

Effects of Industrial Restructuring on the Employment Structure in China

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The relationship between China's industrial and employment structures has been analyzed in views of both the sector and division levels on the basis of the industrial development and employment data from 2003 to 2014, using the correlation coefficient, structure deviation, labor productivity, and employment flexibility as indicators. The analysis shows that in a sector level, the workforce is being extruded from the primary sector, while the secondary and tertiary sectors have been absorbing working population. Moreover, in a division level, the output value growths in the real estate, construction, accommodation and catering, transportation, storage and postal service, and wholesale and retail divisions can exceedingly stimulate the employment in such divisions, while the increase in production values of the finance, industry and other business divisions can steadily promote the employment. However, no employment promotion can be made from the agriculture, forestry, animal husbandry, and fishing division. At last, reasonable policy suggestions have been offered on the basis of the analysis results.

Keywords: industrial structure, employment structure, structure deviation, labor productivity, employment flexibility

Introduction

The economy of China is now going through the critical stage of strategic transition. It has been proposed in the 13th Five Year Plan that as the economic development of China has entered the New Normal, priority shall be given to employment and no efforts shall be spared to overcome the structural contradiction of employment, while wise adjustments shall be done on the industrial structure. Hence, it is of utmost importance to discuss the

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coordination between the employment structure and the industrial structure under the new normal of Chinese economic development. Promoting the coordinated development of the industrial and employment structures is the essential way to realize the optimization of the industrial structure and full employment of the workforce.

Scholars in China and other countries have studied the relationship between the industrial and employment structures. In 1940, Clark (1940) proposed the Petty-Clark's law, which says that the labor force first transfers from the primary sector to the secondary sector, and then moves towards the tertiary sector and ultimately comes into even developments in all three sectors, as the per capita national income increases. Afterwards, the Kuznets theorem was proposed (Kuznets, 1971), which argues evolution of the industrial structure would be driven by the per capita national income and emphases should be made on the non-agricultural development for the developing countries so as to narrow their economic gaps with developed countries. Chenery and Syrquin (1988) have studied the economic growth factors of various countries in the world and found that the transitions of the industrial and employment structures were basically synchronized in the developed countries, while in developing countries, the upgrading of the industrial structure proceeds faster than that of the employment structure.

Discussions have been made by Chinese scholars on the relationship between the industrial and economic structures. Zhao and Liu (2010) conducted a correlation analysis on the industrial and employment structures, on the basis of statistics of employed personnel in urban units from 2004 to 2009. Results have shown that the employment of urban population could be boosted in the future by raising up the value-added; the industrial upgrading of the primary sector was not capable of employment promotion, while the labor-absorbing capacity of the tertiary sector exceeds that of the secondary sector; the construction business, health, social security and social welfare business, water conservancy business, environmental business and the public facility management business possessed huge potentials for employment growth, the business of scientific researches, and technical services, and geological surveys follows; the employment increase capacity of the leasing and commercial services was great, and the manufacturing, education and public administration business, and social organizations should keep developing with a steady pace. J.-X. He and Y. He (2013) have analyzed the relationship between the employment structure variation and the industrial structure in China from 1978 to 2010 in terms of the industrial deviation. It was shown that during this period, the shares of the output as well as the employment of the primary sector both declined, while those of the secondary and tertiary sectors all grew. The national economic structure of China has been through a positive development since 1978. However, the primary sector has absorbed excessive labor forces, which were not sufficiently utilized, while the secondary and tertiary sectors lacked in employment flexibility, and in such sectors the labor-absorbing capacity per unit industrial output value was not fully exploited. Consistent conclusions have been made by Wang and Huang (2014), Duan (2016), Fang and Han (2013), and Huang (2008). Jing (2016) qualitatively analyzed the evolution tendencies of the Chinese industrial and employment structures from 1978 to 2014, and the coordination between the two aspects in a sector-level view, concerning the structure deviation, employment flexibility, and labor productivity. It is found that the developments of the industrial and employment structures are closely related to each other, and at the present stage, the evolution of the Chinese industrial structure outruns the upgrading of the employment structure. In a sector level, the development coordination of the two is relatively poor in the primary sector, while that of the secondary sector is capable of further improvement and that of the tertiary sector is the best among the three. Jing and Zhang (2015) quantitatively studied the coordination between the employment and industrial structures from 1980 to 2013 using the correlation coefficient and

structure deviation. The employment structure is mainly controlled by the variation in the industrial structure, and yet the industrial structure change has double effects on the employment structure, namely, labor-extrusion and absorption. On the other hand, the alteration in the employment structure can damp or stimulate the transformation of the industrial structure. Ma and Xing (2011) have used the input-output method to shed light upon the relationship between China's industrial and employment structures. It is shown that the industry, the freight transportation, post and telecommunications business, and the commercial catering business, have the largest capacities to bring along other business as well as take in the working population. On the basis of the panel data of 31 provinces in China from 2000 to 2009, Wei and Gong (2012) have analyzed the relationship among the technical advancement, industrial structure, and employment structure. It is pointed out that a long-term equilibrium exists among the three factors, and meanwhile the technical improvement and industrial structure upgrading are the main reasons for regional employment differences.

