Comparative Analysis of the Industrial Structure Development in China and America

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Abstract — **The performance of a country's economic development not only increases the gross national product, but is also bound to change with the development of the industrial structure. Using the industrial structure in the United States as a frame of reference in this paper, we compared China's industrial structure system to US's through specific gravity value, the proportion of employment, industrial deviation comparing labor productivity and other indicators. According to the comparison of two in the industry structure and development, it could be summed up that China's first industry proportion continued to decline, but the proportion and structure of the deviation is still high; proportion of secondary industry output value rise slowly, and manufacturing is at the bottom end of the value chain; third industry proportion is too small, and the internal structure of development is imperfect. The traditional service such as catering, wholesale and retail, is still the main issue. Then the paper proposes suggestions to continue to consolidate the status of agriculture as the foundation to improve the educational level of the rural population, restructure secondary industrial to accelerate the development of labor-intensive industries, increase investment in science and technology research; then persist in promoting the production of services, improving the internal structure of the tertiary industry. This article attempts to provide the basis and reference for the Chinese government's industrial restructuring policy.**

Keywords - Industrial structure; GDP; Employment Structure; Structure deviation degree; Comparative labor productivity.

I. INTRODUCTION

Research on industry structure development, understanding the level of the current development of China's industrial structure, is the prerequisite to solving China's industrial structure development problems. Only by analyzing deeply the development of the industrial structure, the government could develop a scientific adjustment policies, by adjusting the implementation of policies, to finish the goal of upgrading, rationalization and higher the industrial structure. The understanding of the level of industrial structure could only be explained through the comparative analysis of two different economic entities. The United States is the world's most developed country, whose economic output ranks first in the world. The advance of the industrial structure is relatively mature. Rationalization and fundamentals of industrial structure and high grade level is higher. Its sound industrial structure development model is an important reference for the development of China's industrial structure. In this paper, we use economic development and a high level of industrial structure in the United States as a frame of reference then compared the status of China's industrial structure and the status of the Industrial Structure Benefits compared to the United States'. It reveals the existing problems in the development of China's industrial structure and puts forward suggestions for improvement, which could provide the basis and reference for the government industrial restructuring policy making.

Industrial structure is an important factor affecting regional economic development. Whether a country's industrial structure is reasonable or not, is directly related to the national economic growth and sustainable development [1]. Therefore, the industrial structure has been the hot issue of the government and academic and there are many relevant research literatures. Researches have been focused on the evolution of industrial structure, upgrade of the industrial structure, the relationship of industrial structure and economic growth and so on. For example, Hoffmann carried out detailed research in the process of industrialization in his book "stage and type of industrialization" in1931. He conducted the research in the relationship of consumer goods industry's net output and capital industry net output data, which set the stage of industrial structure evolution[2]; Li Gang, Liao Jianhui, Xiang Yini (2011) made a study of the direction and paths in China's upgrading. They believes that , comparing to the countries which have similar per capita GDP to China, the proportion of China's secondary industry is not higher but lower [3]. On the other hand, Xiaonan, Zhang Xin (2012), applied the Petty - Clark Law on the research of American industrial structure changes and current status. They found that the United States' structure changes are merely the result of the movement of capital, which could not break the intrinsic contradiction of the capitalist [4]. Juan Changhao, Wang Yongjing (2014) studied the impact of China's industrial changes on China's economic growth. They described the economic system under different economic growth and industrial structure changes have greatly different performance characteristics

[5]. However, there is relatively little literature about detail and systematic analysis of China's industrial structure. Especially the ones comparing it to the current industrial structure of developed counties are extremely rare. Therefore, this article makes a compare of development status of industrial structure between China and US, which has important theoretical and practical significance.

II. CHINA AND THE US INDUSTRIAL STRUCTURE'S COMPARATIVE ANALYSIS

A. Analysis of the Economic Aggregate

In the 21st century, China has taken effective measures to cope with the huge challenges of the international financial crisis, continued to promote the development of the industrial structure, and achieves rapid and stable economic growth. According to"2013 national and social development statistics bulletin", in 2013 the total gross domestic product at current prices was 56.8845 trillion Yuan, an increase of 7.7 percent compared to last year's [6]. Among them, the primary industry was 5.6957 trillion Yuan, a growth rate of 4.0 percent, accounting for 10.0%; the secondary industry was 2.49684 trillion Yuan, accounting for 43.9%; the tertiary industry's is 29.2204 trillion Yuan, a growth rate of 8.3 percent compared to last year, the proportion was 46.1 percent.

