49, 72	Tertiary services	26,341,579	23.30	19.3	2.00
51–56	Quaternary services	33,179,368	29.30	24.3	1.50
521–523	Finance	4,184,028	3.70	3.1	0.14
5613	Employment services	5,189,787	4.58	3.8	4.49
61–81[a]	Quinary services	53,695,857	47.40	39.4	2.00
62	Health care and social assistance	16,859,513	14.89	12.4	2.29
72	Accom-modation and food services	11,587,814	10.24	8.5	1.25
42–81[a]	Services[a] total	113,214,804	100.00	83.0	1.3

[a] For compatibility with China, number of full-time equivalent government employees in the U.S. is added to the Economic Census data for calculation

Table 5.7 Services employment and growth in China. (Calculated from CSSB (2005, 2009b))

Code	Industries	2008	Of services total (%)	Of China total (%)	2004–2008 annual growth (%)
F, H, O	Tertiary services	31,680,000	27.8	9.2	8.1
G, J–N	Quaternary services	27,996,000	24.6	8.1	9.2
J	Finance	4,870,000	4.3	1.4	6.8
P–S, I	Quinary services	54,124,000	47.6	15.7	4.3
Q	Health, social security and social welfare	6,804,000	6.0	2.0	5.5
I	Accom-modation and food services	5,858,000	5.2	1.7	8.1
F–S	Services total	113,800,000	100.0	33.0	6.5

in the U.S. than in China. However, the average annual growth rates for tertiary, quaternary/producer services, and quinary services are much higher in China than in the U.S., indicating the momentum and potential of growth in China's services sector. In fact, the average annual growth rate for the services sector (6.5%, Table 5.7) in China is higher than that for the industrial sector

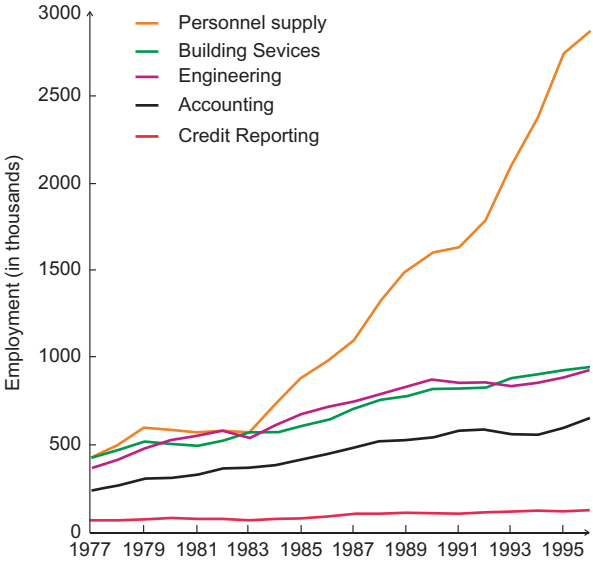

Fig. 5.9 Growth of employment services in the U.S., 1977–1996. (Gong 2001)

(6.3%, Table 5.4) and for mining, quarrying, and oil and gas extraction (2.8%, Table 5.2). More inward foreign investment in China was invested in the services sector ($ 58 billion, 50% of the total) than the industrial sector ($ 52 billion, 45%) in 2011 (CSSB 2012).

As the statistics for the subsectors in services are not always directly comparable in the U.S. and China, the discussions below and in the next section may focus on only a few subsectors. Employment services that provide placement services for employers or those seeking employment, for example, is worthy of special attention. Not listed separately in China's statistics, employment services experienced tremendous growth in the late twentieth century and in the 2000s in the U.S. Figure 5.9 shows the employment increase in five producer services in the U.S. in the late twentieth century. Employment services, called personnel supply services at that time under the old Standard Industrial Classification (SIC), grew much faster than other fast-growing producer services. Between 2002 and 2007, employment services still increased at an average annual growth of 4.5%, more than three times of that (1.3%) for the services sector as a whole.