The previous studies on the interaction between the industrial and employment structures provide massive meaning findings. However, most of these researches carried out their analyses in a sector level, and seldom from perspectives of specific business. Therefore, this paper analyzed the relationship between the sector and corresponding subordinate division structures, from both the sector- and business-level points of view. The findings of this paper offer reasonable suggestions for the coordinated development of China's sector and division structures.

Evolution Processes of China's Industrial & Employment Structure

It can be seen from Figure 1 that the constant price gross domestic product (GDP) of China increases from 13.66 trillion RMB in 2003 to 39.01 trillion RMB in 2014, with an annual growth ratio of 10.01%, on the basis of the price in 2003. As for the industrial structure, the value-added of the primary sector grows from 1.70 trillion RMB in 2003 to 2.75 trillion RMB in 2014, with an annual growth of 4.49%; that of the secondary sector from 6.21 trillion RMB in 2003 to 19.03 trillion RMB in 2014, with an annual increase of 10.71%; that of the tertiary sector from 5.75 trillion RMB to 17.23 trillion RMB in 2014, with an annual growth of 10.50%. The industrial proportions, namely, the GDP shares of the three sectors, are respectively 12.4: 45.5: 42.1 in 2003, which change into 7.0: 48.8: 44.2 in 2014. The industrial proportion of the primary sector decreases by 5.4%; that of the secondary sector grows by 3.3%; that of the tertiary sector rises by 2.1%. Comparatively speaking, the industrial proportion of the primary sector encounters the largest decrease, while that of the secondary sector grows rapidly, and the industrial proportion increase ratio of the tertiary sector is slightly lower than that of the secondary sector. In regards to the working population in China, it grows from 109.70 million in 2003 to 182.78 million in 2014, with an annual increase ratio of 4.75%. The annual growth ratio of the working population of each sector is respectively -4.72%, 6.47%, and 3.76%. Moreover, in 2003, the employment proportion, namely, the shares of employment population of each sector are respectively 4.42: 41.93: 53.65 in 2003 and 1.56: 50.14: 48.30 in 2014, which leads to added percentages of -2.86, 8.21, and -5.35. It is indicated that the employment proportion of the primary sector in China has been slowly decreasing, while the employment proportion decline rate of the tertiary sector is slightly higher than that of the primary sector. The increase magnitude of the employment proportion of the secondary sector is 2.5 times of that of its industrial proportion in the corresponding period, which suggests that the secondary sector possesses a relatively high labor-absorbing capacity. Moreover, the labor-absorbing capacity of the tertiary sector is declining, although it seems that it is also capable of absorbing manpower. When it comes to the primary sector,

labor forces have been squeezed out. The above conclusions are basically in accordance with those of many researchers such as Ma (2016).

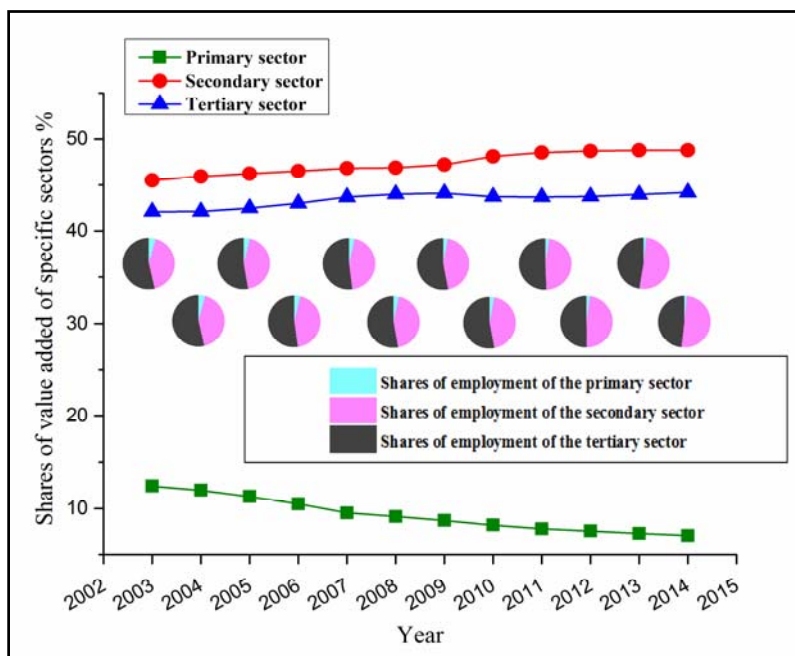


Figure 1. Evolution of China's industrial and employment structures from 2003 to 2014. Notes. Scattered lines refer to the value-added variation tendencies of each sector, %; Pie charts reflect the changes in shares of employment of each sector with time, %.

Data Sources and Selection

The statistical targets of the “employment population by divisions” in the China Statistical Yearbook have been narrowed from the original “national working population” to “working population in urban units” since 2003. To enhance the practical significance of this research, the working populations in urban units by divisions from 2003 to 2014, where the statistics of working population is recorded in 10 thousand people, have been chosen as the sample interval. First, the sectors and divisions have been defined according to the China Statistical Yearbook 2014 and the National Economical Industry Classification, as is shown in Table 1. To ensure the consistency in data calculation, the GDP and value-added of each divisions are the annual fixed-price GDP (with 2003 set as the baseline), and correspondingly recorded in trillion RMB.

