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An Analysis of the Chinese Labor Market

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Abstract

The purpose of this thesis is to analyze China's labor market. Before main analysis, we examine modern history of China. Based on the history, we discover background of China's economic growth and side effects which are represented as inequality. While China pursues uneven regional development policy, regional disparity problems have been emerged. To meet our goal, we have three factors: employment, average wage, and tertiary education attainment. First, we provide overall labor market situation from various angles: urban-rural, sector, and ownership type. Second, we examine our three factors by province. Finally, we summarize results of analysis and make a comparison about provinces. All data employed in this paper are extracted from National Bureau of Statistics of China and reference year is 2005, 2010, and 2014.

Keywords

China labour market, Employment in China, Wage in China, Education in China, Provinces of China, Inequality

JEL Classification

I23, I24, J01, J31, O53

Declaration of Authorship

The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.

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Prague, July 29, 2016

Signature

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I would like to express my gratitude to those I love the most.

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<p style="text-align: center;">Institute of Economics Studies Bachelor thesis proposal</p>
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Description of the Topic

It is well known that China is one of the most powerful and promising countries all around the world. Not only for its rapid economic growth over the last few decades also manufacturing power as “the world factory”, China has accumulated its national power. Based on various natural resources and large areas of land, a massive supply of labor made a contribution to the “rise of China.” Currently it has the largest population in the world, being estimated more than 1.3 billion and implying that there are still huge potential labor forces within the country.

The goal of the thesis is to analyze the labor market in China. At first, it will focus on how China’s labor market has developed since its economic reform era. During the period, China has achieved remarkable economic development by adopting market economy mechanism. The reform also affects the labor market in the various ways. In the main section of this paper, the analysis of the labor market will be handled from three different perspectives: employment, wage, and higher education by province, respectively. One of the crucial problems emerged during the last few decades in China is regional disparity; therefore, the paper will investigate three variables by region.

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Acronyms

CCPPD	Publicity Department of the Communist Party of China
CPC	Communist Party of China
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GRP	Gross Regional Product
NBS	National Bureau of Statistics of China
OECD	Organization for Economic Cooperation and Development
PLA	Chinese People's Liberation Army
SEZs	Special Economic Zones
SOEs	State-Owned Enterprises
UCEs	Urban Collective-Owned Enterprise
WTO	World Trade Organization

Chapter 1

Introduction

China is one of the mightiest countries in the world and its influence on global economy is considerably strong. Then, since when China became powerful? To answer correctly, we have to penetrate history of China. Originally China was a planned economy, therefore everything was controlled by the government. However, through the Cultural Revolution, China perceived necessity of transition and since late 70s the economic reforms were implemented.

The reforms were successful and China started to grow sharply. However, beyond the astonishing development, there were hidden social problems. Among those, regional inequality was considered as the most serious issue. To get deep insight into this problem, it is necessary to study correlation between labor market and regional gap. As a factor of labor market, we select employment, wage, and education. The reason we choose those is that firstly employment is a good indicator which reflects labor market situation. For wage, people have a tendency to work hard when wage is high, improving productivity. In addition, Education, as a human capital, affects labor market: better-educated person is likely to have high opportunities to find a job.

The objective of this thesis is to explore the current situation in China's labor market and inequality by region. Many previous studies have already shown that there exist regional gaps. However, in this thesis, we focus on inequality in terms of employment, wage, and education. For instance, with statistical data, we discover which province has the largest number of employed persons and which one has the smallest. In this way, we establish an idea of how the factors are influenced by province.

The thesis is structured as follows: Chapter 2 gives an overview of existing literature on China's reforms, following side effects and relationships among education, employment, and wage in the labor market. In Chapter 3, the modern history of China (before and during the reforms) and general features of China's labor market are described. Chapter 4 contains the main analysis. Employment, average wage, and higher education during the period from 2005-2014 by province are covered. In Chapter 5, we summarize the outcomes and conclude the main ideas.

Chapter 2

Literature Review

2.1 China's Reform and Inequality

China has been transformed in a various way during the last 60 years after Mao Zedong, the chairman of the Communist Party of China (CPC), declared "New China." Especially on the basis of the reforms and opening-up started from late 70s, China has achieved a remarkable growth. Originally, under the communist economic system, the government controlled labor forces within the whole country and managed labor distribution. However, the reforms allowed people to behave depending on market signals (Zhang, Huang, & Rozelle, 2002) and made employees' incomes be determined based on their ability (Okushima & Uchimura, 2006).

China's labor market has been developed in a process of the reforms. While China shifted their focus from rural to urban and agriculture to industry, a significance of the labor market to build up a modernized China was emphasized (Zhang et al., 2002). In addition, according to Lee (2000), the growth of the labor market acts as a key factor determining a regional economic development pattern along with an increase in production. He demonstrated that non-state enterprises produce considerably large amount

and it results in higher employment in coastal provinces where non-state enterprises are usually located. Meanwhile, state-owned enterprises (SOEs) have relatively small amount of production, therefore, there exists lower employment.

China has built up a unique Chinese-style economy, socialist market economy, by introducing capitalism to the existing Communism. In this way, the labor market has been developed under a mutual coexistence status between the government's control and market mechanism.

Nevertheless, it is a fact that China's rapid economic development was accompanied by incalculable socio-economic costs (Lee, 2000). In other words, a shadowy side of China is hidden by the splendid growth. Firstly, Okushima & Uchimura (2006) argued that equality level of income and opportunity distributed were sacrificed since the reforms were biased toward economic growth. Rather than pursuing distribution and development together, China has chosen the later and concentrated on macroeconomic growth. Bai (2006) stated that even though China has successfully achieved outstanding economic outcomes, it is obvious that a huge gap between the "haves" and "have nots" from the perspective of per capita Gross Domestic Product (GDP) emerged. China's hukou system ¹which has been inherited since 1958 still has a huge influence on the allocation of labor, therefore in labor market there are a wide rural-urban gap and inefficiency of labor migration (Meng, 2012). In addition, inequality has been aggravated due to market mechanism (Okushima & Uchimura, 2006). The market mechanism let labor mobility flow freely according to labor supply and demand, however, at the same time it caused the rich get richer and the poor get poorer. Consequently, China has two extreme aspects: One tip is filled with plenty and growth but the other is with inequality.

¹ Chinese government legislated the Hukou System (Household Registration Record) in 1958. China adopted a strategy developing heavy industry as a priority, therefore the government employed only required workforce. To avoid excess labor supply and following high unemployment, they had to control over migration between urban and rural area. According to the Hukou system, the government categorized people into urban (non-agricultural) hukou and rural (agriculture) hukou, restricting labor mobility. However, since the Hukou system was directly connected to welfare benefit, over time, it triggered various social issues.

Abundant literatures consider inequality as the worst outcomes of economic growth. Even though the reforms were a foundation for economic development and led Chinese economy to expand largely, there exist side effects of inequality while the focus of the reforms started from rural areas shifted to urban areas (Okushima & Uchimura, 2006). In fact, poverty was a big issue in the past and on the street there were many people dead by hunger. With economic growth and an increase in incomes, poverty rate visibly reduced, yet inequality became new social issues (Lee, 2016).

For a degree of inequality, Gini coefficient is a good indicator. It ranges from 0 to 1 where 0 means complete equality of income and 1 for total inequality. China's gini coefficient varies from 0.47 to 0.49, which implies that the gap between the rich and the poor is considerable. After 2008, the coefficient has been decreased, implying that income discrepancies become narrowed.

