

## An Empirical Study on the Evolution of Employment Structure of Circulation Industry in Yangtze River Delta

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### Abstract

Employment structure of circulation industry is in continuous evolution along with the economic transition, and this paper makes an empirical study on it. This paper analyzes the change in laborers employed, employment structure and industry structure in circulation industry in Yangtze River Delta, and makes a comparison with the employment proportion in the third industry. Based on the above analysis, this paper gives some policy advices to promote the healthy development of the circulation industry in the Yangtze River Delta and further enhance the industry to absorb laborers.

**Key words:** Circulation industry; Employment structure; Evolution

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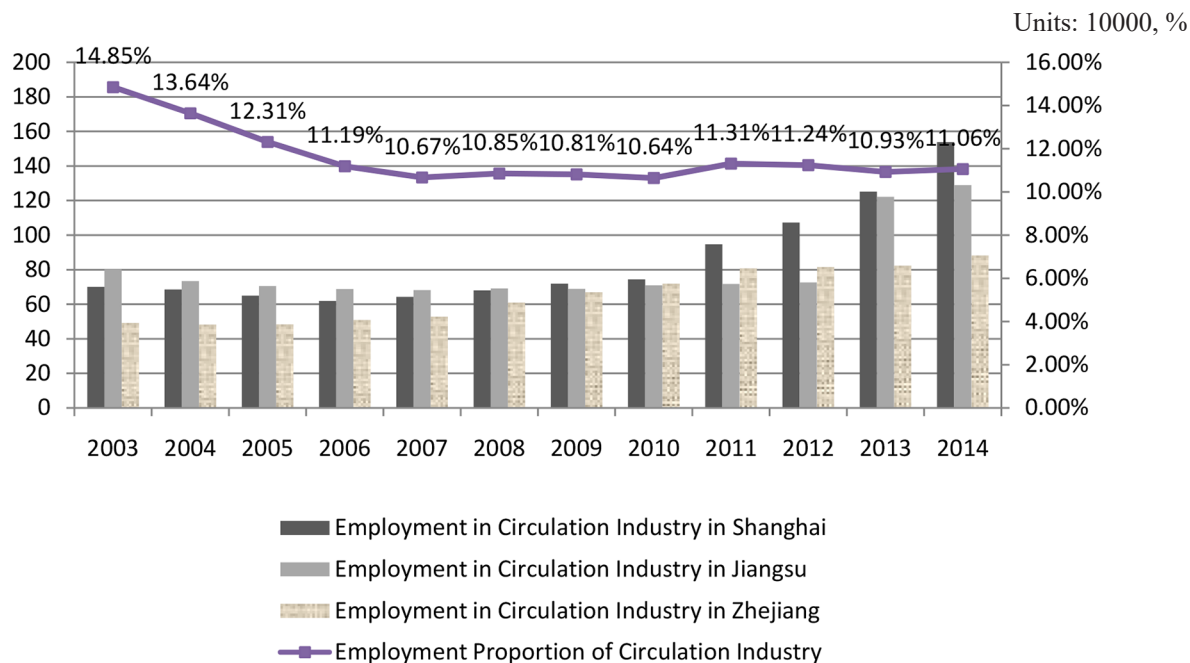
### INTRODUCTION

Along with the economic growth, the industrial structure is changing all the time and the employment structure changes accordingly. A lot of theoretical and empirical analysis shows that transferring of labor force from primary industry to the secondary and tertiary industry is inevitable under the influential factor such as technical progress, changing of the demand structure and the development of social division. Circulation industry including transport, storage, post, wholesale, retail trade,

accommodation and restaurants industry, is an important part of the tertiary industry. Circulation industry can absorb a lot of laborers with different skills because of its wide range. The employment pressure is very great in China during the process of supply-side structural reform, and the development of the circulation industry will help resolve the unemployment problem. This paper makes an empirical study on the evolution of employment structure of the circulation industry based on the statistical data, and gives some policy advices to promote the healthy development of the circulation industry in Yangtze River Delta and further enhance the industry to absorb laborers.

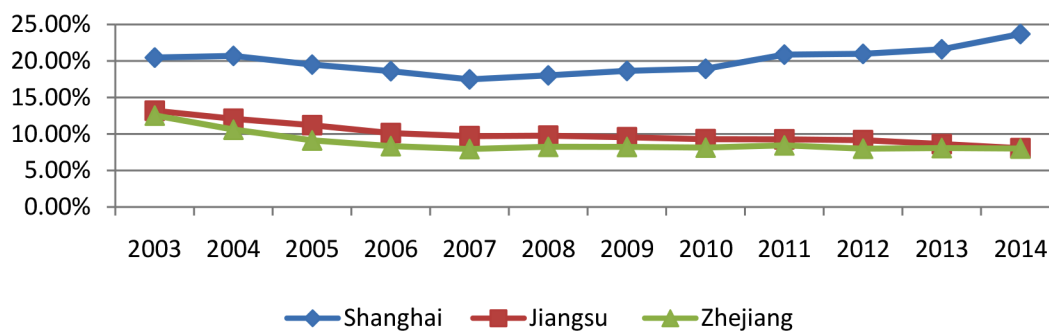
### 1. EVOLUTION OF EMPLOYMENT STRUCTURE OF CIRCULATION INDUSTRY IN YANGTZE RIVER DELTA