Table 1

Sector and Division Classification

Name	Definition	Classification	Data source & classification criteria
Sector	Referring to the set or system of economic activities that shares a specific common attribute	Mainly including the primary sector, the secondary sector, and the tertiary sector	National economical industry classification (GB/T 4754-2011)
Division	Consisting of all enterprises and public institutions in the national economy involved in a particular economic activity, according to specific division of labor	Primary sector (1 division): agriculture, forestry, animal husbandry, fishing, and water conservancy Secondary sector (2 divisions): industry; construction Tertiary sector (6 divisions): finance; accommodation & catering; real estate; transportation, storage & postal service; wholesale & retail trades; other business	China Statistical Yearbook (2014)

Correlation Analysis on China's Industrial and Employment Structures

Correlation Coefficient Analysis

Before efforts shall be made to reveal the correlations between the industrial and employment structures, the existence of such correlation must be identified first. With the help of E-view 8.0, the correlation coefficients between each sector/division and corresponding employment were used to demonstrate their correlations, on the basis of the GDP and employment of the three sectors and sub-divisions from 2003 to 2014. The correlation test results of the value-added and employment of each sector are shown in Table 2; those of each subordinate division are shown in Table 3.

Table 2

Correlation Tests of Value-Added and Employment of the Three Sectors in China

	GDP	Primary sector	Secondary sector	Tertiary sector
Correlation	0.9370	-0.9909	0.9278	0.9553
T-statistic	8.4786	-23.2247	7.8671	10.2149
Probability	0.0000	0.0000	0.0000	0.0000

It can be seen from Table 2 that the GDP and employment of China have a positive correlation, with a correlation coefficient of 93.7%, which means the growth of China's GDP can enhance the country's domestic employment. When it comes to the specific sector, the correlation levels between the value-added and employment of each sector are listed in descending order: primary sector, -99.09%; secondary sector, 92.78%; tertiary sector, 95.53%. The value-added and employment in the primary sector have a negative correlation with a coefficient of 99.09%, which indicates that as the output value of the primary sector increases, the employment in this sector goes down. The correlations of the secondary and tertiary sectors are positive, respectively with coefficients of 92.78% and 95.53%, which correspondingly suggests that the output growths in these two sectors would stimulate the employment in the sectors. The correlation coefficient of the secondary sector is the lowest among the three in terms of absolute values, and hence the correlation between the value-added and employment in the secondary sector is the lowest. That is to say, with an increasing output value of each sector, the corresponding variation in employment of the secondary sector is smaller than those of the primary and tertiary sectors.

Table 3

Correlation Tests of Value-Added and Employment of Each Sector Division in China

	Agriculture, forestry, animal husbandry & fishing	Industry	Construction	Finance	Accommodation & catering	Real estate	Transportation, storage & postal service	Wholesale & retail	Other business
Correlation	-0.9909	0.9364	0.9201	0.9886	0.9010	0.9000	0.7527	0.7524	0.9862
T-statistic	-23.2494	8.4400	7.4304	20.7963	6.5687	6.2600	3.6153	3.6118	18.8347
Probability	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0047	0.0048	0.0000

As for specific subordinate divisions, the value-added of each sector division does remarkably correlate with the employment of the corresponding division, with the probabilities less than 5%. The test results are shown in Table 3. The negative correlation between the value-added and employment in the agriculture, forestry, animal husbandry and fishing division is the highest in terms of the absolute value of the correlation

coefficient of -99.09%. Next highest levels with correlation coefficients beyond 95%, go to the positive correlations of the divisions of finance and other business, respectively. Positive correlations are also seen in the industry, construction, accommodation and catering, and real estate divisions, with correlation coefficients over 90%. The correlation coefficients of the positive relationships between value-added and employment in the transportation, storage and postal service, and wholesale and retail trades are the lowest, which are still surpassing 75%. Hence, it is safe to say that the industrial and employment structures of China are highly correlated with each other.

Structure Deviation Analysis and International Comparison

The structure deviation refers to the ratio of the GDP shares of a specific sector/division to the employment shares of the same sector/division, which is a balance indicator of the industrial and employment structures of the sector/division in question. Higher structure deviation indicates imbalance between the industrial and employment structures (Zhu & Qiao, 2014; Wang, Shi, & An, 2015). The structure deviation can be calculated using the following equation:

$$D_i = B_i - 1 = \frac{P_i}{E_i} - 1 = \frac{\frac{G_i}{G}}{\frac{L_i}{L}} - 1 \tag{1}$$

where,

D_i is the industrial structure deviation of i (a specific sector or sector division); P_i is the shares of i in terms of GDP; E_i is the shares of i with regard to employment population; G_i is the output value of i ; G is the total output value; L_i stands for the working force in i ; L represents the total working force. $D_i = 0$, indicates that the industrial and employment structures are in equilibrium state, while $D_i > 0$ leads to a relatively higher labor productivity and inward labor transfer in this sector/division, and $D_i < 0$ suggests a relatively lower labor productivity and outward labor transfer.