Within the quinary services, health services are becoming increasingly important in the U.S. economy as income rises. Health services accounts for 14.9% of the services employment in the U.S. (Table 5.6), much higher than the 6.0% in China (Table 5.7). Of the total employment in the country, this gap is even bigger for the two countries. The 12.4% in the U.S. is more than six times of the 2.0% in China. Although China is currently in a stage of developing producer services to serve its industrialization, as income in China continues to rise in the next few decades, health services will no doubt play a much bigger role in China's economy.

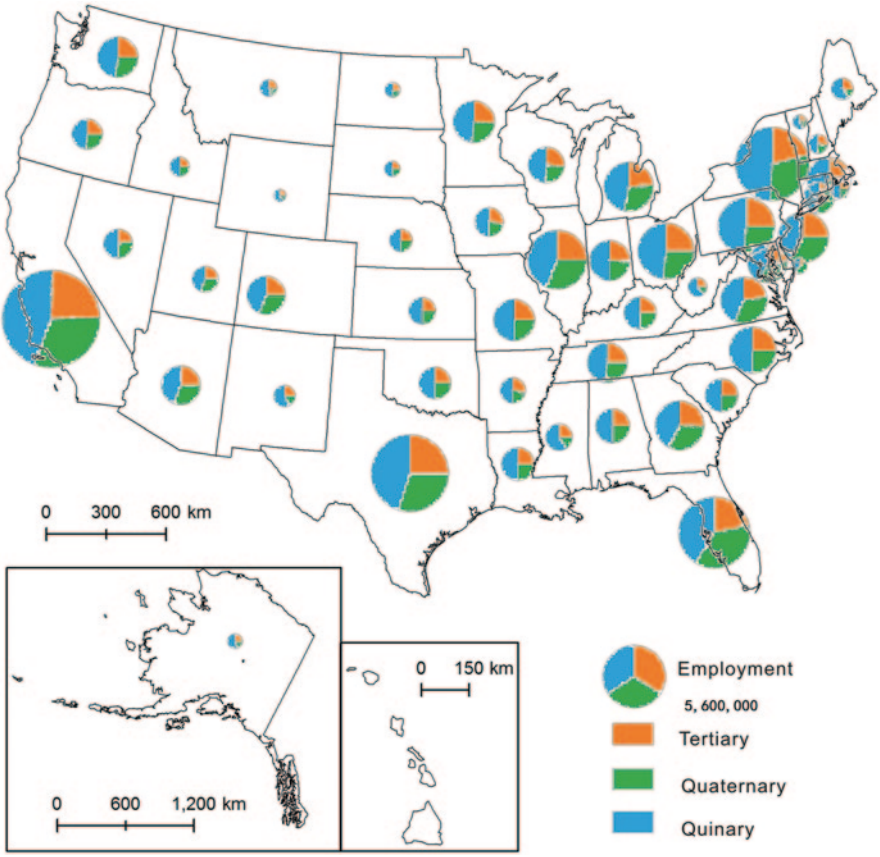

Fig. 5.10 Employment and structure of services in the U.S. by State, 2007

5.4.2 Geography of Services

States in the U.S. have a good balance of tertiary, quaternary, and quinary services in the services sector (Fig. 5.10). The top four states in services employment are California, Texas, New York, and Florida. New York metropolitan area has gone through the economic structuring from manufacturing to services and ranks top in many advanced services, including business and professional services (Fig. 5.11) and financial services (Gong and Keenan 2012). It is the home of the New York Stock Exchange and one of the top three international financial centers in the world. Together with London and Tokyo, New York City is well known as a global city. It has always been the most visited city in the U.S. (Tourism to be 2008), followed by Los Angeles in California.

