

The Impact of Rural Labor Mobility on Economic Development in Liaoning, China

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Abstract. The impact of rural labor mobility on rural economy is slightly different due to different development level, incoming, etc. in rural areas. In this paper, based on the data processing from Liaoning Statistical Yearbook of 1999-2010, the correlative analysis between rural labor mobility and economic development in Liaoning province was carried out. Consequently, the rural labor mobility has a positive role on promoting rural economic development in Liaoning province. In the survey questionnaire, SPSS package was used to make a statistical analysis on the characteristics of rural labor mobility in Liaoning province, finding the current major problems of rural labor mobility, and proposed the suggestions to solve problems.

Introduction

Farmers from agriculture to non-agricultural, rural to urban migration are the only way of transformation of a traditional agricultural society to a modern industrial society. Since the reform and opening up in 1978, rural to urban migration has been a historical phenomenon in China, which drives industrialization, urbanization, and economic growth. The migration also encourages labor market development through labor mobility and labor reallocation. In terms of rural labor mobility and rural economy, many researchers have made detailed investigations, analyses and researches, and have achieved several analytical or theoretical frameworks.

A labor migration framework was provided to trace the complex linkages that exist among migration, remittances, and agricultural productivity[1,2]. The impact of labor migration on domestic agricultural production is double. The net impact of migration and remittances on maize production is negative in the household sample. On the other hand, providing households with credit by reforming the formal rural credit system or encouraging informal credit institutions could increase households' production efficiency, and keep them from sending migrants out into the labor force primarily for financing on-farm activities.

The literature regarding the impact on rural economy focuses on agricultural production, rural income and household. Some researchers suggested that the rural labor mobility has a positive impact on rural economic development[3-6]. Some researchers thought that the rural labor mobility has a negative impact on rural economic development[7-9]. Other researchers reported that the agricultural output has no relationship with the rural mobility[10,11].

The overall goal of this paper is to find the relationship between rural labor mobility and economic development in Liaoning. First, a model in [11] is used to estimate the number of rural labor mobility. Then, after the selection of indexes of measuring the level of rural economic development, the correlative test between rural labor mobility and economic development is examined. Finally, the current problems of rural labor mobility are discussed, and suggestions of solving these problems are also given to help decision making.

Correlative Analysis between Rural Labor Mobility and Economic Development

Estimation of the Number of Rural Labor Mobility in Liaoning. There are several models that can estimate the number of the rural labor mobility. This paper used the calculation model in [11], in which the number of the rural labor mobility can be obtained in the following equations.

$$\text{Rural migrant workers} = \text{Urban employees} - \text{Urban workers} \tag{1}$$

$$\text{Non-agricultural labor force} = \text{Rural workers} - \text{Agricultural workers} \tag{2}$$

$$\text{Rural labor mobility} = \text{Rural migrant workers} + \text{Non-agricultural labor force} \tag{3}$$

It can be seen from the data that the number of migrant workers and non-agricultural labor force increased annually since 1999. The population in 2010 is twice than that in 1999, reaching 108 million, accounted for 65% of total rural household population shown in Table1.

Table 1 Estimation of rural labor mobility from 1999 to 2010 in Liaoning

Year	Population(10 thousand)						
	Urban employees	Urban workers	Rural migrant workers	Rural workers	Agricultural workers	Non-agricultural labor force	Rural labor mobility
1999	1093.2	866.6	226.6	901.2	643.2	258	484.6
2000	1086	826.5	259.5	996	651.2	344.8	604.3
2001	1091.8	781.3	310.5	977.5	649	328.5	639
2002	1031.9	685.4	346.5	993.4	659.2	334.2	680.7
2003	1002.6	641.2	361.4	1016.3	667.3	349	710.4
2004	1013.5	626.8	386.7	1083.8	685.8	398	784.7
2005	1006.8	609.5	397.3	1113.5	686.4	427.1	824.4
2006	995.2	596.7	398.5	1132.9	680.9	452	850.5
2007	1027	582.4	444.6	1153.6	669.1	484.5	929.1
2008	1033.5	585.6	447.9	1164.7	662.3	502.4	950.3
2009	1096.6	572.1	524.5	1180.5	661	519.5	1044
2010	1109	572.8	536.2	1208.5	663.6	544.9	1081.1