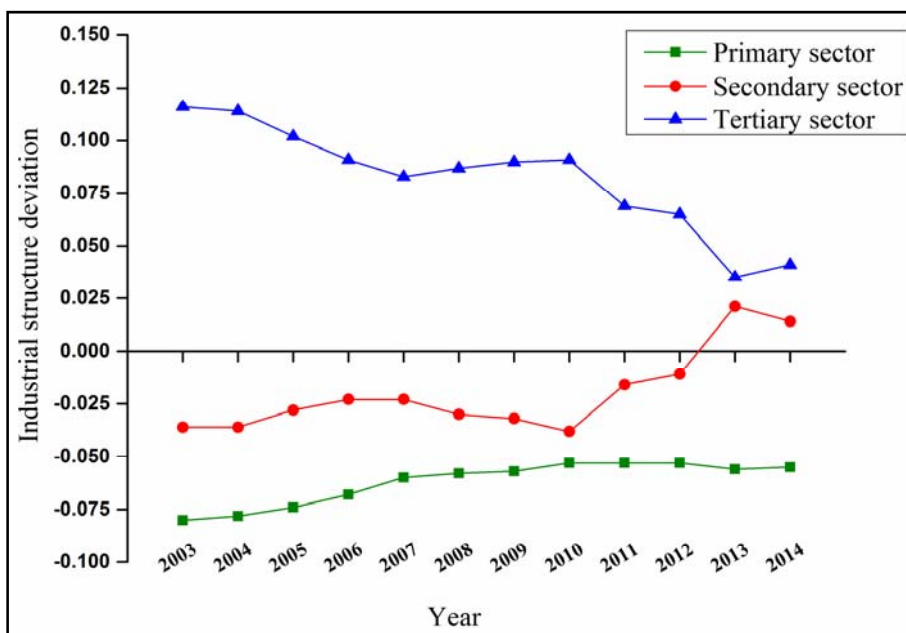


Figure 2. Structure deviation of China's three sectors from 2003 to 2014.

It is shown that from 2003 to 2014, the labor productivity of China's primary sector is relatively low, and the labor force is always flowing out from this sector, while the variations are slowly narrowing. On the contrary, the labor productivity of the tertiary sector is relatively high, the working force continues to flow into this sector and yet the variations are apparently declining in magnitudes. As for the secondary sector, from 2003 to 2012, the labor force is leaving the sector and has reversed its direction since the middle 2012 to transfer into this sector.

Table 4

International Standard Patterns of the Industrial Structure Deviation Proposed by Chenery, Elkington, and Simons (1970)

Per capita GDP (USD in 1964)	Structure deviation (%)			
	Primary sector	Secondary sector	Tertiary sector	Total
100	21.8	-3.9	-17.8	43.5
200	22.7	-3	-19.7	45.4
300	19.5	-2.6	-16.9	39
400	16.9	-2.1	-14.8	33.8
600	13	-1.4	-11.6	26
1,000	10	-0.7	-9.3	20
2,000	7.4	0	-6.4	13.8
3,000	-1.5	1.2	2.9	5.6

Source: Chenery, Elkington, and Simons (1970). Uniform analysis of development pattern. *Economic Development Report*. Harvard University Center for International Affairs. Cambridge, Massachusetts.

Economists' studies on the relationship between the value-added and working population of the three sectors in various countries have yielded three international standard patterns of the industrial structure deviation development, namely, Kuznets's pattern based on USD in 1958, Chenery et al.'s pattern based on USD in 1964 (1970), and Syrquin and Chenery's pattern based on USD in 1980 (Syrquin & Chenery, 1989). This paper took the Chenery, Elkington, and Simons's pattern (1970) based on USD in 1964 as an example to compare China's industrial structure deviation with the international standard pattern, as is shown in Table 4. In 2014, the per capita GDP of China is 46,628 RMB (Data source: the National Bureau of Statistics of China), which can be converted into 7,590 USD according to the annual exchange rate of 1: 6.143 in 2014. The average annual inflation rate for the 50 years is 3.5535%, calculated on the basis of the US GDP deflator (Data source: the World Bank database), according to which China's per capita GDP in 2014 equals to 1,324 USD in 1964. The theoretical standard industrial structure deviations calculated by using the linear interpolation, corresponding to per capita income of 2,520 USD are -5.5%, -1.6%, 4.1%, and 11.2% (respectively for the primary, secondary, tertiary sectors, and the whole economy), while the actual industrial structure deviations of China are -5.5%, 1.4%, 4.1%, and 11%. This indicates that the per capita income of China is about half of the corresponding international standard value, and yet the industrial structure deviation of each sector is basically in accordance with the international standard pattern. More specifically, the structure deviations of the primary and tertiary sectors are highly consistent with the international standard values, while the industrial structure of China's secondary sector is superior to the international standard.

Figure 3 shows that the structure deviations of construction and other business are positive. The structure deviation of construction is relatively stable from 2003 to 2010 with values around 0.03, rapidly increases from 2010 to 2013, and then slightly declines in 2014. It is suggested that the labor force is continuously flowing into

the construction division from 2003 to 2014, and moreover the labor-absorbing capacity of this division has been greatly growing since 2011. This rapid growth is mainly due to the fact that the Chinese government has been constantly improving and enriching its policy measures against the global financial crisis fully-blown in September, 2008. New goals to further boost domestic demand and promote steady economic growth have been proposed, and in November, 2008, has come the Four Trillion RMB Stimulus Plan by the end of 2010 on the infrastructure development (Wei, 2012; Yan, Xu, & Duan, 2009; Su, Li, & Xu, 2013; Wang & Zhang, 2011). The goal to develop the engineering construction has also been emphasized in the 11th and 12th Five Year Plans of China, which further confirms the pillar position of the construction division in the national economy. By the end of 2010, the entire social population employed in the construction division has exceeded 40 million people, and the construction business has become an important division to absorb massive labor force surplus in the rural areas and drive the national economic development. In addition, a two-trillion investment program has been proposed by the Chinese government for the earthquake disaster relief and reestablishment, due to the tremendous damage of roads, bridges, and city infrastructures caused by the severe earthquake with a magnitude of eight that hit Wenchuan County, Sichuan Province, China in 2008 (State Council of People’s Republic of China, 2008).