US gross domestic product amounted to $ 16.8 trillion in 2013, equivalent to RMB 101.6659 trillion Yuan. US' primary industry added $ 201.6 billion, equivalent to 1.2199 trillion Yuan. The secondary industry added 3.3936 trillion US dollars, equivalent to 20.5365 trillion Yuan. Tertiary industry added 13.2048 trillion US dollars, equivalent to 79.9094 trillion Yuan [7].

It can be concluded that China's primary industry's value added was 5.67 times the United States; the secondary industry's value added was 1.23 times the United States; the tertiary industry's value added was 0.27 times the United States; China's total GDP is 0.32 times that of the total US GDP. US' industrial structure is already the sound mode 321, while China's industrial structure is 231 structure models, the economy is underdevelopment, and still needs to adjust and improve the industrial structure.

B. Comparative Analysis of the Proportion of Output and Employment

From the production structure, we can see that China's industrial structure is evolving in the direction of rationalization (see Table□). The proportion of primary industry is gradually reducing, whose share is less than 15%; secondary industry is mostly stable, which maintained at about 47%; the tertiary industry showed a steady trend after the first increase. In the development of three industries, the secondary and tertiary industries have been developing steadily, the proportion of secondary

output fell from 45.1% in 2001 to 43.9% in 2013, a decline of 1.2 percent; the tertiary industry rose from 40.5% in 2001 to 46.1% in 2013. The first industry shows a steady downward trend in the proportion of output, falling from 14.4 percent in 2001 to 10.0 percent in 2013, a decrease of 4.4 percentage points. The trend of output proportion in three industries is not particularly obvious, which shows that adjustment of industrial structure's adjustment is slow.

TABLE I   CHINA AND THE US SHARE OF EACH INDUSTRY OUTPUT VALUE

Years	Primary Industry		Secondary industry		Tertiary Industry	
2001	14.4	1.0	45.1	20.8	40.5	78.2
2002	13.7	0.9	44.8	20.0	41.5	79.1
2003	12.8	1.0	46.0	19.8	41.2	79.2
2004	13.4	1.2	46.2	20.3	40.4	78.5
2005	12.2	1.0	47.7	20.3	40.1	78.7
2006	11.3	0.9	48.7	20.7	40.0	78.4
2007	11.1	1.0	48.5	20.4	40.4	78.6
2008	11.3	1.1	48.6	19.8	40.1	79.1
2009	10.3	0.9	46.3	18.6	43.4	80.5
2010	10.2	0.7	46.6	16.8	43.2	82.5
2011	10.0	1.2	46.8	19.2	43.2	79.6
2012	10.1	1.2	45.3	19.1	44.6	79.7
2013	10.0	1.2	43.9	20.2	46.1	78.6

Source: ◊ 2012 China Statistical Yearbook, 2012 and 2013 National Economic and Social Development Statistics Bulletin, 2012/2013/2014 World Economic Yearbook
◊ Processed data from the US Department of Commerce and the Ministry of Labor Statistics Web site

It also can be seen from Table□, the US primary industry is very small, generally maintained at about 1%; agricultural production has been in a state of low investment and high efficiency. The proportion of secondary industry remained at around 20%, and the share of manufacturing is 19% of GDP in the United States. The highest proportion in GDP is tertiary industry, which is around 80% of the volatility. Among them, the dominant of the US economy is the service sector: the share in GDP is 78.6%.

From the three industries development level and state of view, compared with the US, China primary industry, although its share has been declining, is 10 times to the that of United States; the secondary industry remained stable, but the proportion is more than twice compared to the proportion of US; The proportion of tertiary industry is rising slowly but less than half to that of the United States.