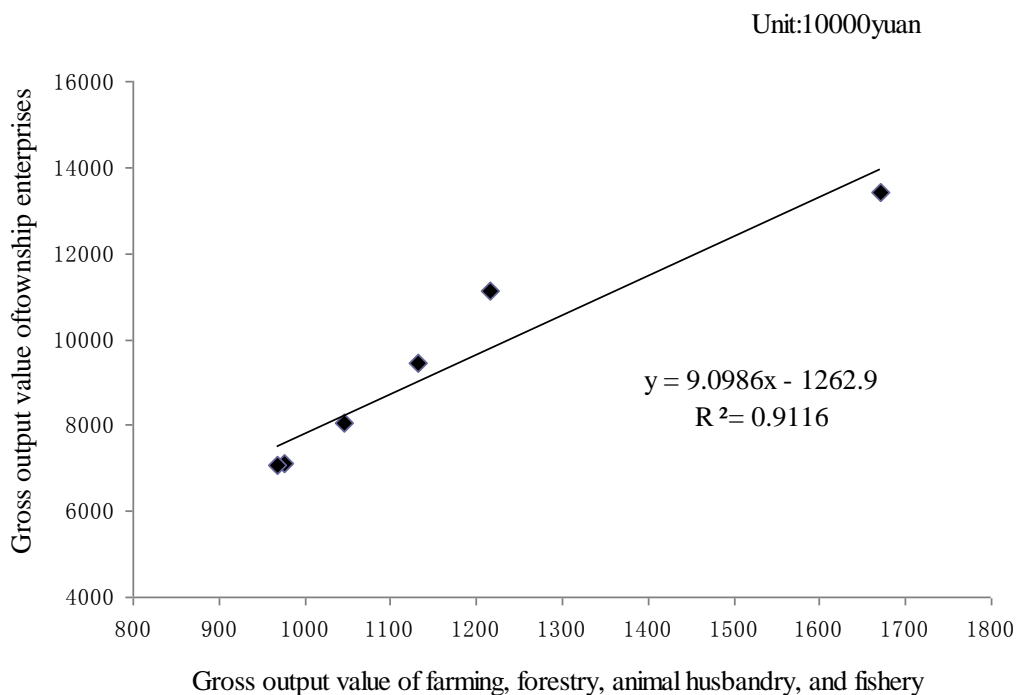


Figure 1. Gross output value of farming, forestry, animal husbandry, and fishery vs township enterprises

Selection of Indexes Measuring the Level of Rural Economic Development. The rural economic development is mainly reflected in the three aspects, i.e. the growth of gross output value of agriculture, non-agriculture, and rural per capita net income. Hence, we selected two macroeconomic indexes reflecting the rural economic development of indicators (Gross output value of farming, forestry, animal husbandry, and fishery, as well as gross output value of township enterprises), two specific indexes reflecting the rural economic development (per capita grain output and aquatic products), and an index reflecting the rural income (per capita net income of rural residents), to measure the level of rural economic development in Liaoning as shown in Table 2.