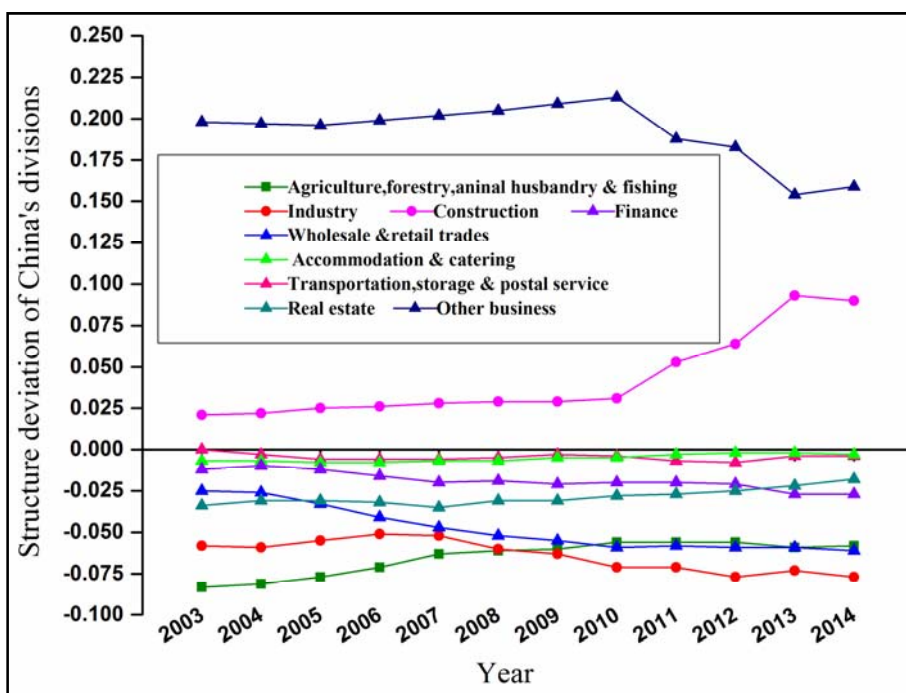


Figure 3. Structure deviations of major divisions of China from 2003 to 2014.

The structure deviations of the agriculture, forestry, animal husbandry and fishing, industry, finance, wholesale and retail, accommodation and catering, transportation, storage and postal service, and real estate divisions are all negative with absolute values lower than 0.1, which suggests in these divisions exist minor extrusion of labor forces. In other words, the structure deviations of these divisions are nearly zero and accordingly the industrial and employment structures of each division are basically in equilibrium state. It is also seen that most of China’s economic divisions are free from severer impacts after the outbreak of the global financial crisis, which can be attributed to the correct and timely macroeconomic regulatory of the Chinese government.

It is clear that the structure deviations of the industry, wholesale and retail, and other business divisions are declining. This, which coincides with the apparent increase in the unemployment rate of the overall social working population of China after 2008, suggests that the working force surplus has been generated in the industry and wholesale and retail divisions as they have been affected by the global economic recession. Meanwhile, the other business has been continuously absorbing the working population, although dramatic declines are seen in their absorbing capacities. However, as the global economy recovers, the structure deviation of each division presents a stabilizing or increasing tendency. By 2013, new inflection points have been observed in the finance, construction, and other business divisions one after another, which lays the foundation for the future coordinated development of various business in China.

Labor Productivity Analysis

The labor productivity refers to the ratio of production of a worker to the corresponding consumption in a given period of time, and is an economic indicator to reflect the utilization performance of social labor. The growth in the labor productivity means more goods or services and can be produced with the same amount of labor as before, which is an important index for scientific advancements (Gai, Zhu, & Shi, 2013; Chen, 2015; Han & Yang, 2014; Yang & Liu, 2012).