Table 2-1 China's Gini Coefficient

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
0.485	0.487	0.484	0.491	0.490	0.481	0.477	0.474	0.473	0.469

Source: National Bureau of Statistics of China (NBS)

Inequality in China is widespread regardless of regions. China has a high level of territorial inequality compared to other Organization for Economic Cooperation and Development (OECD) countries (Lee, 2016). Okushima & Uchimura (2006) referred that during the reforms people and regions were offered in-equivalent opportunities. Chinese government pursued a strategy of uneven development and gave a priority to be developed to some coastal areas. Consequently, this policy widened the gap between coastal and inland areas. The labor productivity and employment level in the provinces located southeast areas showed above the national average, while inland areas which were neglected from the developmental strategy comparatively lagged behind (Lee, 2000). According to the Publicity Department of the Communist Party of China (CCPPD), possible reasons of existing regional unbalanced development

could be summarized as 1) Geographical requirements: While eastern China has a vast amount of flatland, there are mountains and desert in western China; 2) Historical perspective: Since Tang Dynasty (618~907), an economic hub became downstream Yangtze River and east coastal area; 3) Political factor: The government implemented a policy which invested in east part of China first (Lee, 2016).

2.2. Education, Employment, and Wage

“Human capital” is newly developed since 1950s in labor economics. In human capital theory, human is considered as a capital which could increase productivity through investment. Once investment is accumulated, the value of human increases. Even though human capital is intangible, it appears as outcomes of investment. Investment in human is basically done by education. In other words, education is regarded as investment which could bring higher value and earnings (Schultz, 1961; Becker 1964). It makes people’s knowledge and abilities become abundant (Diaconu, 2014). In addition, the returns to education have been growing (Zhang et al., 2002). Investment in human capital, from the perspective of the long-term, is more valuable for economic growth and marginal productivity than natural and physical capital.

There is considerable amount of literatures which conducted relationship between education and employment. Pascarella & Terenzini (2005) found out that the level of education attained affects occupations and there exists an advantage over higher education. Diaconu (2014), through a case study of Romania, stated that employment was shown the highest percentage at university graduates group and people who attended until lower secondary education seemed to struggle to get a job. Zhang et al. (2002) conducted a study with their own data on household survey collected from late 1980s to 1990s. From the study, they found relationship between education and off-farm was positive, arguing that tertiary education achievement was closely connected to employment in off-farm labor market. In addition, the real wage was likely to be higher to people whose education level is high. Soloman &

Fagano (1997) referred that when every other condition was equal, people who participated higher education earned more. It was explained that people who attained higher level of education experienced lower unemployment (Stiglitz, Sen, & Fitoussi, 2010).

However, as people who attain tertiary education increase, gap between educational levels has been emerged. Benjamin and Brandt (1997) determined that education was one of the factors which deepen inequality between rural and urban area and people with human capital were likely to earn more than those without. Zhang et al. (2012) also stated that participation of education in rural area lagged far behind the level in urban.

Chapter 3

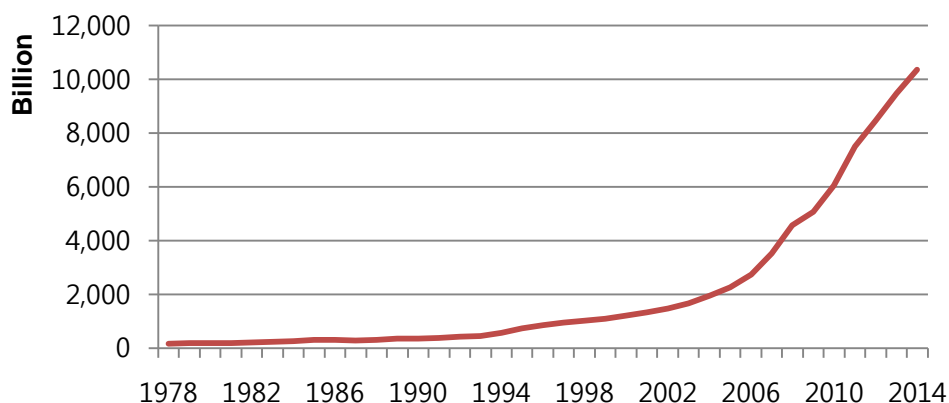
Development of Labor Market

3.1 History of China before the Economic Reform Era

Chinese economy has been developed rapidly since the economic reforms in 1978. It is explicit when we trace its GDP. As we Figure 3-1 illustrates, China's GDP has been increasing continuously from USD 148.38 billion in 1978, reaching at USD 10,354.83 billion in 2014. Even though China experienced the Cultural Revolution from 1966 until 1976, resulting a negative GDP growth rate in 1976, since 1978 the figures are above the zero as shown in Figure 3-2.

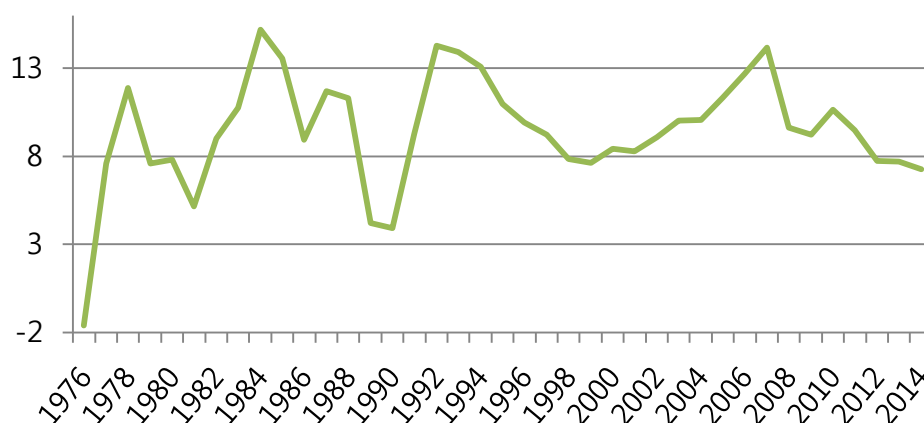
Originally the economy was far behind other countries like the United States and Japan. However, along with the shift towards a socialist market economy from a centrally planned economic system, China could have surpassed Japan's GDP in 2009 and achieved the second largest economy in the world followed by the United States. China's astonishing growth is highly associated with historical factors so that examining their history would be useful for us to analyze Chinese labor market. Then, let us date back to the reforms era.

Figure 3-1 GDP at Market Prices (Current US\$)



Source: World Development Indicators

Figure 3-2 GDP Growth Rate (%)



Source: World Development Indicators

One of the most crucial incidents as a background for the reforms is the Cultural Revolution, formally known as the Great Proletarian Cultural Revolution, which had lasted for 10 years since 1966. Previously, during the Great Leap Forward² occurred in 1958, people severely suffered from hunger or violence. In addition, this campaign of modernization led to the Great

² The Great Leap Forward is a campaign of modernization implemented by the Communist Party of China (CPC). It was forced by Mao Zedong from 1958 to 1961. In order to transform China into a modernized socialist society, Mao established impractical policies like a farm collectivization and industrialization of farming villages, ignoring current rural circumstances.

Chinese Famine, recording more than 15 million people³ starved to death. Therefore, Mao Zedong had lost his power and credibility across the country. To return to the original position of power and purge potential threats to him, Mao insisted that it is necessary for China to root out capitalism and to implant communism. Not only he encouraged students to attack teachers, professors, intellectuals and bourgeois, also made common people have hostility towards other people who pursue different thought than communism. The Red Guards were formed to support and actualize Mao's idea. They destroyed China's cultural and historical heritage as well. Even though the revolution firstly started from students, Mao later deployed the Chinese People's Liberation Army (PLA) to repress the growing riot. During this period, Chinese economy could not be developed but rather stagnated in the economic chaos.

There was also a political turmoil before the reform era. In 1976, Zhou Enlai who was in charge of premier of the People's Republic of China for 30 years was dead. It was a shock to the public since he struggled to ease Mao's radical policies within his authority and to protect people and Chinese heritages against the Red Guards. People were gathered at the Tiananmen Square in Beijing to mourn his death and express their opinion. They publicly criticized the Cultural Revolution and required resignation of the Gang of Four⁴ who led the revolution with Mao. However, Chinese government quelled the demonstration with violence, which was known as the Tiananmen Incident. Followed by those events, the Gang of Four lost their power across the country

³ This figure is quoted from the government official statistics. However, there are many arguments that the measured value is underestimated. According to Meisner (1999), 15-30 million people were dead due to the starvation. Short (2000) insisted that the number of deaths during the Great Leap Forward are correspond to 20-30 million. On the other hand, Chang and Halliday (2005) stated around 37.8 million which was broadly equivalent to half of the 70 million, the number of died people under Mao's regime, were starved to death. Meanwhile, Dikotter (2011) with newly approached archives asserted that the movement was one of the severe large-scale massacres in human history, letting at least 45 million people die due to hunger.