Generally speaking, the proportion of primary industry output value is the largest, followed by the secondary industry, and lastly the tertiary industry in the economically backward countries. But in the economically developed countries, the tertiary industry is the country's pillar industry, whose output value is the largest. As we can see from Figure 1: in 2009, China's three industrial output value structures and industrial structure closer to middle-income countries.
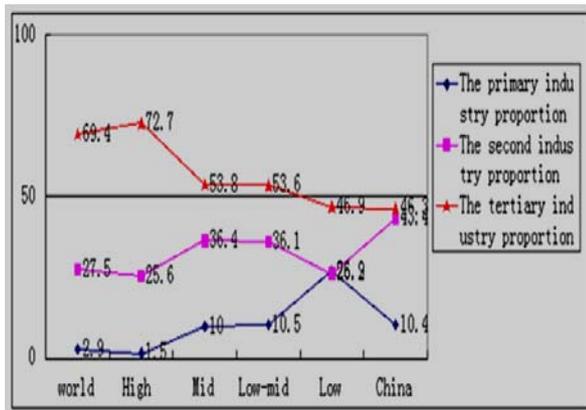
Fig.1 The proportion of the world's industrial output values in different income countries in 2009
High: high income country;
Middle: middle income country;
Low-mid: low and middle income country;
Low: low income country.

From the employment structure, since 2001 China's employment of three industries is toward rational direction. It can be clearly seen from Table II, 2001--2013's primary industry employment proportion is gradually decreased from 50% in 2001 to 31.4% in 2013, down 18.6 percentage points, the downward trend is obvious, but primary industry still attracted a large number of the employment which is the main industry to solve the employment problem of Chinese personnel. Tertiary industry employment's has continued to rise, up from 27.7% in 2001 to 2013 of 38.5%, an increase of 10.8 percentage points, which absorb about a third of the country's total employment, it is the first large outlet staff to solve employment issues. The proportion of secondary industry also showed steady growth from 22.3% in 2001 to 30.1% in 2013, an increase of 7.8 percentage points. The current status of employment shows that the existence of surplus labor in the primary sector is off to the secondary and tertiary industries; it also reflects that China's industrial structure is gradually optimized and transformation.

US employment situation was in the doldrums for several years since financial crisis in 2008, it is gradually turnaround in 2011. While the employment rate of the labor force declined in 2010 compared to 0.6 percent, the unemployment rate in 2010 fell by more than 0.7 percentage points. In 2012, following 2011, continue improving. The employment reached 14,247 million, an increase to 260 million more than in 2011, an increase of 1.9% compared to 2011. From three industry employment situation (Table II), the proportion of tertiary industry showed an upward trend, from 77.3% in 2001 rose to 84% in 2013, an increase of 6.7 percentage points, the tertiary industry added more than two-thirds of employment and ranked first in three industries in 2013. Changes in the proportion of primary industry output value of the same

trend, the proportion of primary industry employment changed little, basically maintained at around 1%, both of which show a high degree of coordination. The proportion of secondary industry is showing a downward trend, suggesting that the surplus labor of the secondary industry is shifting towards tertiary industries.

TABLE II   CHINA AND THE US SHARE OF ALL INDUSTRY EMPLOYMENT CHART

Years	Primary Industry		Secondary industry		Tertiary Industry	
2001	14.4	1.0	45.1	20.8	40.5	78.2
2002	13.7	0.9	44.8	20.0	41.5	79.1
2003	12.8	1.0	46.0	19.8	41.2	79.2
2004	13.4	1.2	46.2	20.3	40.4	78.5
2005	12.2	1.0	47.7	20.3	40.1	78.7
2006	11.3	0.9	48.7	20.7	40.0	78.4
2007	11.1	1.0	48.5	20.4	40.4	78.6
2008	11.3	1.1	48.6	19.8	40.1	79.1
2009	10.3	0.9	46.3	18.6	43.4	80.5
2010	10.2	0.7	46.6	16.8	43.2	82.5
2011	10.0	1.2	46.8	19.2	43.2	79.6
2012	10.1	1.2	45.3	19.1	44.6	79.7
2013	10.0	1.2	43.9	20.2	46.1	78.6

Source: ⓞ 2012 China Statistical Yearbook, 2012 and 2013 National Economic and Social Development Statistics Bulletin, 2012/2013/2014 World Economic Yearbook

ⓞ US Department of Commerce and the Ministry of Labor Statistics Web site data processing obtained, including the United States in 2012 than job from the 2014 World Economic Yearbook.