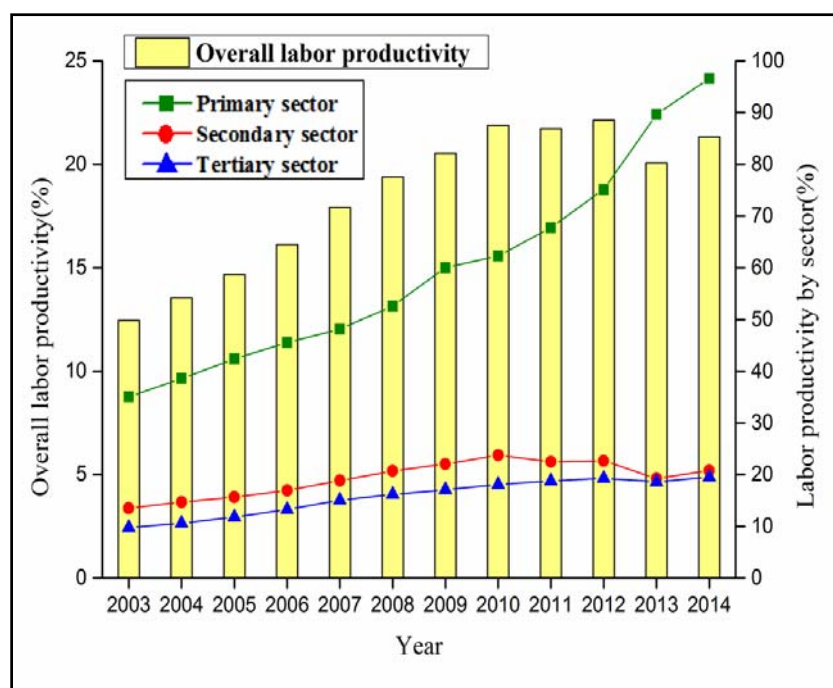


Figure 4. Labor productivity of China's three sectors from 2003 to 2014.

In a sector level, the overall labor productivity of China generally grows from 2003 to 2014 with a temporary decline in 2013 and then an increasing tendency in 2014. The labor productivity of the primary sector is continuously rising up, and reaches its peak value of 96.62% in 2014, while the labor productivity evolution of the secondary and tertiary sectors basically agree with each other. Yet the labor productivity of the secondary sector is apparently higher than that of the tertiary sector from 2003 to 2014. In general, the variation of the labor productivity of China suggests that the technology of each sector in China is improving from 2003 to 2014.

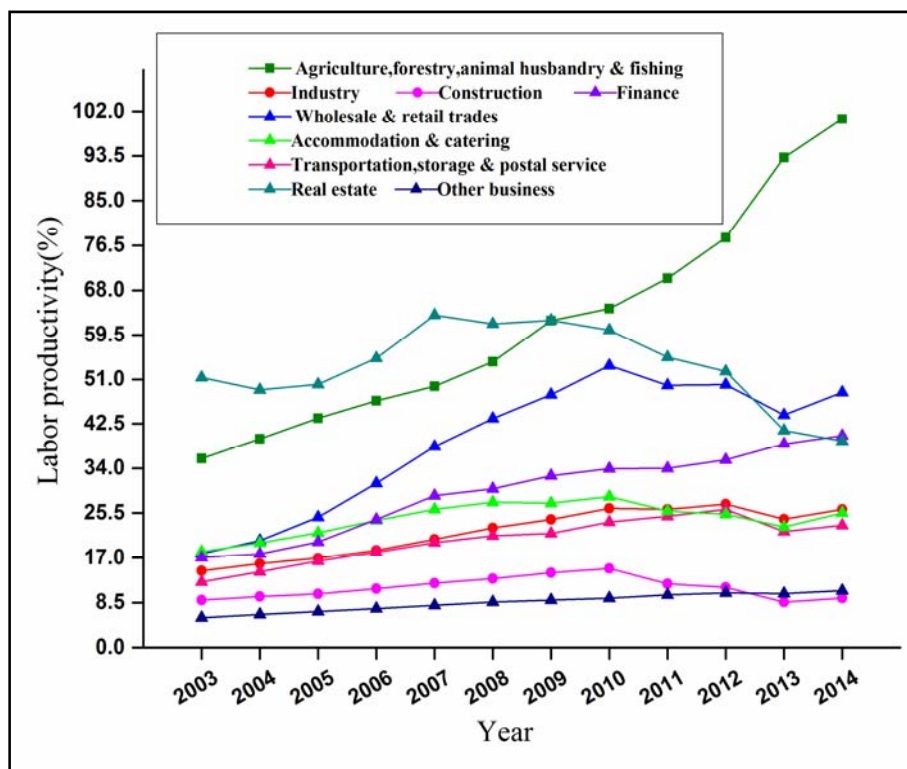


Figure 5. Labor productivity of China's major divisions from 2003 to 2014.

It is shown that the differences among the labor productivity of each division can well explain the variation of China's overall labor productivity. It is believed in this paper that the technical advancement and policy regulatory are the main drivers for the labor productivity evolution in each division, which is in accordance with the conclusions drawn by Zhu, Wang, and Xue (2008). The labor productivity variation of each division varies. The workforce productivity of the agriculture, forestry, animal husbandry and fishing, finance, and other business divisions is constantly increasing, while that of other divisions goes up and down in different periods of time. The labor productivity of the agriculture, forestry, animal husbandry, and fishing division grows the fastest, mainly because of the improvement in agricultural production technologies and wide application of agricultural machinery. With regard to the steady growths of labor productivity in the finance and other business divisions, they are mainly due to the fact the these divisions belong to the tertiary sector according to the industrial classification; compared with the developed countries, the development of China's tertiary sector relatively falls behind, and in divisions such as the finance, transportation, storage and postal service, and accommodation and catering, advanced techniques and management concepts are relatively in short, as the economy of China just reaches the medium-late stage of industrialization. This is also the fundamental reason that the 13th Five Year Plan of China calls for "optimizing the industrial structure, developing the service business and enhancing the international competitiveness".

