

# DYNAMIC MECHANISM OF POPULATION TRANSFER AND ITS EFFECT ON FOOD INDUSTRIES CREDIT SYSTEMS

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**Abstract:** Population transfer is a complicated social phenomenon which concerns the development of national welfare and people's livelihood and the credit system of the food production and processing industry. This study investigated the dynamic mechanism of population transfer and its effect on the food processing industry, applying theories like urbanization theory, regional imbalanced development theory, regional balanced development theory, comprehensive and coordinated development of urban and rural areas theory. Based on the practical situation of Henan province, the study offered some countermeasure suggestions for the existing problems in the credit systems of the food industry in Henan and discussed how to establish appropriate credit systems, thus to help food security and sustainable development of Henan.

**Keywords:** population transfer; dynamic mechanism; credit system; urbanization

## INTRODUCTION

Since the 1980s, population transfer has attracted more and more attentions from the public (Feng et al., 2007). With the development of market economic system, a large number of rural population moves towards cities and towns, which makes number of cities and towns as well as proportion of urban population begin to increase. Population transfer can lead to changes of population composition, labor supply and demand for consumption, which will have great influence on social economy and development of food production industries.

Jin et al. (2007) elaborated the rationalization of evaluation criterion of urbanization level, which is to establish a comprehensive index system to

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evaluate urbanization level based on unity of quality and quantity of urbanization, instead of population index. Xue et al. (Xue, 2011) established an index system to evaluate urbanization level as well as carried out empirical tests (Xue, 2011). Guo (Guo, 2010) and Liu (Liu, 2012) thought that urbanization level of Chongqing fell behind industrialization level; meanwhile, from the aspect of urbanization speed, Song et al. (Song and Chunyou, 2010) believed that although urbanization speed of Chongqing was fast, it still could not catch up with the development speed of the whole world. Therefore, urbanization should be continuously propelled and urbanization quality should be improved as well.

Population transfer has great influence on credit system in food production industries. Almost all world-renowned credit information service companies locate in Europe and America (Mei and Ma, 2007), while America is the country owns most perfect credit system and most mature researches all around the world. Xu et al. (Jian et al., 2009) studied history and current status of credit systems in Jiangsu, Zhejiang, Shanghai and Yangtze River Delta region, and also summarized obtained achievement of above regions. In studies of Sichuan enterprises credit system construction, Li et al. (Li, 2010) believed that enterprise credit system is the subject of social credit system on account of enterprises' principle status in national economy.

On the basis of statistical analysis, this study made a detailed research on the dynamic mechanism of population transfer as well as its effect on the credit system of the food production industry, which is of great significance to the economic development and stability of society.

## **MATERIALS AND METHODS**

### **Materials**

1% of people in Henan province who live outside their resident city for more than six months were selected as research subjects to study the characteristics of population transfer in Henan province during urbanization. Peasant-workers especially were taken as the key study subject to make the research more pertinent. On the basis of the summary of basic theories of population transfer, this study explored the characteristics of population transfer in Henan province as well as its effect on the credit system of food production enterprises, found the problems existing in the food production and processing enterprises under the condition of population transfer, and finally put forward the importance of establishing credit systems in Henan province.

### **Methods**

This study carried out qualitative and quantitative researches by using statistical analysis method, comprehensive analysis method, method of

comparative research, chart analysis method, etc. The technical key point in this study was to grasp urbanization status and evolutions rules of population transfer in the perspective of time dimension and region, summarize problems in population transfer, and put forward several useful suggestions for the establishment of the credit system in the food industry in Zhengzhou city.

## **RESULTS AND DISCUSSION**

### **Characteristics of the transfer of rural population to cities in Henan province**

In 2013, the population who engaged in agricultural good production in Henan province accounted for 40.12%, construction industry for 31.8%, and service industry for 28.01%. The proportion of the population who engaged in agricultural food production was higher than that of the construction industry and the service industry. It could be seen from the current vocational distribution of the rural population in Henan that, the rural population who engaged in agricultural food production was more than half of the total population, and the population who engaged in the construction industry and the service industry only accounted for a small proportion. As there was no direct data about rural transfer, the labor data were used. Till the end of 2014, the total amount of the transfer employment of labor in the rural population of Henan province reached 274.2 million, featured by large transfer amount and high transfer speed. Though the employment amount of the transferred labor in the rural population in the construction industry and the service industry is increasing, the increase speed of transfer will slow down.

In 2004, the total number of floating population in Chongqing reached 6,497,800, while outflow population was 4,070,100 people, accounting for 14.7% of resident population of the whole city (Table 1). In 2005, outflow population of the whole city reached 6,372,600, which increased 435,800 people (7.7%) compared with last year, accounting for 20.1% of overall population of the city.

It could be known from Table 1 that, the urban population of Henan province obviously increased from 36.22 million to 42.65 million from 2010 to 2014, and the rural population decreased from 57.81 million to 51.71 million, showing severe population loss; the amount of newly increased transferred labor decreased from 1.05 million in 2010 to 0.82 million in 2014; the total amount of transfer employment of rural labor increased from 23.63 million in 2010 to 27.42 million in 2014, indicating an increase of 16%; the urbanization level increased from 38.52% in 2010 to 45.20% in 2014.