Comparative analysis of the employment structure can be drawn between the two countries, the United States employed more concentrated in the tertiary industry, followed by the secondary industry, and finally the primary industry, employment structure model is 321 and the value structure exactly. And China's employment structure pattern consists of 132 slow transitions into three or two and two or three previous mode output structures do not coincide. Comparative analysis of the employment structure can be drawn between the two countries, the United States employed more concentrated in the tertiary industry, followed by the secondary industry, and finally the primary industry, employment structure model is 321 and the value structure exactly. And China's employment structure pattern consists of 132 slowly into 312, which is not coinciding with the 231 value structure.

C.   Inside Analysis of Chinese and US' Industrial Structure
1)   Internal analysis of the first industry

The internal structure of agriculture changed dramatically since China's reform and opening up, it also changed the structure from "agriculture, animal husbandry, forestry and fishing" to "agriculture, animal husbandry, fisheries, and forestry." In 2001, the production value structure of agriculture, forestry, animal husbandry and fishery is 55.2: 3.6: 30.4: 11.8 , while it is 51.5: 3.9: 28.4: 9.63 in 2013, the proportion of agriculture declined

steadily, down 4.7 percentage points, the proportion of forestry, fisheries is significantly increased . The proportion of primary industry inside tends to be stable and restructuring planting continues to adjust and optimize.

The land area of the United States compared to China has little difference, while agricultural land in the US is more abundant than China. According to the 2013 Statistical Yearbook of record world economy, the United States' arable and pasture land is about 430 million hectares, accounting for about 10% of global agricultural land. In 2012, the United States added 42748 million US dollars in agriculture, forestry, fishing and hunting, accounting for 1.2% of GDP. The proportion of forest, hunting and fishing is increasing overall, whereas the proportion of agriculture is declining. Such as the 2012 US corn production was 376.75 million tons, down 8.8% compared with 2011; soybean production was 82.05 million tons, down from 2.5% in 2011 [8].

2) Internal analysis of the secondary industry

China's level of industrialization is the latter stages of in the middle phase of industrialization. The industrial structure has been moving towards highly assembly industry as the core. Capital-intensive and technology-intensive industries are gradually developing [9]. The proportion of the output value of the secondary industry was relatively stable, but its output has been significantly improved. The secondary industrial output value in 2001 was 4.95123 trillion Yuan, increasing to 24.9684 trillion Yuan in 2013, a 5.18 times increase. In 2013, the proportion of industry was 84.4%, and the proportion of construction was 15.6%. (Source: 2013 National Economic and Social Development Statistics Bulletin) Within the industry, the mining industry increased by 6.4 percent compared to previous year; the manufacturing sector grew by 10.5 percent compared to previous year; heat, gas and water's production and supply grew by 6.8%. Overall, in 2012, industry maintained a growth of about 10%. Total industrial added value was 21.0689 trillion Yuan, an increase of 7.6% over the previous year. Added value of construction is 3.8995 trillion Yuan, an increase of 9.5% compared to previous year.

From the point view of the secondary industry in US, it mainly includes manufacturing, construction, electricity and mining, these four categories. Manufacturing maintains the dominant position in US secondary industry, followed by construction, power and mining industries [10]. According to 2012/2013 Statistical Yearbook of the World Economic data, it can be concluded that the proportion of manufacturing industry in the United States was showing a rising trend in the secondary industry by 11.2 percent in 2009 to 11.7 percent in 2010; Construction and electricity share rose slightly; while the mining industry remained unchanged. In 2011 and 2012, US industrial production continued to rebound, which had an annual increase of 4.0% and 3.6%. In 2012, mining

industry increase 6.4%, and manufacturing output increased 4.0%. Manufacturing production of durable goods rose 7.2 percent, and the non-durable goods production index increased by 1.2%.

3) Internal analysis of tertiary industry

From a vertical view, the proportion of tertiary industry output value of China fluctuated little, remaining at around 41%. However its value increased substantially, from 4.43616 trillion Yuan in 2001 to 23.1406 trillion Yuan 2012. In 2001, the wholesale, retail, catering and finance, insurance real estate shared a large proportion in the added value of the tertiary industry, which had proportion of 9.68 percent and 7.60 percent. Transportation and warehousing was accounting for 4.41%, while the R&D and technology services share only 0.9%. In 2012, transportation, storage, wholesale and retail food and beverage, finance, insurance and real estate, R&D, technology and services output was 4.77%, 11.5%, 11.1%, 1.97%, respectively. Basically the structure had the wholesale and retail sector as the main driver, which promoted development of housing, finance and insurance, transportation, warehousing and other industries.