Moreover, this paper holds that the occurrence of the inflection points in 2013, in terms of the labor productivity of the three sectors and various divisions of China, should mainly be attributed to the macro regulatory policies of the government. It is pointed out in the 3rd plenary session of the 18th central committee of the Communist Party of China that the scientific and technical innovation is the strategic support to enhancing the social productivity and comprehensive national strength, and must be put in the core position of

the big picture of the national development and used to promote the economic transformation. In September, 2014, Premier Li Keqiang further identifies the new development direction of “popular entrepreneurship and mass innovation”, which suggests that technical advancement has become the key approach of the macro regulatory on China’s development. With the efficient guiding of the country’s regulatory policies, the labor productivity of China’s sectors and subordinate divisions greatly increases in 2014.

Employment Flexibility Analysis on Each Division of China

The employment flexibility is defined as the variation of employment in percentages per one-percentage economic growth, which reflects the promotion of the economic growth on employment. Higher employment flexibility indicates a large workforce-absorbing capacity, and otherwise a small one (Li, 2013; Lai & Bao, 2011).

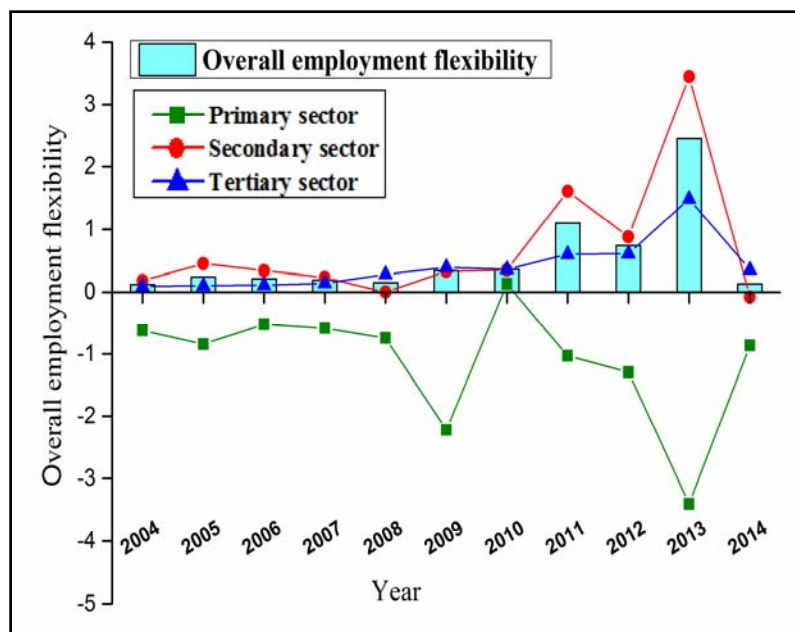


Figure 6. Employment flexibility of China’s three sectors from 2004 to 2014.

Generally speaking, the employment flexibility of China presents a positive development tendency. The employment flexibility of the secondary and tertiary sectors is both positive, while that of the primary sector stays below zero in most of the time. Also, apparent fluctuations are seen in all sectors in terms of the employment flexibility. It is indicated that workforce has been squeezed out in the primary sector, and on the contrary the secondary and tertiary sectors possess labor-absorbing potentials. Moreover, the employment flexibility of the secondary sector exceeds that of tertiary sector from 2010 and 2013. Nevertheless, the labor-absorbing capacity of China’s tertiary sector surpasses that of the secondary sector in 2014.

The division-level analysis shown in Figure 7 illustrates that the employment flexibility of the agriculture, forestry, animal husbandry and fishing division is basically negative, which agrees with results of the sector-level employment flexibility analysis. The employment flexibility of the divisions classified into the tertiary sector is generally higher than those of the divisions belonging to the secondary sector in all years except 2011. As for the real estate, construction, accommodation and catering, and wholesale and retail divisions, the flexibility has been increasing since 2011, which suggests that the value-added of these four

divisions can sufficiently stimulate the employment in such divisions. The employment flexibility of the transportation, storage and postal service division dramatically rises in 2014, mainly due to the belt and road strategic conception proposed by General Secretary Xi in 2013. Meanwhile, as part of public services, the continuous expansion of the e-commerce market over the past few years also makes contributions to the rapid growth of the transportation, storage and postal service division (Li & Liu, 2016). Although the industry division encounters employment flexibility growth in 2013, its employment flexibility magnitude is far below those of the real estate, construction, accommodation and catering, transportation, storage and postal service divisions. This is mainly because that massive outdated production capacities exist in the divisions of the secondary sector, most of which are in the updating phase from low-value to high-value. The new requirement proposed in the 13th Five Year Plan to develop the service business promotes the industrial structure (in sector and division levels) of China to transform from secondary sector-centered to tertiary sector-centered, and in the meantime eliminate the outdated capacity and optimize the industrial structure, through which the steady upgrading of China's industry can be realized and so can the health globalized development of the tertiary sector.

The analysis results show that the real estate, construction, accommodation and catering, transportation, storage and postal service, and wholesale and retail divisions possess employment potentials. The finance, industry, and other business divisions should develop with a steady pace, while the agriculture, forestry, animal husbandry and fishing division will make no promotion to the employment in the future. This conclusion is basically in accordance with that of Zhao and Liu (2010).