⁴ The Gang of Four is composed of four people who exercised their influence strongly over the Chinese Community Party. They came to power since the Cultural Revolution. Mostly they controlled the press and incited ordinary people. Jiang Qing, Mao's wife, was the leading power within the Gang of Four. Zhang Chunqiao, Yao Wenyuan, and Wang Hongwen belonged to this group.

and soon they were arrested by the new leader, Hua Guofeng who was Mao's designated successor. However, no longer than two years since Hua Guofeng seized power, Deng Xiaoping became a leading person of the Party.

3.2 Economic Reform Era and Deng Xiaoping

Deng Xiaoping who was purged twice⁵ gradually regained power after Mao's death and reinstated in 1977. He emphasized the importance of pragmatism, therefore, made an effort to transform China into socialist market economy by modifying Mao's radical communist ideology. At the third plenary session of the 11th central committee of the Communist Party of China held in 1978, he set the economic priorities as the four modernizations: agriculture, industry, science-technology, and national defence. In addition, he proposed some theories to spur further reforms, where the most famous ones, black cat, white cat theory and getting rich first theory, are below:

It does not matter if a cat is black or white, as long as it catches mice.

Let some people get rich first.

From the first idea, what Deng wanted to argue was that whether the economy system is socialism or capitalism the most important issue to deal with is an economic development. The later implies that the country permits some people and regions become prosperous first, claiming that once coastal cities located in southeastern China grow, then inland area will be developed naturally.

Apart from the transition within the country, Deng acknowledged that it is essential to adopt an open-door policy after seeing economic success of neighboring countries like Hong Kong and Singapore which introduced capitalist economy system. Therefore, he established diplomatic relations with Japan and the United States and designated four coastal cities as a Special

⁵ Deng Xiaoping was ousted twice until he returned to power in 1977. The first one was during the Cultural Revolution. The other one was in 1976. Once Zhou Enlai was dead, the Gang of Four supported Mao, while they threatened and criticized Deng fiercely.

Economic Zones (SEZs) in 1980. As long as China opened the door to foreign countries, there was a huge inflow of western countries' capital in the form of Foreign Direct Investment (FDI). Those phenomena built up a foundation for China to jump into the world and trade with various countries rather than being isolated themselves. Even though Deng was dead in 1997, China has still maintained his policies concerning the reforms and opening-up⁶ and developed based on the ideology, promoting drastic economic growth.

3.3 Current Labor Market Situation: From the Past

Chinese economy has grown up on the basis of Deng Xiaoping's policies. They adopted market mechanism to their existing economy under a new slogan "Let us make China be rich and prosperous". They chose a strategy where both capitalism and communism mixed together. Therefore, in state sector, the government controlled as before, while in non-state sector, the labor supply and demand dominated the market. Then what are the features of China's labor market?

The most important feature is segmentation between the urban and rural area. Even though currently those markets somehow interact mutually, allowing the rural workers to migrate, in the past both run in a separate way. However, over time, the labor market not only is perfectly divided into the urban-rural, also has various form based on industry sectors and ownership type.

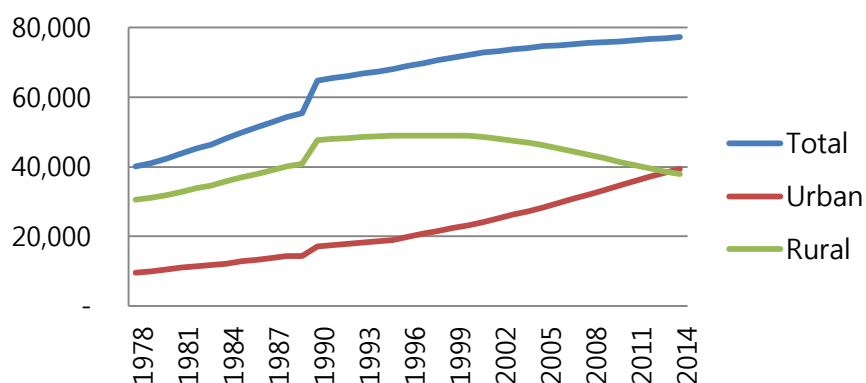
In 2014, according to the official data from NBS, total number of employed persons is 772.5 million. The number in urban area reaches 393.1 million, while in rural area 379.4 million people are employed. For further details in each year from 1978 to 2014, see Appendix 3-1.

As Figure 3-3 illustrates, the labor market expands continuously, therefore, its size increases 92.4% in 2014 compared to 1978. Since 1978, total number of people working in urban area increases gradually. On the other hand, in case

⁶ At the address for celebrating New China's sixtieth anniversary in 2009, Hu Jintao addressed that only socialism can save China and only reform and opening up can develop China.

of rural district, the declining trend from the late 1990s is closely associated to the migration to urban area. Accelerated economic growth of cities and entry to World Trade Organization (WTO) in 2001 caused labor supply for the unskilled to rise.

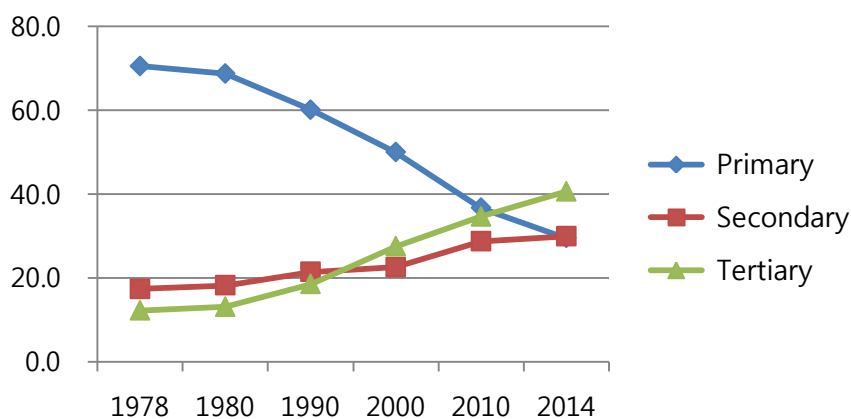
Figure 3-3 The Number of Employed Persons (in 10 thousand)



Source: NBS (various years)

Figure 3.4 shows the trend how the shares of working people in the labor market have developed over time by industries. The share of people working for primary industry decreases more than a half, accounting for 29.5% in 2014. Both secondary and tertiary industries have an upward trend, taking up 29.9% and 40.6%, respectively, though the later grows rapidly compared to the former one.

Figure 3-4 Shares of Employed Persons by Industries (%)



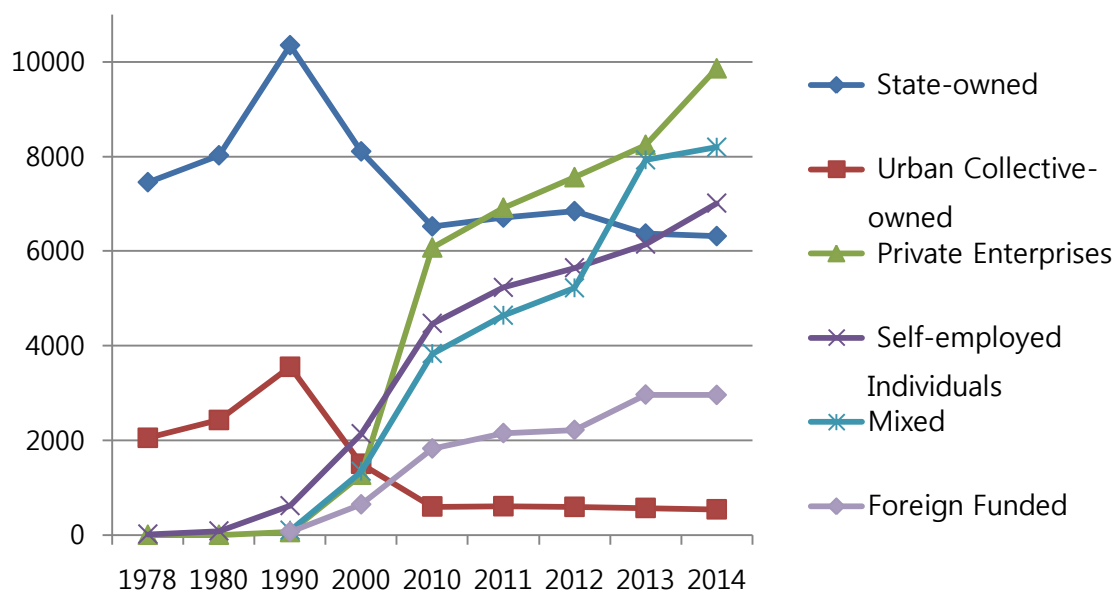
Source: NBS (various years)