Based on the analysis of the data from 2012/2013/2014 Statistical Yearbook of the world economy and the US Department of Commerce sites, the proportion of internal transportation and warehousing industry in tertiary was declining, down from 3% in 2001 to 2.6% in 2011, reaching 3% in 2012, overall a downward trend; the proportion of wholesale and retail trade decreased notably, falling from 13.1% in 2001 to 11.26% in 2012; the proportion of GDP of arts, entertainment and catering industry output value's was stable at about 3.5%, reaching 4.26% in 2012. The GDP share of financial and insurance industry rose steadily, from 8.31% in 2001 to 19.6 per cent in 2012; At the same time, the GDP share of the real estate industry's also had a gentle rise, up from 11.31 percent in 2001 to 13.25% in 2012. Scientific and technical services have made steady growth, rising from 6.8 in 2001 to 7.7 percent in 2012. This suggests that research and technical services, finance and insurance and real estate made a significant contribution to the economic development of the US, while the growth rate of tertiary industry such as wholesale and retail, transportation and warehousing industry was decreasing.

D. Comparative Analysis in the Benefit of the Structure of the Three Industries

We use industrial deviation and comparative labor productivity - two indicators to analyze the benefit of the structure of the three industries

1) Deviation of the three industries

Industrial structure deviation is difference between 1 and the proportion of employment divided by the proportion of output value. To a certain extent, it reflects the stage of growth of the industrial structure, operational

quality and maturity [11].We can conclude that from the analysis of industrial structure deviation between China and US in Tables III: (1) The degree of deviation of Chinese industrial is overall following a downward trend, but the deviation value compared to the deviation value of the United States is large. This shows a weak symmetry between the value structure and the employment structure in China's three industries; the output value structure and employment structure are incompatible with each other; and the industrial structure efficiency is not high. (2) United States' value of primary industry deviation remained around 0, while China's primary industry's structure deviation is greater, and is a negative value, indicating that China's labor productivity is less than the United States' in the first industry, and the structure deviation is large. Because of institutional factors, the quality of rural labor force and other factors, it is difficult to shift the first industrial labors between sectors [9]. (3) The United States secondary and tertiary industries' deviation value tends to be 0, indicating that the symmetry between employment and output structure is good, and employment structure and output value structure is coordinate. However, the industrial structure of China's secondary industrial deviation is positive and close to 1. This explains that the secondary industry in China has the highest labor productivity, but does not increase employment; the absolute value of deviation of the tertiary industry is the minimum and gradually reducing, indicating that the production structure and employment structure of the tertiary industrial is gradually coordinated.

TABLE III. CHINA AND THE UNITED STATES INDUSTRIAL STRUCTURE DEVIATION TABLE

Years	Primary Industry		Secondary industry		Tertiary Industry	
2001	14.4	1.0	45.1	20.8	40.5	78.2
2002	13.7	0.9	44.8	20.0	41.5	79.1
2003	12.8	1.0	46.0	19.8	41.2	79.2
2004	13.4	1.2	46.2	20.3	40.4	78.5
2005	12.2	1.0	47.7	20.3	40.1	78.7
2006	11.3	0.9	48.7	20.7	40.0	78.4
2007	11.1	1.0	48.5	20.4	40.4	78.6
2008	11.3	1.1	48.6	19.8	40.1	79.1
2009	10.3	0.9	46.3	18.6	43.4	80.5
2010	10.2	0.7	46.6	16.8	43.2	82.5
2011	10.0	1.2	46.8	19.2	43.2	79.6
2012	10.1	1.2	45.3	19.1	44.6	79.7
2013	10.0	1.2	43.9	20.2	46.1	78.6

2) The analysis of comparative labor productivity

Comparative labor productivity is output value of each unit of labor absorbed [12]. If an industry's comparative labor productivity is higher, it indicates a higher efficiency and reflects a poor ability of the industry to absorb employment.