From the analysis of the employment of the circulation industry in Yangtze River Delta, we can know that the employment presented an upward tendency between 2003 and 2014 in this area, but employment proportion of circulation industry dropped slowly, as shown in Figure 1. From the analysis of specific provinces and cities, as shown in Figure 2, we can see the employment in Shanghai had got the fastest rise from 700,315 in 2003 to 1,537,723 in 2014, with an average annual growth rate of 7.41%. The employment in Jiangsu and Zhejiang had gone up steadily, with an average annual growth rate of 4.40% and 5.45%. But employment proportion of circulation industry to total employment was different in three areas. In Shanghai, the proportion was 20.47% in 2003 and it increased to 23.70% in 2014. However, the employment proportion in Jiangsu and Zhejiang reduced significantly. We can see the proportion dropped from 13.19% to 8.04% in Jiangsu and from 12.53% to 8.00% in Zhejiang.



**Figure 1**  
**Employment and Employment Proportion of Circulation Industry (2003-2014)**

Source: *China Labor Statistical Yearbook 2004-2015*.



**Figure 2**  
**Employment proportion of Circulation Industry in Yangtze River Delta (2003-2014)**

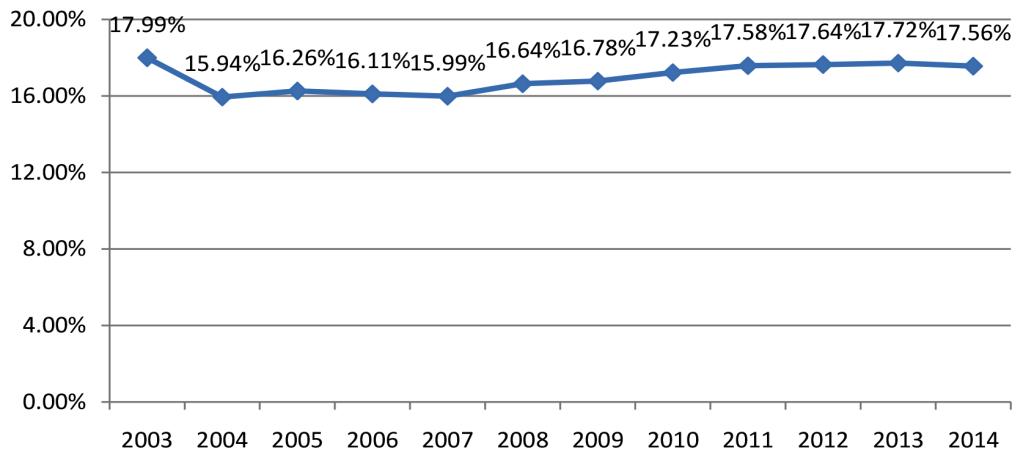
Source: *China Labor Statistical Yearbook 2004-2015*.

## 2. CONSISTENCY ANALYSIS ON THE EVOLUTION OF EMPLOYMENT STRUCTURE AND INDUSTRIAL STRUCTURE OF CIRCULATION INDUSTRY IN YANGTZE RIVER DELTA

According to scholars' study on the evolution of employment structure and industrial structure, there is a strong connection between the employment structure and industrial structure in a nation or region. Petty-Clark's Law points out that, with the continuously increased in per capita national income, social labor force distributing in tertiary industry shows that the labor force of the service industry will increase. Simon Kuznets' study also shows that in the process of economic development, the proportion of the national income of the primary industry

will continue to fall, so will the employment proportion. At the same time, the proportion of the national income of the third industry will increase slightly, and the employment proportion will present an upward tendency.

Over the past twenty years, China's circulation industry has developed rapidly with an increasing output, and it has become an important basic industry. Yangtze River Delta has highly developed business, which provides a favorable opportunity to develop circulation industry. Statistics showed that output of circulation industry presents the fast growth with a growth rate of 14.32% annually in the Yangtze River Delta during 2003-2014. But the output proportion of circulation industry showed a declining trend. As shown in Figure 3, the output proportion of circulation industry to GDP was 17.99% in 2003, but the proportion had been declining and fell to the lowest 15.94% in 2004, followed by improved slightly, and the portion was 17.56% in 2014.