Figure 3-5 displays the trend of changes in the number of persons by ownership in urban area. The number of people employed in state-owned enterprises (SOEs) reached the highest point in 1990, however, with a wide range of decline for the following ten years, the figure has been still decreasing. This change has relevance to the state-sector restructuring started from mid-90s.⁷ Urban Collective-owned Enterprises (UCEs)⁸ has a similar tendency with SOEs. Under the socialist economic system, UCEs performed as a main affiliated unit of SOEs, however, after the economic reforms, the necessity of UCEs declined, naturally losing the power within the labor market. On the other hand, the number of people working at the private enterprises has increased continuously. Therefore, this sector employs people the most, showing a remarkable growth compared to the past: 0.57 million and 98.75 million people, respectively in 1990 and 2014. When large amount of young people demoted to rural area during the Cultural Revolution returned to urban, there were few jobs available. Therefore, the government allowed self-employment and since then the number of self-employed individuals gradually rises, taking up large portion in the market. Sharp increases in private and self-employed sector especially during the period from 2000 to 2010 are because of the rural workers who were absorbed into non-state enterprises in urban. After the reforms, as many foreign countries invest and enter to Chinese market, the number of employed people in the foreign units is also increasing gradually.

⁷ During the mid-1990s, state-owned enterprises were making around 40% of losses. Therefore, in 1997 the government executed a restructuring and adopted a policy like corporatization of large state-owned enterprises and reduction of state-owned enterprises' number, stating that "Hold on to (or grasp) the large, let go of the small." This sentence implies that the government should focus on managing large SOEs and give up rights to complete control over smaller SOEs so that make them run flexibly in the market.

⁸ Urban Collective-owned Enterprises are a production unit collectively owned by local residents' community. However, UCEs are operated under the government's control and intervention.

Figure 3-5 Urban Employed Persons by Ownership Type (in 10 thousand)



Note: a) Mixed units are composed of cooperative units, joint ownership units, limited liability corporations and share-holding corporations Ltd.

b) Foreign funded units include funds from Hong Kong, Macao and Taiwan.

Source: NBS (various years)

Chapter 4

Analysis

From the previous chapter, we perceived that China has experienced substantial changes through the reforms and opening up era. In other words, China's labor market is considerably influenced by the reforms and it is irrefutable that the labor market has developed sharply.

In this chapter, we will approach labor market from three different angles: employed persons, average wage, and higher education in urban area by province. With statistical data from National Bureau of Statistics of China (NBS) during the period from 2005 to 2014, we will examine which outcomes those factors have brought to the labor market. Unlike preceding studies which mainly focused on economic analysis and verified the correlation among variables, we will put great emphasis on a historical perspective and the province.

4.1 Employed Persons in Urban Units⁹

The number of employed persons or the employment rate acts as one of

⁹ The employed persons in urban units imply total number of employees working at various units. Urban Units are composed of state-owned, urban collective-owned, and other types of ownership.

the most crucial factors to analyze labor market. In fact, it is a better indicator than the unemployment rate since for the later there might be omitted variables. For instance, a housewife or student is not counted as an official unemployment. Then, how does this factor differ by province in China's labor market?

The number of employed persons in urban units by province is illustrated in Figure 4-1. To make comparison by province perspicuously, we choose three years-2005, 2010, and 2014. In all regions except Heilongjiang, the number of people working in urban units has risen. Province Jiangsu shows the largest percentage of change, by increasing 154.8% than the figure of 2005. Following that, Guangdong and Zhejiang are ranked at the second and the third, respectively. On the other hand, in Heilongjiang, the number of employed persons decreases by 8.1% and Ningxia, Inner Mongolia are followed by. Overall, total size of employed persons in urban units in the year of 2014, when we compare it with 2005, has increased by 60.3%. The whole figures are available in Appendix 4-1.

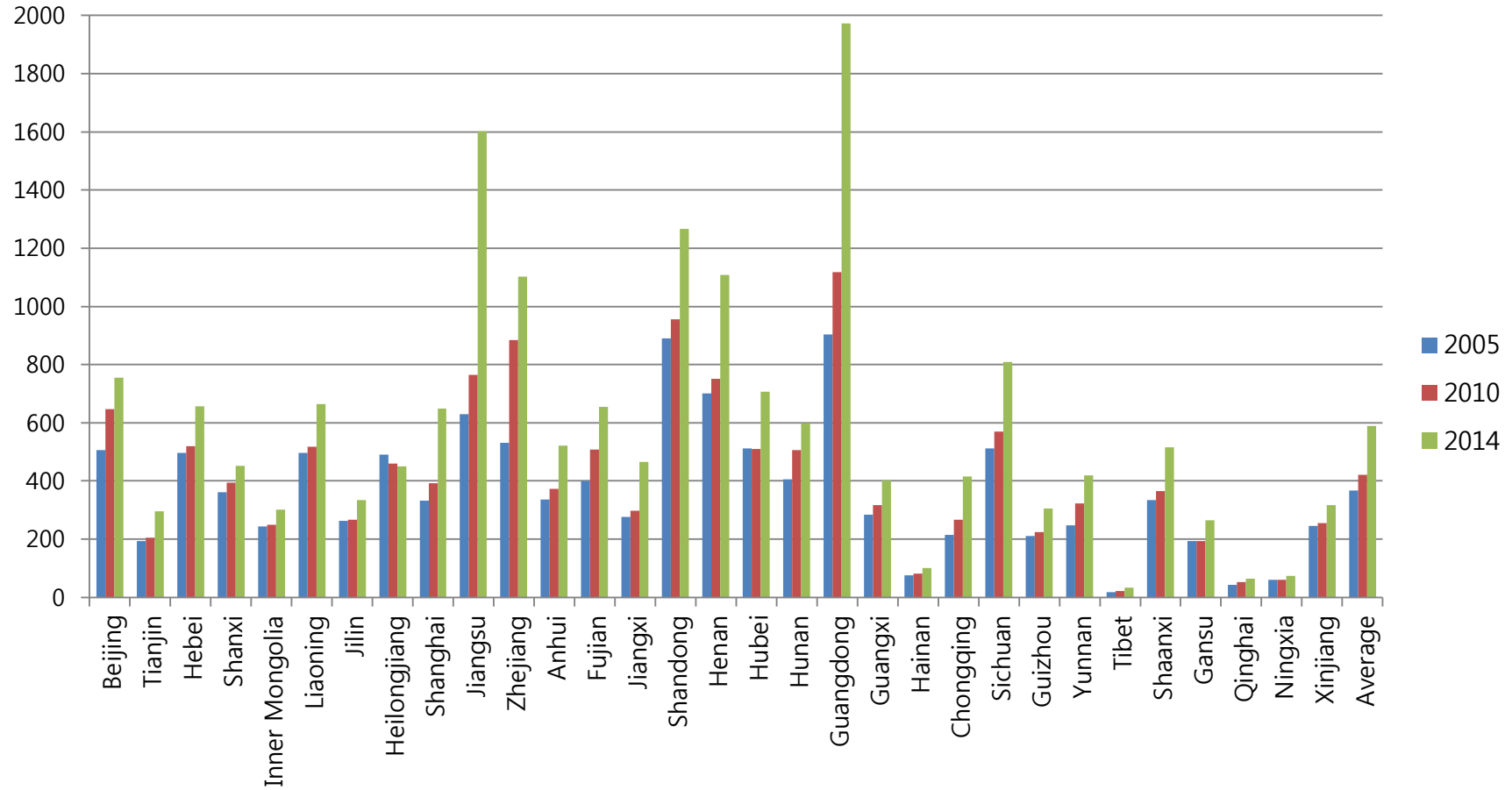
Table 4-1 Province Employed the Most and the Least