You can compare the two countries' comparative labor productivity drawn by the trend curve in Figure 2; from

2001 to 2013 China's relative labor productivity in three industries is showing a downward trend. Among them, the secondary industry's is the highest, and the downward trend is obvious. Comparing rates of labor productivity in China's primary industry is less than 0.3, which is a great deal of difference compared to the United States. Comparative labor productivity of the secondary and tertiary industry in the United States is relatively stable around 1and has a minor fluctuation; while China's secondary industry and tertiary industry's relatively labor productivity is greater than 1. Compared with the primary industry, secondary and tertiary industries' national output created by 1% of the labor force is far greater than the first industry. It also shows a secondary industrial-based industry in terms of value creation than the national agriculture-based primary industry has a clear comparative advantage.
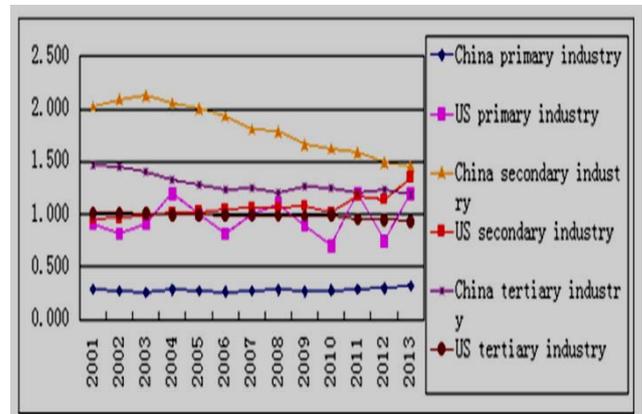

Fig.2 2001--2013 China-US bilateral comparative labor productivity trends

III. CHINA'S INDUSTRIAL STRUCTURE PROBLEMS

By comparing two countries over the status of the industrial structure, it can be seen that there are following issues in China's industrial structure:

(1) Although the proportion of primary industry continued to decline, the proportion is still high, and the structure deviation is too large. The root cause is the weak foundation of China's agricultural infrastructure and the lack of government support for agricultural production. The mechanization of the agricultural production is low. The industry relies on human labor, animal labor and manual tools. Agricultural production technology lags behind relatively. All these affect the labor efficiency of the primary sector.

(2) The proportion of secondary industry output value rise slowly, and manufacturing is at the lower end of the

value chain. Although the secondary industry output improved significantly, the production structure is not reasonable enough and economic growth quality is not high. The proportion of the output value changing trend is not obvious. The proportion of secondary value changed from 45.1% in 2001 to 43.9% in 2013, only a 1.7% difference in thirteen years, which owing to the slow adjustment of the industrial structure. Due to resource constraints environment, the energy structure of China is still coal-dominated, so the choice of low-carbon energy sources is limited, which increases the difficulty of industrial restructuring [13]. China's manufacturing industry is at the low end of the global value chain, mainly due to inadequate investment in research and development. The comparative advantage of China in some way is to rely on cheap labor available, which leads to a competitive advantage in manufacturing mainly in the processing and assembly areas. This causes difficulties to improve added value of products. As it can be seen in Figure 3, from 2001 to 2013, China's exports showed a clear growth trend, but the proportion of processing trade accounted for almost 50% of total exports. The, annual proportion of processing trade reached even more than 50% between 2001 and 2006. This shows that China mainly relies on stimulating the development of processing trade to stimulate export trade. By taking foreign enterprises' processing production orders to drive China's export trade, China's export trade did not cultivate their own brand of innovation to develop international markets.
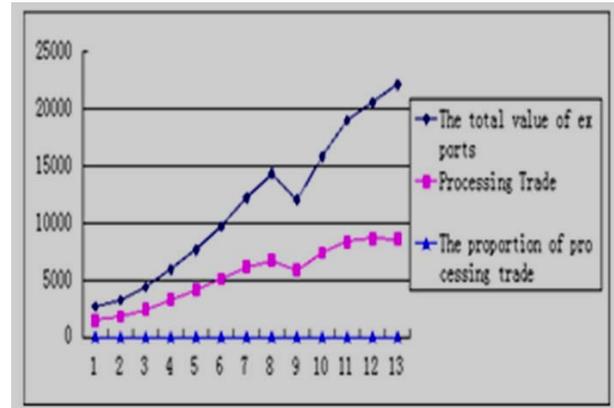