In China, coastal areas play an important role in the development of the services sector. Guangdong, where services employment reached 22.75 million in 2010, was

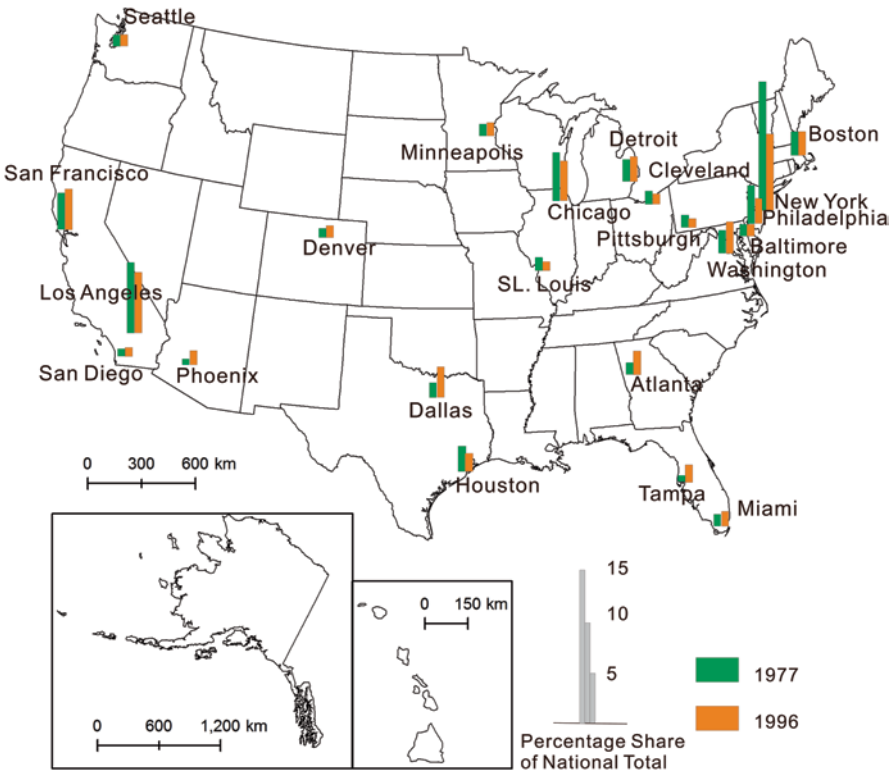

Fig. 5.11 Share of large metropolitan areas in the U.S. employment in business and professional services. (Gong 2001)

in the first place. Jiangsu, Shandong, and Zhejiang each had a services employment more than 10 million. In the Northeast, the services employment of 9.52 million in Liaoning province is the highest. Henan, Hunan, Hubei, and Anhui were relatively higher in the central region, while Sichuan was the most outstanding in the western region (Fig. 5.12).

While finance accounts for 3.7% of the services employment in the U.S. (Table 5.6), its percentage in China is higher, at 4.3% (Table 5.7). Since the late 1970s, China's financial service has grown significantly. In terms of the output value in 2010, Beijing, Shanghai, Guangdong, Zhejiang, and Jiangsu were the top five financial centers at the provincial level. The only two stock exchanges in Mainland China are located in Shanghai and Shenzhen (in Guangdong). With the development of Pudong New District in Shanghai since the early 1990s, Lujiazui Finance and Trade Zone has been developing rapidly. Building Shanghai into an international financial center by 2020 has been a development strategy of China. Shenzhen has also strengthened its position in the financial services of China based on the cooperation with its neighboring city—Hong Kong. As the state capital, Beijing is attractive to the headquarters of financial institutes at home and abroad.