Most	2005	2010	2014
1 st	Guangdong	Guangdong	Guangdong
2 nd	Shandong	Shandong	Jiangsu
3 rd	Henan	Zhejiang	Shandong
4 th	Jiangsu	Jiangsu	Henan
5 th	Zhejiang	Henan	Zhejiang

Least	2005	2010	2014
1 st	Tibet	Tibet	Tibet
2 nd	Qinghai	Qinghai	Qinghai
3 rd	Ningxia	Ningxia	Ningxia
4 th	Hainan	Hainan	Hainan
5 th	Tianjin	Gansu	Gansu

Source: NBS (2005, 2010, and 2014)

Figure 4-1 Number of Employed Persons in Urban Units (in 10 thousand)



Source: NBS; China Statistics Yearbook 2006

Table 4-1 displays the province which employed people the most and the least. Geographically, provinces which hire many people are located along the coastal area, while those which employ relatively small are situated in west inland. This phenomenon is closely associated to permission of labor migration by the government. To achieve economic development during the reform era, the Chinese government allowed people to move to the region where labor demand is high. In addition, it implies that Guangdong, Jiangsu, Shandong and Zhejiang which lie southeast coast are typical and representative area where migrant workers flow in.

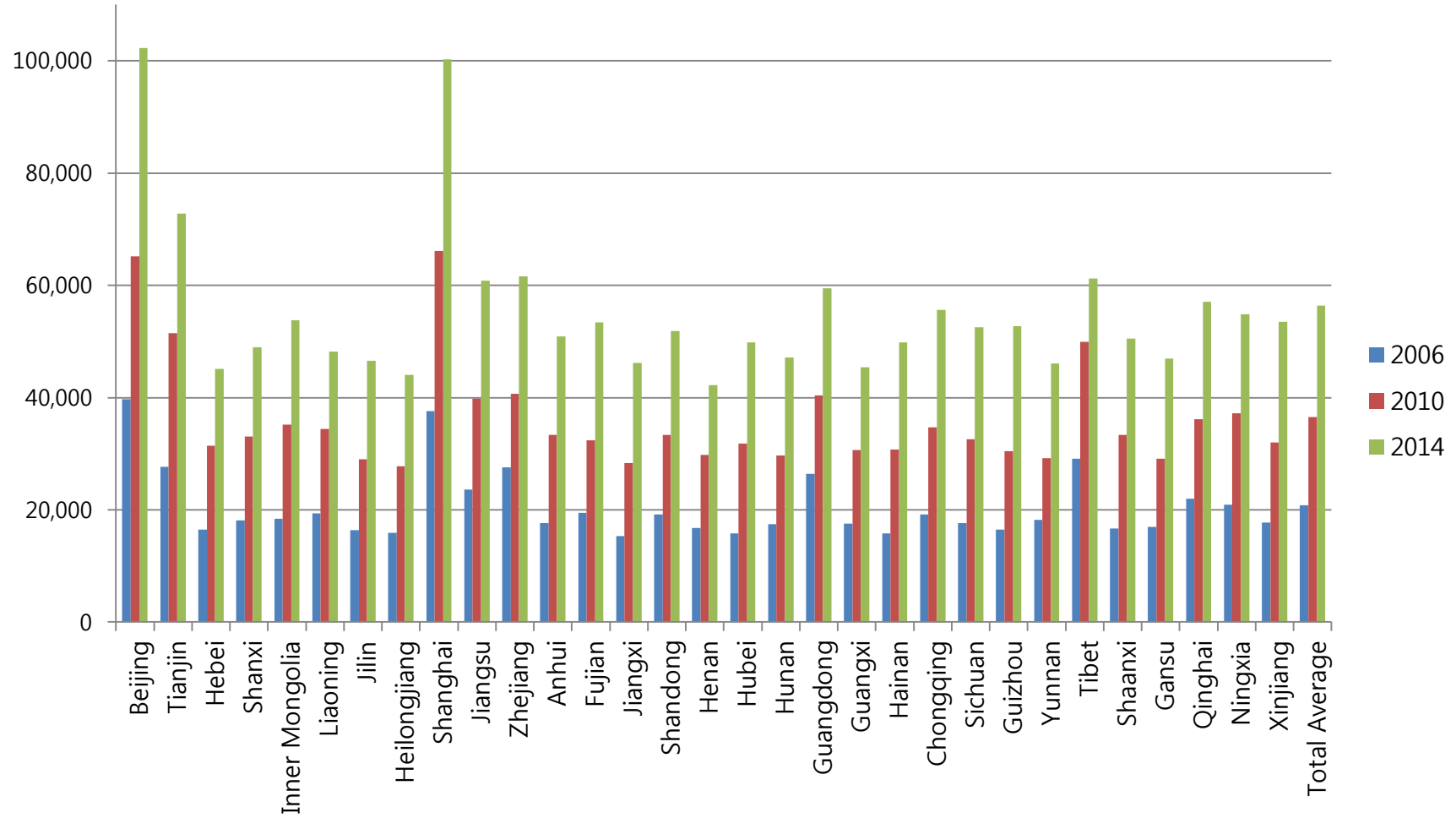
4.2 Average wage in Urban Units

Wage is a cost of labor and directly connected to people' life. It also could have a huge influence on the labor market. Under the communism, Chinese government set low-wage policy. The employer, mostly the government, did not pay much attention to whether their employees work hard or not. Therefore, for workers, there was no incentive to produce more. However, in company with the market mechanism, a market which is naturally run by the law of supply and demand has formed and people have a motive to work, therefore improving labor productivity and contributing to the development of labor market.

Figure 4-2 shows average wage of employed persons in urban units by province in 2006, 2010, and 2014.¹⁰ The total average wage in 2006 was 20,856 yuan and this value has increased 170.2%, recording 56,360 yuan in 2014. For further details, see Appendix 4-2. The provinces which present highest percentage of change between the periods of 2006-2014 are Guizhou (220.2%), Hubei, and Hainan. The lowest change is shown from Tibet (110.3), Zhejiang and Guangdong.

¹⁰ Data in 2005 is not available. Therefore, we chose data in the year of 2006.

Figure 4-2 Average Wage of Employed Persons in Urban Units (yuan)



Source: NBS

The provinces which pay the highest and the lowest average wage are written below Table 4-2. The first three provinces which record the highest average wage, Beijing, Shanghai and Tianjin, are include in China's municipalities which are operated directly under the government.

Table 4-2 Average Wage the Highest and the Lowest

Highest	2006	2010	2014
1 st	Beijing	Shanghai	Beijing
2 nd	Shanghai	Beijing	Shanghai
3 rd	Tibet	Tianjin	Tianjin
4 th	Tianjin	Tibet	Zhejiang
5 th	Zhejiang	Zhejiang	Tibet

Lowest	2006	2010	2014
1 st	Jiangxi	Heilongjiang	Henan
2 nd	Hubei	Jiangxi	Heilongjiang
3 rd	Hainan	Jilin	Hebei
4 th	Heilongjiang	Gansu	Guangxi
5 th	Jilin	Yunnan	Yunnan

Source: NBS (2006, 2010, and 2014)

4.3 Tertiary Education

Education is considered as a crucial indicator for human resources. Through education, people could broaden their options of an occupation and educational level could determine their real wages. The labor market could be differed completely depend on how to utilize education and human resources. Especially within China's labor market which has abundant potential labor forces and labor supply, the importance of education is, without a doubt, needless to emphasize. Let's take a look at how education has affected Chinese labor market.