Fig.3 2001 - Processing Trade in China's export trade in 2013

The proportion of tertiary industry is small and its internal structure is irrational. Tertiary industry accounts around 70% currently in developed countries, while most developing countries has the share around 50%. The proportion of tertiary industry in China has been hovered between 30% and 40% for long time [14]. The problem of the internal structure of the tertiary industry could be shown from Table IV. the United States' industries consist mainly consulting, insurance, financial and other emerging industries, while China mainly relies on traditional services such as catering, wholesale and retail etc.; research and development, information consulting, finance, insurance and other basic services has developed rapidly, but the proportion is lower compared to that of developed countries with a large gap.

TABLE IV   THE PROPORTİON OF GDP OF SOME İNDUSTRİES İN THE TERTİARY İNDUSTRY İN CHİNA AND THE US

Items	2001		2003		2005		2007		2011		2012	
	China	US	China	US	China	US	China	US	China	US	China	US
Traffic, transportation, warehousing	4.41	2.90	4.49	2.90	6.00	2.90	5.74	2.90	4.63	2.80	4.77	3.00
Wholesale, retail, food and beverage	9.68	12.80	9.68	12.60	9.62	12.30	9.70	12.10	11.10	14.60	11.50	11.26
Finance, insurance consulting	7.60	20.90	7.60	20.80	8.00	20.60	9.95	20.60	10.90	19.90	11.10	19.60
Research, technology service	0.90	6.80	0.90	6.70	1.11	6.90	1.13	7.30	1.83	7.80	1.97	7.70

Source: ⓞ 2012 / 2013 China Statistical Yearbook

ⓞ Data processed from the US Department of Commerce and the Ministry of Labor Statistics Web site

IV. SUGGESTIONS

Targeting at the issues of China's industrial structure, the Chinese government may take the following measures:

(1) The government should continue to consolidate the foundation of agriculture and increase government investment in agriculture as well as improve rural education. We should also take strengthening the position of agriculture as an important task to promote the development of new agricultural industry organizations and agricultural industrialization. Government could guide the establishment of agricultural production

cooperatives, agricultural workers to develop education and training system, and the development of rural compulsory education in the protection system. This would thus improve the quality of the agricultural population and employment levels, reduce the structural deviation of the primary industry, and then promote agricultural labor force to the secondary, tertiary industries.

(2) Government should accelerate the secondary industrial restructuring, enhance labor-intensive industries, and increase investment in science and technology research and development. To achieve the rapid development of the secondary industry, China must speed up industrial restructuring; abandon the solely processing

and assembly-based manufacturing sector. China should also promote the brand building and marketing, to enhance new product development capabilities and brand innovation. For the promotion of labor-intensive industries, it is necessary for China to increase the industrial variety, improve product quality, improve industrial efficiency, and more importantly, increase the knowledge and technology components, changing the industry from order processing and assembly-based extended to product design, brand marketing, and other aspects to achieve the upgrade of labor-intensive industries in the value chain [15]. Meanwhile, China should increase investment in R&D to make innovation and lead to economic development. The government should actively increase scientific and technological innovation, and guide the high-paying technology industry to have rapid and healthy development. While government increasing R&D investment directly , it should also set up R&D funds and venture capital funds, in order to attract more social funds into research based and high-tech companies. Then it should set policies to promote high-tech's development and encourage the development of new industries, and then enhance the position of manufacturing industry of China in the value chain.

(3) The government should promote the development of productive services, and further complete the internal structure of the tertiary industry. Modern service industry is considered as an upgrade of traditional service industries. It is based on modern information and communication technology, and uses the most advanced organization management to modernize some existing services in aspects of technology and management, and eventually form many other modern service industries such as modern financial services industry, modern information and communication services, and modern logistics industry [16]. Modern service industry in China has considerable development prospect and huge market demand compared to the United States and other developed countries. Therefore, the government needs to use subsidies, tax breaks and other policies to support the development of producer services, make guideline principles for productive service transformation, strength communication and cooperation with developed countries in the services industries, and improve the proportion of productive services in the tertiary industry. At the same time, the government should reasonably adjust the development of tertiary industry and increase the share of investment as well as complete the tertiary industry internal structure on the macro scale.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflicts of interest.

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