**Figure 3**  
**Output Proportion of Circulation Industry in Yangtze River Delta (2003-2014)**

Source: *China Statistical Yearbook 2004-2015*.

Structure deviation degree is an important index to show the consistency of employment structure and industrial structure, and it reflects the difference between the proportion of employment and the added value. The structure deviation degree formula is as follows:

$$\beta = \frac{E_m}{E} - \frac{G_m}{G}$$

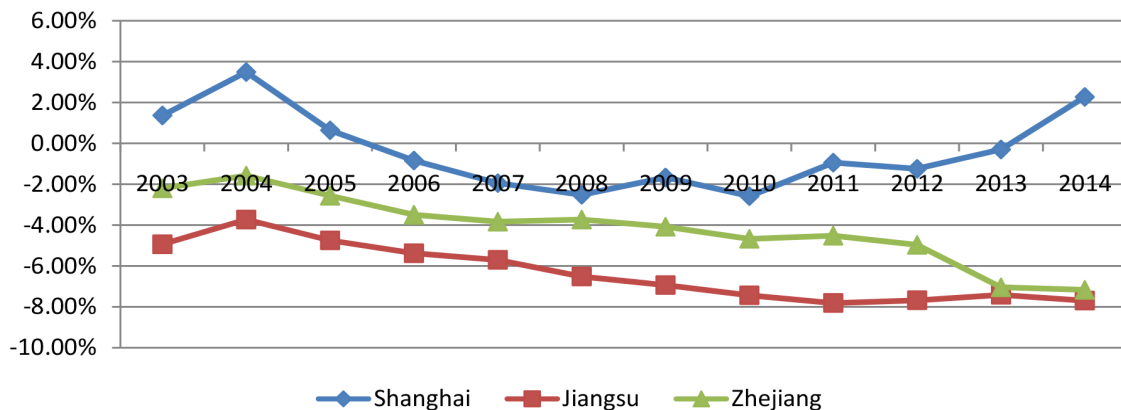
In this formula,  $\beta$  means the structure deviation coefficient;  $E_m$  means employment in a particular industry;  $E$  means the total number of employment;  $G_m$  means added value of a particular industry;  $G$  means GDP. The structure deviation degree of circulation industry in Yangtze River Delta is calculated, as shown in Table 1. There is a degree of deviation between employment structure and industrial structure of circulation industry during 2003-2014 in Yangtze River Delta. We can see the difference between employment structure and industrial structure, and the maximum absolute value of structure deviation coefficient was 6.79% in 2013, and the minimum absolute value of structure deviation coefficient was 2.30%. The value of structure deviation coefficient was negative from 2003 to 2014, which reflects the

labor productivity of circulation industry is higher than other industries during this period. From the analysis of absolute value, we can see an increasing tendency, from 3.14% in 2003 to 6.50% in 2014. From the analysis of specific provinces and cities, as shown in Figure 4, the absolute value of structure deviation coefficient was less in Shanghai, and it was positive in some years. However, the absolute value of structure deviation coefficient was bigger and it was negative in Jiangsu and Zhejiang. We can make a conclusion that labor productivity of circulation industry in Jiangsu and Zhejiang was higher than that in Shanghai.

**Table 1**  
**Structure Deviation Degree of Employment Structure and Industrial Structure in Circulation Industry in Yangtze River Delta**

Year	2003	2004	2005	2006	2007	2008
$\beta$	-3.14%	-2.30%	-3.94%	-4.92%	-5.32%	-5.79%
Year	2009	2010	2011	2012	2013	2014
$\beta$	-5.96%	-6.58%	-6.27%	-6.40%	-6.79%	-6.50%

Source: *China Statistical Yearbook 2004-2015*.



**Figure 4**  
**Comparison of Structure Deviation Degree in Yangtze River Delta**

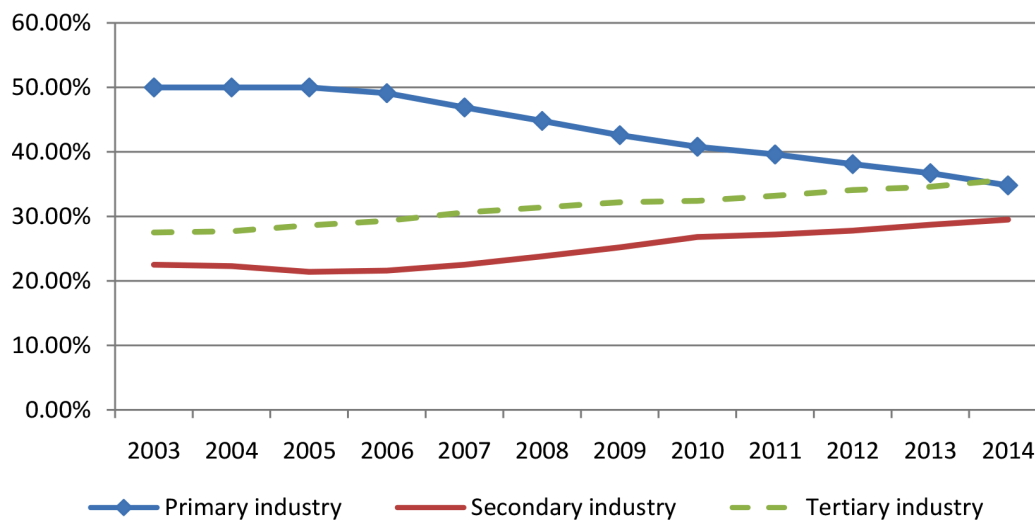
Source: *China Statistical Yearbook 2004-2015*.