In Figure 4-3, we can see how enrollment differs by province in each year. The enrollment for higher education in 2014 rises 63.1% than 2005. The number of enrollment increases in every province and Hainan, Ningxia and

Yunnan grows faster than others. On the contrary, percentage change in enrollment in Beijing and Shanghai is the least, indicating 10.3% and 14.5%, respectively. In Appendix 4-3, the statistics are described.

In absolute terms shown in Table 4-3, Shandong, Guangdong and Jiangsu ranks at the highest in 2014. On the other hand, in case of the least enrollment, the outcomes were exactly the same regardless of chosen years. This is related to the number of regular institution of higher education. According to NBS statistics in 2014, Jiangsu has 159 regular institutions which take responsible for tertiary education and the next highest provinces are Shandong and Guangdong with 141 establishments. While Tibet, Qinghai have only 6 and 12 higher education institutions.

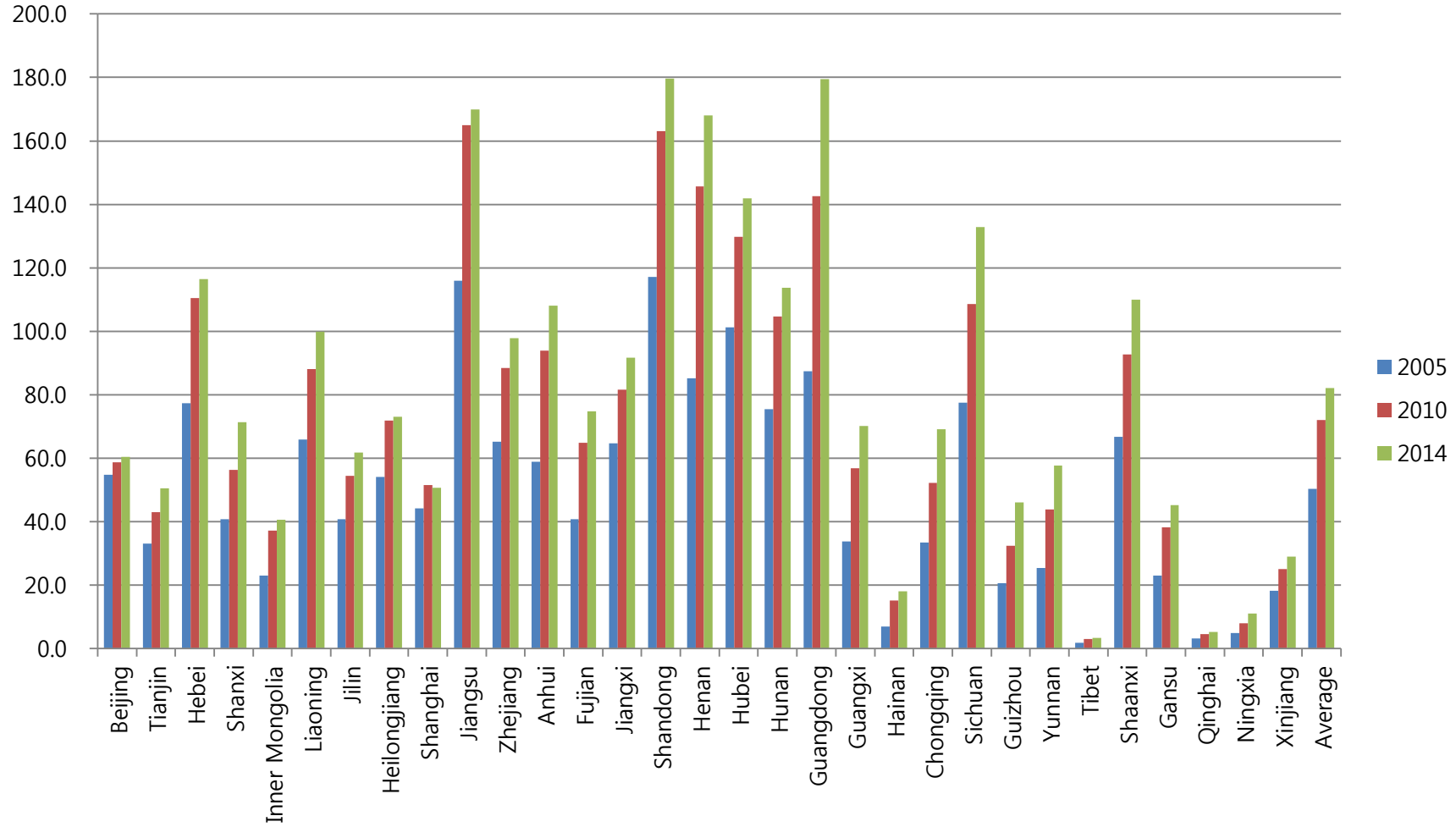
Table 4-3 Higher Education Enrollment the Most and the Least

Most	2005	2010	2014
1 st	Shandong	Jiangsu	Shandong
2 nd	Jiangsu	Shandong	Guangdong
3 rd	Hubei	Henan	Jiangsu
4 th	Guangdong	Guangdong	Henan
5 th	Henan	Hubei	Hubei

Least	2005	2010	2014
1 st	Tibet	Tibet	Tibet
2 nd	Qinghai	Qinghai	Qinghai
3 rd	Ningxia	Ningxia	Ningxia
4 th	Hainan	Hainan	Hainan
5 th	Xinjiang	Xinjiang	Xinjiang

Source: NBS (2005, 2010, and 2014)

Figure 4-3 Student Enrollment for Higher Education (in 10 thousand)



Source: NBS

Now let us turn our eyes on graduates. From Figure 4-4, it is easily observed that overall the number of graduates of higher education increases sharply. In total, compared to 2005, the number in 2014 rises 114.9%. Hainan and Yunnan provinces experience large gap between 2005 and 2014, while Beijing and Shanghai account for the lowest gap. This is similar result with the number of enrollment for tertiary education above.

Jiangsu and Shandong have been a province which produces many graduates continuously (Table 4-4). However, recently as the number of graduates from Henan increases, gap between Shandong and Henan becomes narrow. Tibet, Qinghai and Ningxia which are registered as the least enrollment have few graduates as well in each year.