Table 2 Main indexes of rural economic development

Year	Per capita value ^a (Yuan/Person)				
	Net income	Farming, Forestry, Animal Husbandry, and Fishery	Output value of township enterprises	Grain output (kg/Person)	Aquatic products (kg/Person)
1999	2501.0	2381.31	17313.32	395.3	80
2000	2355.6	2339.37	17081.47	275.7	81.9
2001	2557.9	2521.58	19384.62	336.2	84.6
2002	2751.0	2725.37	22732.83	363.5	90.2
2003	2934.0	2919.55	26755.57	360.0	91.8
2004	3307.1	3619.87		412.0	96.5
2005	3690.2	3990.26	32011.36	416.7	101.5
2006	4090.4	4128.11	25775.46	435.8	83.4
2007	4773.4	5028.71	24770.42	424.7	85.4
2008	5576.5	5833.35		438.1	116.6
2009	5958.0	6354.79		368.4	123.8
2010	6907.9	7306.5		403.6	98.1

a. Data calculated from total value and population in *Liaoning Statistical Yearbook*. The blanks are missing data.

Table 3 Correlation between rural labor mobility and the indexes of economic development

Explanatory variable	Correlation coefficient
Per capita Farming, Forestry, Animal Husbandry, and Fishery	0.958
Per capita net income	0.948
Per capita output value of township enterprises	0.746
Per capita grain output	0.503
Per capita Aquatic products	0.692

Because the output value of township enterprises in 2004 is missed, we calculate the value by using the linear regression model through the data of 1999-2003. As shown in Fig.1, the calculated output value of township enterprises is 124.8 million yuan, while per capita annual value is 299.09 million yuan.

Correlative Test Between Rural Labor Mobility and Economic Development. Through the calculation of the population of rural labor mobility and the indexes of rural economic development, we can discover that the trend between the main economic indexes and the rural labor movement is consistent. We can assume that the relationship between them is a positive correlation. Hence, we used Pearson correlation analysis method of two-tailed test to check the correlation between the rural labor mobility in Table 1 and each index of economic development in Table 2. From Table 3, we can see that the top two indexes reach up to 0.958 and 0.948 respectively, with a close relationship to the rural labor population; the next two indexes reach up to 0.746 and 0.692 respectively, with a general relationship to the rural labor population; the last one index of per capita grain output reach 0.503, without a relationship to the rural labor population.

From the analysis on samples in Liaoning, it can be shown that the rural labor mobility has a positive role in promoting the development of rural economy, especially in the growth of output value of farming, forestry, animal husbandry and fishing, the development of township enterprises, the increased production of aquatic products, and the increase of rural income. The possible negative impact of rural labor mobility, such as the shortage of labor for rural economic development, the irrational structure of rural labor, etc, has not reflected in Liaoning.

Problems of Rural Labor Mobility in Liaoning

To discover the problems of rural labor mobility in Liaoning, an in-depth investigation of this social group should be conducted. We developed a questionnaire, and used the SPSS statistical analysis software to make cross-correlation analysis statistical calculations on the results of the questionnaire, summarized the basic characteristics of rural labor mobility in Liaoning, and discovered the main problems of rural mobile labor mobility in the following.

Lack of Orientation, Disorderly Movement in Liaoning. Survey shows that the population of rural labor movement is mainly young people, 30 years old 54% of the total migrant population. 70.4% flow of the labor movement in the province as the principal. On the flow mechanism, dominated by spontaneous flow, and all kinds of social relations as the basis, along the social relationship of consanguinity, geopolitics, business edge outward flow, lack of clear mobile Guide, in addition to the mobile workforce is 8.9% by the home government sector organizations outside Government labor output and the remaining rural labor flow mainly by friends of relatives introduction and intermediaries to complete.

Slow Growth of Rural Non-Farm Industry, and Lack of Labor Movement in Local Area. At present, China's non-farm industry is still dominated by township enterprises. We can see from Table 1, an increase in output of township enterprises, an increase in the number of rural non-farm labor in Liaoning since 1999, but the relative growth rates of gross output value of farming, forestry, animal husbandry and fishing in Liaoning, GDP grew at a slightly slower of township enterprises, agricultural prosperity absorption function of the labor force is far from enough. The transfer of rural labor force has a strong local and industry, be able to reduce labor to non-farm industries as well as the opportunity cost of the transfer of risk, a large number of farmers to ease urban congestion caused by migrant workers, the burden of heavy traffic and other issues, more conducive to rural secondary three industrial development, it is worth attention.