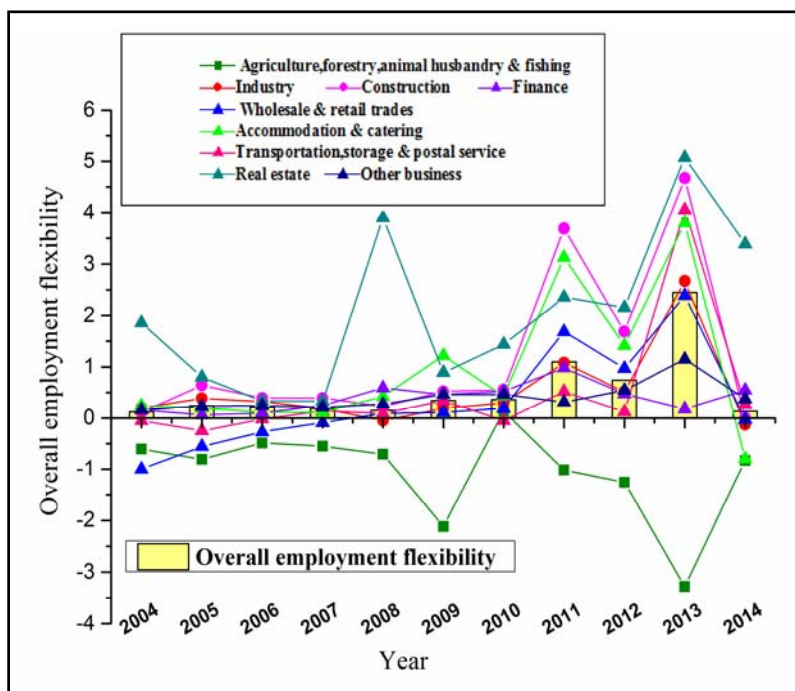


Figure 7. Employment flexibility of China's each division from 2004 to 2014.

Conclusion and Suggestion

In a sector level: a high-positive correlation exists between China's GDP and employment, which indicates that the increase in GDP can positively affect the employment of China. Also, the output values of the

three sectors are highly correlated with the corresponding employment. The value-added and employment of the primary sector have a negative correlation, while those of the secondary and tertiary sectors have positive correlations. The primary sector will be continuously dropping in employment shares, while that of the secondary sector will encounter minor growth and that of the tertiary sector will be constantly rising. This conclusion is in consistence with that of Kuznets (1971).

In a division level: the employment shares of the agriculture, forestry, animal husbandry and fishing division present a tendency of constant declining, which will lead to massive workforce surplus in the future. Moreover, the five divisions that possess the most employment growth potentials are the real estate, construction, accommodation and catering, transportation, storage and postal service, and wholesale and retail divisions, which should be given certain policy supports from the government. The finance, industry, and other tertiary sector-type divisions, should develop steadily, and the finance division has huge development space, though its labor-absorbing capacity is not high. In addition, the other divisions that belong to the tertiary sector also have great expansion potentials, mainly due to the fact that the development of China always depends on the manufacturing business and the economic divisions in the tertiary sector fall behind those of the developed countries; hence continuous efforts are required to gradually transform the development environment of China's tertiary sector from the domestic market into the global world, and China has to profoundly participate in the labor division of the global services, learn the advanced technology in the service business of other countries, and reinvent service business with its own national characteristics. As for China's industry division, outdated capacities do exist and therefore the upgrading of each production department from the low value-added to the high value-added should be boosted and backward production capacities eliminated, with the current shares of the international market maintained.

China is a vast agricultural country, where the agricultural developments in different regions greatly vary and in most regions wide application of mechanized production cannot be achieved yet due to reasons such as inferior technology and personnel talents. This can severely impact the upgrading of China's industrial structure. Accordingly, targeted professional knowledge training concerning different business in the agriculture, forestry, animal husbandry and fishing division should be offered in the countryside in order to improve the skills of the agricultural workforce. Encouragement should be made on the deep processing enterprises of agricultural products to raise up the value-added of the products and create brands with local features, which can further accelerate the development of China's agricultural and sideline products in the global market and correspondingly increase their market shares. Besides, the re-training of the surplus workforce in the primary sector should be enhanced in order to help the redundant labor force gradually transfer from the primary sector into the secondary and tertiary sectors.

Efforts should be made to improve the comprehensive personnel quality, optimize the allocation of labor resources, and ultimately cultivate specialized talents in accordance with the sector or division demand of China. Only when the supply of talents with multi-skill and multi-speciality meets the labor demand of rapidly upgrading divisions, can the various sectors or divisions of China flourish. And only when China's higher education, economy, and society have coordinated developments, can the serious difficulty that university students encounter in job hunting be sedated or fundamentally solved.

Technical improvement is the main influential factor that causes the imbalance between the industrial and employment structures. A constant coordination process between the industrial and employment structures has been created by the rapid technical growth. To begin with, the technical advancement leads to continuous

increases in the labor productivity and then the re-allocation of redundant workforce among divisions. Furthermore, technical improvement also stimulates the birth and growth of new business, which possesses large labor-absorbing capacities.

The limitations of this study can be concluded as: first, the analysis on the long-term effects of the industrial and employment structures is insufficient due to the short time span of the study samples caused by the difficulty in data-acquiring; second, this study conducts its analysis in a national level and hence lacks relevant analyses in inter-provincial and regional levels. The above limitations shall be taken into consideration and overcome in future studies.

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