### 3. COMPARATIVE ANALYSIS ON EMPLOYMENT PROPORTION BETWEEN CIRCULATION INDUSTRY AND TERTIARY INDUSTRY

The process of economic transformation is also the process of upgrading of industrial structure, with employment structure evolution. In this process, a large number of labor force transferred from primary industry, so the employment proportion of primary industry was declining and the employment proportion of secondary and tertiary industry was growing. The analysis of the employment structure in Yangtze River Delta during 2003-2014 shows that the employment proportion of

tertiary industry has been higher, as shown in Figure 5. In 2003, the employment proportion of tertiary industry was 53.00% in Yangtze River Delta, and the proportion was increasing over the next twelve years. In 2014, the employment proportion of tertiary industry in Yangtze River Delta has climbed to 74.00%, with an average annual growth of 2.82%.

Comparative analysis on employment proportion between circulation industry and tertiary industry shows that, the employment proportion of circulation industry declined obviously while the employment proportion of tertiary industry has continued to rise. It reflected that the employment absorption capacity of the circulation industry is more weak than other sectors of the tertiary industry.



**Figure 5**  
**Employment Structure in Three Major Sectors in Yangtze River Delta (2003-2014)**

Source: *China Statistical Yearbook 2004-2015*.

### 4. CONCLUSIONS AND POLICY RECOMMENDATIONS

Since reform and opening to the outside world, China has achieved a super rapid growth rate of GDP which was about 10% annually, and a lot of new jobs were created. But the conflict between the supply and demand in the labor market is still prominent, which has been the most important obstacle prohibiting China's economy from developing. In recent years, circulation industry in Yangtze River Delta has developed rapidly and has become an important industry to absorb the labor force based on the above empirical analysis. But there is a certain deviation in the employment structure and industrial structure, and the possibility of the labor force transferring to other industries is increasing. In order to promote the healthy development of circulation industry in Yangtze River Delta and further strengthen its ability to absorb the labor force, this paper puts forward as follows to suggest.

The first one is increasing investment in fixed assets, and strengthening coordination and cooperation between government departments from the policy level, to optimize the resource structure of the transport, storage and post industry. From actual situation, aviation, railway, highway development respectively and this kind of un-dovetail brings the obstacle for industrial development. Various industries and their administrative departments plan for themselves. It's difficult to develop coordinately by lack of joined-up thinking and operation, and it resulted in the lack of effective integration among limited resources. Therefore, it's necessary to increase the fixed assets investment in transport, storage and post industry, and expand reproduction of the industry to promote the upgrading of industrial structure, and enlarge the scale of industry employment. At the same time, we need to strengthen coordination and cooperation between government departments to break the existing regional segmentation, and make policy orderly to create a favorable policy environment for industrial

development and promote its employment absorption capacity.

The second one is to raise the average salary level of the industry, and promote the overall quality of staff in circulation industry. In the process of economic transition, China's labor market has increasingly turned mature, and many institutional barriers which influence the flow of laborers are gradually broken, so it is easier for laborers to transfer from one industry to another. According to traditional labor economic theory, when someone makes the decision on labor supply, he inclines to higher wage. In the process of economic development, a large number of small micro-enterprises gathered in circulation industry in Yangtze River Delta. These small-scale enterprises with less number of workers often take advantage of cheap labor cost and the wage level is always low. According to related statistics, the growth rate of average wage in circulation industry is lower than that of the average wage in Yangtze River Delta. In 2003, the ratio of average wage in circulation industry in to the average wage in Yangtze River Delta was 1.10, while in 2014 this ratio dropped to 0.79. In the long run, by lowering wage to gain competitive advantage is difficult to maintain. Low wage

is difficult to attract sufficient labor, especially those high-quality workforces who have mastered a certain amount of knowledge and skills. In the process of upgrading of circulation industry, it's inevitable to improve the overall quality of the workers. Raising the level of wage scientifically has positive influence on attracting highly qualified staff, expanding industrial employment, and promoting healthy development.

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