The sampling investigation on the 1% of Hunan population demonstrated that, the transfer of rural population in Henan province mainly had the following characteristics.

Firstly, the population transfer focused more on transfer within province. The employment number of rural population in Henan province in 2011 was 1.26 million more than in 2010, among which, about 240 thousand people were transferred from other provinces, which made the transfer employment number of rural population within Henan province up to 12.68 million, exceeding 11.90 million (the employment amount of population transferring to other provinces) for the first time. In 2012, there were 1.05 million of newly increased transfer employment people, 80% of which were employed within the province.

Table 1. The labor transfer conditions of Henan province over the years

Year	2010	2011	2012	2013	2014
Urban population (ten thousand)	3622.0	3809	3980	4095	4265.0
Rural population (ten thousand)	5781.0	5579	5388	5216	5171.0
Urbanization level (%)	38.52	40.5	42.39	44.05	45.20
The amount of newly transferred rural labor (ten thousand)	105	102	105	90	82
The total transfer employment amount of rural labor (ten thousand)	2363	2468	2570	2660	2742

The second characteristic was that the output region transformed from the eastern region to the middle and western regions. The proportion of population transferring to the eastern region decreased from 48% in 2010 to 35.5% in 2012, while the proportion of population transferring to the middle region increased from 47.5% to 57%. The promotion of strategies such as western development and rise of central China provides more opportunities for the rural population to be employed outside and moreover significantly strengthens the absorption ability of the middle and western regions for the rural population in Henan. The last characteristic was the transformation of the rural labor transfer industry. The transfer employment of rural population in Henan was dominated by the construction industry and the mechanical-electronic industry, accounting for more than 65%. The construction industry and the mechanical-electronic industry played important roles in absorbing the rural population, but the increase of the amount of population which was absorbed by the service industry showed the highest speed. With the rapid development of the service industry in Henan, more and more rural population will be engaged in the service industry in the future, which may result in the further decrease of the population engaging in agricultural food production and processing industries

As a complicated social phenomenon, population transfer can present different characteristics in different periods on account of different productive relations and productive force levels. This study analyzed the population transfer status

of Henan in recent years and summarized the characteristics of the current population transfer status in Henan, aiming to provide a basis for the prediction of the development trend of population transfer in the future and the formulation of population transfer promotion strategies. Moreover, the problems existing in the food production and processing enterprises during population transfer were summarized and several suggestions which were beneficial to the establishment enhancement of the credit system in the food industry of Henan were put forward.

### **Analysis of the dynamic mechanism of population transfer**

The understanding of the dynamic mechanism of population transfer is the basis of mastering population transfer rules during urbanization and proposing relevant solutions (Xie et al., 2005). According to the previous theories, the root cause for population transfer is the significant income difference between urban and rural labor and the remarkable regional income difference is due to different economic development speeds.

Whether the mode of population transfer is hierarchical transfer or trans-hierarchical transfer depends on local natural environment, productivity development level, industry scale, industry credit, economic development level, credit systems of food production enterprises and the attraction of other province to local population (Cao, 2011).

### **Analysis of effects of population transfer on credit of food production industry in Zhengzhou**

According to principles of economics, the decrease of labor input will lead to the decrease of output when the marginal yield of labor input is positive. Currently, problems existing in the food production industry are not serious. However, the potential risks in the food production industry should not be ignored.

1. More females engage in the food production industry, which highlights the risks of food production. The labor forces which transfer to cities are usually engaged in the construction industry, the labor-intensive manufacturing industry and the electronic products industry which require young adults. As a result, most of the labor forces which are engaged in the food production industry are females.

2. Labor transfer leads to less employment in the food production industry. The food industry is dominated by small and medium-sized enterprises, featured by low overall level, insufficient product development ability and development speed. There is a large gap between the current technical level and product development ability of the current food industry in China and international enterprises.

3. The conflict between the reality of small and medium family enterprises and

large-scale production becomes more serious. For a long time, food production in China is dominated by small and medium family enterprises, and large-scale food production has not been universal. An important feature of small and medium family food processing enterprises is refinement production. The maintenance and improvement of food productivity rely on the large input of labor forces. However, young adults in countries have gradually left for cities. On one hand, the dependence on the large input of labor force has disappeared; on the other hand, the condition of refinement production in the food production in small and medium family enterprises has not been changed. The two factors severely restricted the development of the food production industry. Therefore, only when the food production and processing industry realized the importance of large-scale production can the machinery and advanced food production technologies be fully displayed to eliminate adverse effects caused by the decreased labor input.

In conclusion, the mass transfer of labor forces makes small and medium rural food production enterprises difficult to operate, but they have to sustain production state, which inhibits the formation of the new high-efficient large-scale food processing and production mode. Inevitably, potential risks will be seen in the food production industry in China. Moreover, the transfer and reduction of labor force also results in the reduction of production procedures in the food production industry, which can lead to the generation of credit crisis in the food production industry.