Table 4-4 Higher Education Graduates the Most and the Least

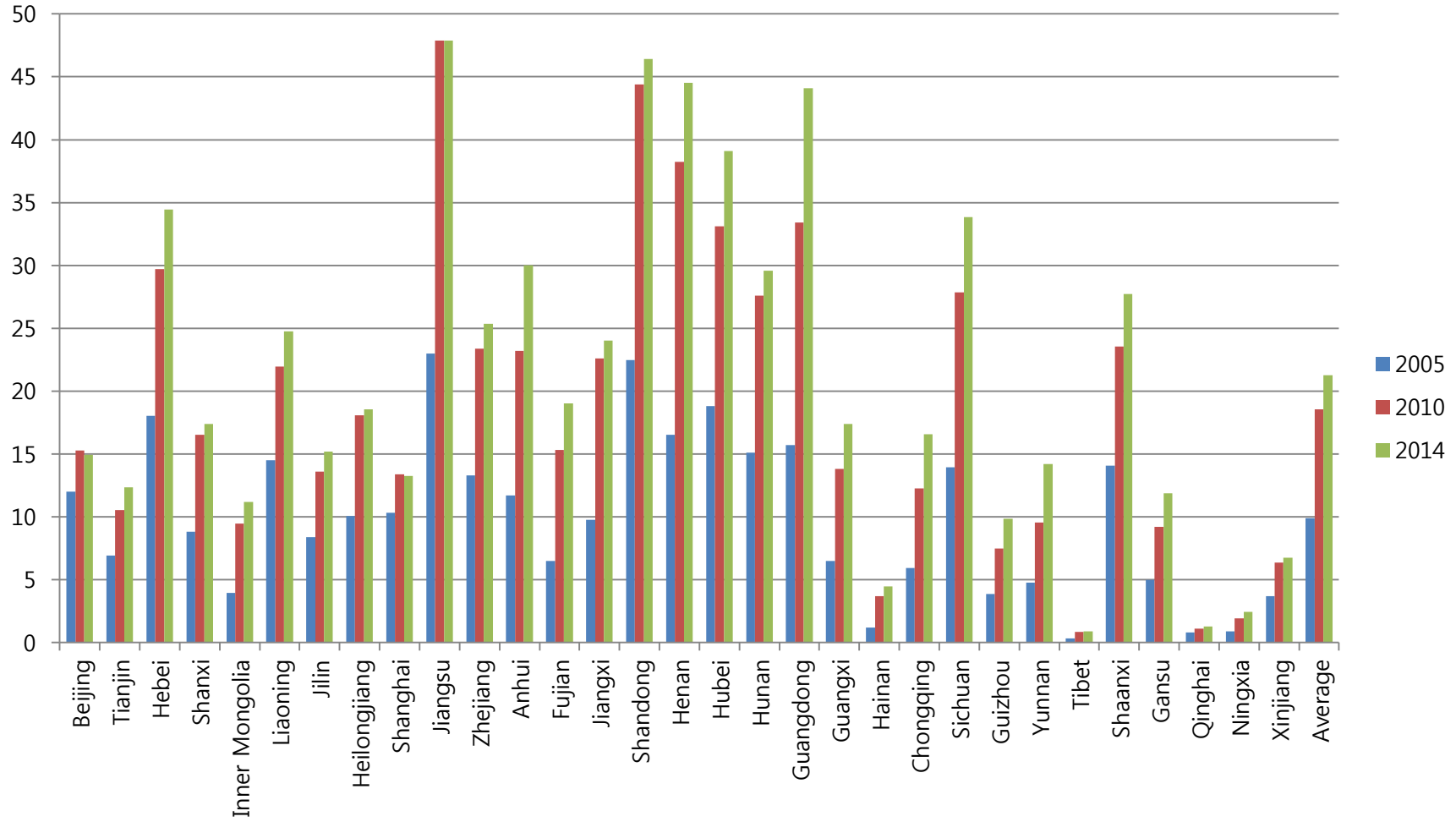
Most	2005	2010	2014
1 st	Jiangsu	Jiangsu	Jiangsu
2 nd	Shandong	Shandong	Shandong
3 rd	Hubei	Henan	Henan
4 th	Hebei	Guangdong	Guangdong
5 th	Henan	Hubei	Hubei

Least	2005	2010	2014
1 st	Tibet	Tibet	Tibet
2 nd	Qinghai	Qinghai	Qinghai
3 rd	Ningxia	Ningxia	Ningxia
4 th	Hainan	Hainan	Hainan
5 th	Xinjiang	Xinjiang	Xinjiang

Source: NBS (2005, 2010, and 2014)

When we compare enrollment and graduate in the year of 2014, overall the provinces ranked at the higher position are similar, though the ranking varies. From the perspective of graduate-enrollment ratio which is calculated based on Appendix 4-3 and 4-4, 25.9% enrolled students graduate on average. The provinces which have the highest ratio are Hebei (29.6%) and Jiangsu (28.2%).

Figure 4-4 Student Graduate for Higher Education (in 10 thousand)



Source: NBS

Chapter 5

Results and Conclusion

This thesis examined China's labor market, especially from the perspective of total number of employed persons, wages, and education with statistical data collected from 31 provinces. We wanted to study how labor market has been developed during the last ten years. Therefore we chose three different reference years-2005, 2010, and 2014.

We first investigated the process of economic development and studied Chinese modern history since China's growth was highly associated with its history. Most of policies which Chinese government implemented in the past were an optimal solution to deal with those days' issues, irrespective of the outcomes. Therefore, while we examined history of China, we could understand the political and economical circumstances. In this context, we could find background of China's reforms and growth in labor market: Why China suddenly introduced market mechanism?, Why they started to open their doors to foreign countries?, How does regional inequality emerge?.

Afterward, in the main analysis, we compared total number of employed persons by provinces and flow of time. This method was applied to other two variables. From the outcomes, it is distinctly obvious that China has a huge

disparity. It was primarily inequality between Eastern and Western China. The province which is located by east coastal area is Shandong, Jiangsu, Zhejiang, Fujian, Guangdong, Tianjin and Shanghai. On the contrary, Tibet, Qinghai, Ningxia, Xinjiang, Gansu and Yunnan are provinces situated in west part of China. In southeast regions, all variables (employment, wages, and tertiary education) were higher than the value of western area.

In detail, especially Guangdong was one of the most developed regions in China in terms of employment. Geographically Guangdong is located in very southeast of China and the region is considerably close to Hong Kong and Macao. In addition, China designated four special economic zones (SEZs) in 1980 and three zones (Shenzhen, Zhuhai and Shantou) out of four lie in Guangdong. Based on those factors, Guangdong could attract many enterprises and industries and employ the highest amount people.

Along with Guangdong, Shandong and Jiangsu are also highly developed. In both areas, employment was higher than other provinces and far above the average. Moreover, the level of education attained is relatively high. This is associated with the number of regular institutions and educational funds. According to NBS data in 2014, Gross Regional Product (GRP) value for Guangdong, Jiangsu, and Shandong is 10.7%, 10.2%, and 9.3%, respectively and those are the highest shares.

On the other hand, Tibet, Qinghai and Ningxia are provinces which relatively less developed. In terms of employment and tertiary education attainment, those regions ranked at the lowest. Moreover, they have few higher educational institutions and little amount of funds from the government. GRP value for those provinces is the lowest and it accounts for 0.14%, 0.36%, and 0.43%, respectively. Even though Chinese government struggled to reduce regional gap by implementing China Western Development (or Great Western Development Strategy) policy, still western regions lagged behind.

For average wage analysis, this kind of logic is not applied perfectly. The regions which earn the highest average wage are Beijing, Shanghai and Tianjin in order. It is a fact that those are located in eastern part of China. However, Henan, Heilongjiang and Hebei which get paid the least are not situated in west

of China. Henan is rather situated in central China and Hebei is just next to Beijing. Plus, Heilongjiang lies in the very northeast China.

Through those variables within the labor market, we confirmed that overall the southeast provinces are well-developed and equipped with social infrastructure, while west provinces have exactly the opposite features. This inequality is emerged from China's uneven regional development. Although there is a wide gap among provinces, it is true that China has undergone a marvelous growth. China's economic indicators like GDP, productivity, and trade volume have increased drastically during the last few decades and seem to rise continuously. To accelerate the economic growth, Chinese government should ease current disparity inherited from the past.

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Appendix

Appendix 3-1 The Number of Employed Persons (in 10 thousand)

	Total Number of Employed Persons	Urban Employed Persons	Rural Employed Persons
1978	40,152	9,514	30,638
1979	41,024	9,999	31,025
1980	42,361	10,525	31,836
1981	43,725	11,053	32,672
1982	45,295	11,428	33,867
1983	46,436	11,746	34,690
1984	48,197	12,229	35,968
1985	49,873	12,808	37,065
1986	51,282	13,292	37,990
1987	52,783	13,783	39,000
1988	54,334	14,267	40,067
1989	55,329	14,390	40,939
1990	64,749	17,041	47,708
1991	65,491	17,465	48,026
1992	66,152	17,861	48,291
1993	66,808	18,262	48,546
1994	67,455	18,653	48,802
1995	68,065	19,040	49,025
1996	68,950	19,922	49,028
1997	69,820	20,781	49,039
1998	70,637	21,616	49,021
1999	71,394	22,412	48,982
2000	72,085	23,151	48,934
2001	72,797	24,123	48,674
2002	73,280	25,159	48,121
2003	73,736	26,230	47,506
2004	74,264	27,293	46,971
2005	74,647	28,389	46,258
2006	74,978	29,630	45,348
2007	75,321	30,953	44,368
2008	75,564	32,103	43,461
2009	75,828	33,322	42,506
2010	76,105	34,687	41,418
2011	76,420	35,914	40,506
2012	76,704	37,102	39,602
2013	76,977	38,240	38,737
2014	77,253	39,310	37,943