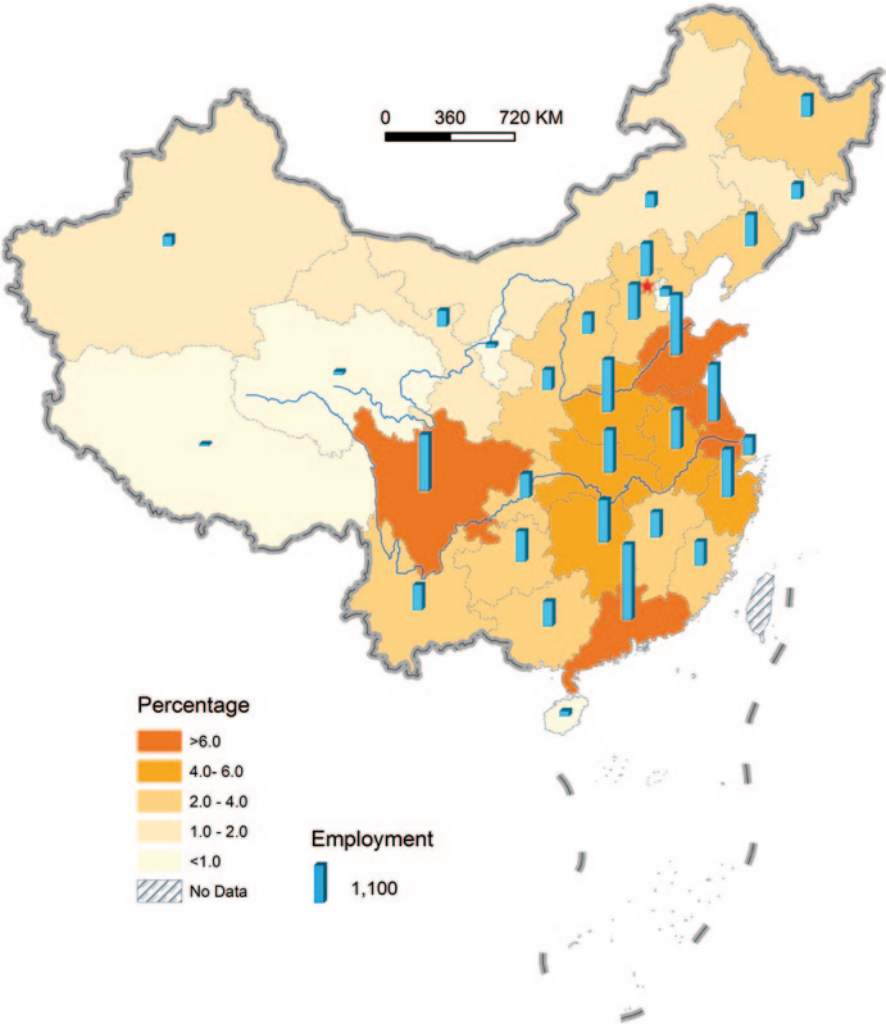

Fig. 5.12 Employment in the services sector and as a percentage of total employment by province in China, 2010. (CSSB 2011)

China's tourism industry has also been developing rapidly since the late 1970s. By the end of 2009, there were 20,399 travel agencies and 14,237 star-rated hotels in China (CSSB 2011). Related to tourism, accommodation and food services in China grew at 8.1 % annually between 2004 and 2008 (Table 5.7). Domestic and international tourism reached 2.1 billion person-times in 2010, with about 1.3 trillion Yuan of domestic tourism income and 45.8 billion U.S. dollars of foreign currency revenue from international tourism. As more and more visitors coming from overseas, China has advanced its rank in the world's tourism from the seventh in 1995 to the third in 2010 and in foreign currency revenue from the 14th to the 4th (Editorial Board of the Yearbook of World Economy 2012).

The eastern areas of China are the main tourism destinations for overseas visitors. Guangdong, Shanghai, Zhejiang, Jiangsu, Beijing, Fujian, and Shandong are the most attractive places. Guangdong, in particular, ranked the top with 31.4 million foreign visitors in 2010, followed by Shanghai (7.3 million). In western China, Yunnan, Guangxi, and Shaanxi have built up their famous names in the world and attracted more overseas visitors in recent years. Rapid development of international tourism in eastern China is attributed to the rapid economic development, better tourism infrastructure, and convenient transportation system. Western China, however, has not fully turned its abundant tourism resources into economic benefits because of its poor infrastructure.

5.5 Conclusions

Although the U.S. is much more advanced than China in economic development, China's economy is growing much faster than the U.S., in fact, the rest of the world, in the past few decades. China was still the sixth largest economy in the world in 2004 (China Daily 2005), but has become the second largest economy in 2010 (The Richest 2012). It is predicted that by 2020, China will have overtaken the U.S. to become the largest economy in the world (The Richest 2012). On such a fast track of economic development, China will certainly benefit from the experience of the U.S. in an advanced stage of economic development and from a comparison study of these two largest economies in the world.

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