### **Credit Issues Induced by Population Transfer in Food Production Industry**

Under the fierce competition in market, most food production enterprises in Henan are facing insufficient labor force induced by population transfer and severe survival and development situations due to lack of strength (Kokko et al., 2014). On the pursuit of survival and benefits, numbers of enterprises abuse additives in food, use unhygienic food materials, manufacture and sale fakes regardless of laws, morality and enterprise credit. For the sake of own benefits, some enterprises reduce production procedures and labor force and even produce illegal food, which results the poor creditworthiness of food production enterprises. At present, main credit issues in food production industries in Henan are as follows. First, toxic and harmful substances are illegally used in food production, such as using industrial salts to produce pickles, dried turnips and other preserved vegetables; using methyl aldehyde in production of pettitoes, feet of chicken duck and goose, sausage and trepangs, etc., thus to improve texture and color of food as well as extend shelf life; adding prohibited rongalit in rice flour and bean curd stick to improve food texture; using illegal additives which are toxic and harmful chemical materials. Secondly, some enterprises reduce the use of labor force and food production

procedures and even produce poor foods or foods using materials which do not satisfy food hygienic standard to seek unlawful interests. For example, gutter oil is recycled to produce fried food, pork from diseased or dead pigs is used to produce meat products, and spoiled rice which has long been stored in granary is used to produce rice and rice processed products; however, nobody stands out to stop those behaviors, and there are also no detection and inspection produces. Thirdly, some enterprises add or abuse food additives to lower production cost. There is a saying spreading in the society that people who sell vegetables do not eat vegetables they plant, and people who sell fish do not eat fish they breed. Many businessmen always think the unqualified foods that they produce are sold to others and they will not eat the food that they produce, which becomes an excuse for them to produce unqualified food.

### **Basic Content of Credit System Construction of Food Production Industries**

#### **(1) Basic structure of credit system construction.**

Credit system of food production industries in Chongqing, consisting of legal system, evaluation system, institutional norms, information system and punishment mechanism, is participated by government, social organizations, food enterprises and social public together. Government leading group in credit system construction includes National Development and Reform Commission, Food Safety Commission, Food and Drug Administration, Bureau of Quality Supervision, Industrial and Commercial Bureau, Public Security Bureau, Agricultural Bureau, Department of Finance and Discipline Inspection Department, etc. Social organizations include industry associations, research institutions and news media, etc. Food production industries are objects of standardization of credit system while social public are beneficial owners of credit system.

#### **(2) Food production supervision system is basically improved**

The State Council changed sessional management mode and adjusted food supervision functions to carry out a management mode that was similar to American Food and Drug Administration (FDA) (Zhang and Xing, 2012) (Zhang et al., 2012). Therefore, Chongqing took the opportunity and established a food production supervision system that was supported by laws and morality, as well as perfect management mechanism and scientific enterprise credit evaluation system

#### **(3) Measures taken in construction of food credit system**

First, an accountability system was established. In order to further promote food supervision departments to administer by law and enhance role of government in construction of food credit system, an accountability system of government food security supervision in Chongqing was established, which stipulated the range of responsibility investigation. Second, credit archive

management was improved, which is to integrate dispersive enterprise credit archives, improve archive management and establish enterprise credit information database. Third, industry associations were established. Industry associations were firstly established in snack food industries with good conditions as test units to improve self-regulation of industries. Forth was to enhance publicity and training. Brand education and honesty education were carried out to particularly improve enthusiasm of enterprises to set up famous brands as well as to improve scientific management level (Xu et al., 2016).

In conclusion, the mass transfer of labor force makes the credit system of food production enterprises difficult to sustain, moreover the production state in small and medium food production enterprises in countries has to be maintained, which inhibits the formation of the high-efficient and mature credit systems in food production enterprises. As a result, potential risks will be seen in the credit system of food production enterprises.

## CONCLUSIONS

Taking Chongqing as the research object and on the basis of former theoretical reviews, this study analyzes characteristics and dynamic mechanism of population transfer during urbanization, and results show that trans-department transfer of population deviates from urbanization of population greatly. Although development of rural industrialization makes large amount of rural labors transfer to non-rural departments, spatial transfer of population is not in accordance with trans-department transfer of population. During a long period in future, industrial development is still an essential stimulating factor of urbanization. Although urbanization can accelerate the development of service industry and service industry will further improve urban transfer rate in return, our analysis indicates that the current social security system is facing with the problem of insufficient agricultural labor supply, and the main driving force of urbanization will remain to be the secondary industry in a long period. Besides, the study also put forward strategies that can improve credit system of food production industries in Chongqing: first is to improve government supervision system, including construction of food supervision long-term mechanism, improvement of government supervision and mechanisms of penalty dishonesty, etc.; second is to promote development of socialized management mode and social supervision, including making industry associations fully play a role in credit system construction, enhance honesty education and improve supervisory functions of the media, etc.; third is to strengthen internal credit management of enterprises, including construction of normative internal credit management system of enterprises and improvement of workers' quality of professional ethics, etc.



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