Source: NBS

**Appendix 4-1 Number of Employed Persons in Urban Units
(in 10 thousand)**

Region	2005	2010	2014	Δ in Percentage (2005-2014)
Beijing	505.6	646.6	755.86	49.5
Tianjin	194.1	205.7	295.51	52.2
Hebei	495.6	519.6	656.18	32.4
Shanxi	360.5	394.4	452.09	25.4
Inner Mongolia	243	249.2	301.45	24.1
Liaoning	497.1	518.1	665.17	33.8
Jilin	261.9	267.6	334.42	27.7
Heilongjiang	490.4	460	450.88	-8.1
Shanghai	333.2	392.9	648.88	94.7
Jiangsu	628.8	763.8	1,602.40	154.8
Zhejiang	531.1	883.6	1,102.68	107.6
Anhui	335.3	372.9	521.74	55.6
Fujian	400.1	507.1	654.64	63.6
Jiangxi	275.6	297.4	465.26	68.8
Shandong	891	956.2	1,266.34	42.1
Henan	700.6	751.7	1,108.89	58.3
Hubei	511.8	510.3	706.8	38.1
Hunan	406.3	505.7	597.9	47.2
Guangdong	904.3	1,118.50	1,973.28	118.2
Guangxi	283.6	316.7	401.46	41.6
Hainan	74.7	81.3	101.52	35.9
Chongqing	215.5	266.4	414.47	92.3
Sichuan	512.7	570.6	808.75	57.7
Guizhou	210.6	224.3	304.75	44.7
Yunnan	247	322.8	419.57	69.9
Tibet	18.2	22.2	32.54	78.8
Shaanxi	334.2	364.8	516.52	54.6
Gansu	194.3	194.3	264.74	36.3
Qinghai	42.6	52.6	63.19	48.3
Ningxia	59.7	59.3	73.25	22.7
Xinjiang	244.7	255	316.65	29.4
Average	367.9	421.0	589.6	60.3
Total	11404.1	13051.6	18277.8	

Source: NBS; China Statistics Yearbook 2006

Appendix 4-2 Average Wage of Employed Persons in Urban Units (yuan)

Region	2006	2010	2014	Δ in Percentage (2006-2014)
Beijing	39,684	65,158	102,268	157.7
Tianjin	27,628	51,489	72,773	163.4
Hebei	16,456	31,451	45,114	174.1
Shanxi	18,106	33,057	48,969	170.5
Inner Mongolia	18,382	35,211	53,748	192.4
Liaoning	19,365	34,437	48,190	148.9
Jilin	16,393	29,003	46,516	183.8
Heilongjiang	15,894	27,735	44,036	177.1
Shanghai	37,585	66,115	100,251	166.7
Jiangsu	23,657	39,772	60,867	157.3
Zhejiang	27,570	40,640	61,572	123.3
Anhui	17,610	33,341	50,894	189.0
Fujian	19,424	32,340	53,426	175.1
Jiangxi	15,370	28,363	46,218	200.7
Shandong	19,135	33,321	51,825	170.8
Henan	16,791	29,819	42,179	151.2
Hubei	15,779	31,811	49,838	215.9
Hunan	17,400	29,670	47,117	170.8
Guangdong	26,400	40,432	59,481	125.3
Guangxi	17,571	30,673	45,424	158.5
Hainan	15,843	30,775	49,882	214.9
Chongqing	19,172	34,727	55,588	189.9
Sichuan	17,612	32,567	52,555	198.4
Guizhou	16,481	30,433	52,772	220.2
Yunnan	18,262	29,195	46,101	152.4
Tibet	29,119	49,898	61,235	110.3
Shaanxi	16,646	33,384	50,535	203.6
Gansu	16,991	29,096	46,960	176.4
Qinghai	21,981	36,121	57,084	159.7
Ningxia	20,900	37,166	54,858	162.5
Xinjiang	17,704	32,003	53,471	202.0
Total Average	20,856	36,539	56,360	170.2

Sourc: NBS

**Appendix 4-3 Number of Students Enrollment of Regular Institutions -
Higher Education (10 000persons)**

Region	2005	2010	2014	Δ in Percentage (2005-2014)
Beijing	54.8	58.7	60.5	10.3
Tianjin	33.2	42.9	50.6	52.5
Hebei	77.4	110.5	116.4	50.4
Shanxi	40.7	56.3	71.3	75.2
Inner Mongolia	23.1	37.1	40.6	76.0
Liaoning	65.9	88.0	99.8	51.4
Jilin	40.7	54.4	61.8	51.8
Heilongjiang	54.1	71.9	73.1	35.1
Shanghai	44.3	51.6	50.7	14.5
Jiangsu	116.0	164.9	169.9	46.5
Zhejiang	65.1	88.5	97.8	50.2
Anhui	58.9	93.9	108.1	83.4
Fujian	40.7	64.8	74.9	83.9
Jiangxi	64.6	81.7	91.6	41.8
Shandong	117.1	163.1	179.7	53.4
Henan	85.2	145.7	168.0	97.2
Hubei	101.3	129.7	142.0	40.2
Hunan	75.5	104.7	113.6	50.5
Guangdong	87.5	142.7	179.4	105.1
Guangxi	33.8	56.8	70.2	107.5
Hainan	7.0	15.1	18.1	158.0
Chongqing	33.4	52.3	69.2	107.3
Sichuan	77.5	108.6	132.8	71.3
Guizhou	20.7	32.3	46.0	122.6
Yunnan	25.5	43.9	57.7	126.5
Tibet	1.9	3.1	3.4	76.3
Shaanxi	66.7	92.8	110.0	64.9
Gansu	23.0	38.2	45.2	97.1
Qinghai	3.3	4.5	5.3	61.3
Ningxia	4.9	8.0	11.1	128.7
Xinjiang	18.2	25.1	29.0	59.7
Average	50.4	72.0	82.2	72.6
Total	1561.8	2231.8	2547.7	63.1

Source: NBS

**Appendix 4-4 Number of Graduates with Degrees or Diplomas in
Institutions of Higher Education (10 000persons)**

Region	2005	2010	2014	Δ in Percentage (2005-2014)
Beijing	12	15.3	14.9	24.3
Tianjin	6.9	10.5	12.4	78.5
Hebei	18.0	29.7	34.5	91.0
Shanxi	8.8	16.6	17.4	97.2
Inner Mongolia	4.0	9.5	11.2	182.8
Liaoning	14.5	22.0	24.8	70.7
Jilin	8.4	13.6	15.2	80.7
Heilongjiang	10.1	18.1	18.5	83.9
Shanghai	10.3	13.4	13.2	28.0
Jiangsu	23.0	47.9	47.9	108.4
Zhejiang	13.3	23.4	25.4	90.6
Anhui	11.7	23.2	30.0	156.3
Fujian	6.5	15.3	19.0	193.4
Jiangxi	9.8	22.6	24.0	145.7
Shandong	22.5	44.4	46.4	106.6
Henan	16.5	38.3	44.5	169.6
Hubei	18.8	33.1	39.1	108.0
Hunan	15.1	27.6	29.6	96.0
Guangdong	15.7	33.4	44.1	180.7
Guangxi	6.5	13.8	17.4	168.3
Hainan	1.2	3.7	4.5	279.7
Chongqing	5.9	12.3	16.6	179.1
Sichuan	13.9	27.9	33.9	143.1
Guizhou	3.9	7.5	9.9	154.8
Yunnan	4.8	9.5	14.2	197.7
Tibet	0.3	0.8	0.9	184.4
Shaanxi	14.1	23.6	27.7	97.3
Gansu	5.0	9.2	11.9	137.9
Qinghai	0.8	1.1	1.3	54.9
Ningxia	0.9	1.9	2.5	178.4
Xinjiang	3.7	6.4	6.8	82.9
Average	9.9	18.6	21.3	127.4
Total	306.8	575.4	659.4	114.9

Source: NBS