Lack of Support of the Household Registration and Social Security System, and Stability Limitation of Rural Labor Mobility. Survey results show that 64.6% percent of rural labor force has a strong desire to stay in the city life. They have a higher awareness to live in the city. At the same time, respondents also made it clear that the job opportunities, their children go to school, social security, housing and living conditions, and other concerns, are being ignored by exclusion.

Suggestions of Solving the Problems of Rural Labor Mobility

Guide the Orderly Movement of Rural Labor with the Goal of Urbanization Process. Along with the acceleration of the process of economic development, urbanization, development of urban infrastructure, labor movement of rural-to-urban have become major channels of absorbing employment. Liaoning's goal is to promote urbanization process, reaching around 70% of urbanization the end of 2015. The urban population reach more than 30 million people, new population of more than 4 million people; while the provincial municipality population size reach 1 million people or more, average county population size up to 250 thousand people, average county population size up to 100 thousand people. Take 2010 statistical yearbook data as an example, total provincial population is 42.56 million, in which agricultural population is 21.119 million, non-agricultural population is 21.441 million with the level of urbanization 50.4%. From the geographical distribution of population, Fuxin, Liaoyang, Tieling, Chaoyang and Huludao, their

non-agricultural population has not yet reach 1 million, especially in resource-exhausted city of Fuxin, its non-agricultural population totals only 858 thousand, and is reducing year by year. Hence, the orderly movement of rural labor can help implement the goal of urbanization in Liaoning, and promote the process of construction of small cities and towns, as well as the development of secondary and tertiary industries in rural areas. Consequently, it can help rural force to promote income from off-farm. On the other hand, it also can help rural force to get employment from non-agriculture work, reducing the pressure on agricultural resources.

Focus on the Development of Non-Farm Industry to Absorb Rural Surplus Labor. Statistical Yearbook data show that in Liaoning agricultural population are still disproportionately high, agriculture surplus labor force in cities alone of non-farm industry cannot absorb. Therefore, in order to focus on local movement of agricultural labor this can avoid the emergence of migrant workers' social problems, such as crime, easing due to a large number of blind movements of the rural population to the pressure arising from urban transport and other infrastructure, etc. We can effectively solve the problem of rural old people and children left by promoting agricultural industrialization, developing labor-intensive industries, promoting scale management of agriculture, the development of collective economy, increasing production efficiency, the development of rural non-farm industries, placement of surplus agricultural labor and increasing rural income, and other important measures maximizing the local movement of rural labor.

Increase Investment in Vocational Skill Training, and Enhance the Competitive Abilities of Rural Labor. It is the responsibility of local government to help rural workers to master a professional skill, enable them to settle down in the city. Survey results show that the current cultural quality of rural labor force levels in Liaoning also remain at the intermediate level, with the lack of professional skill and retraining of the possibility of reducing, make the rural migrant labor in the work of industry manufacturing process, housekeeping and security. Hence, the wage level is lower than the city average. To prevent the rural labor force back to hometown due to poor labor skills, we must develop the rural education for the generally low cultural level of rural labor force characteristics, improving their scientific and cultural quality.

Improve the *Hukou* and Social Security System to Achieve Seamless Connection of Labor Mobility. Survey shows that a new generation of rural migrants has a high degree of awareness of urban life. They are eager to be able to live in the city with a long time. The rural migrant workers, as a special group in the city, have made great contributions to urban economic development. However, due to differences in *hukou* system, most of them are still not truly integrated into urban society, but a round-trip "Migrant" between urban and rural groups. This is not conducive to the further development of urbanization and urban and rural integration process. To change this status, the *hukou* system reform must be conducted to avoid urban and rural isolation. The *hukou* system associated with housing, health care, pension and social welfare, education, social assistance and other civic and social rights issues still form an obstacle to free movement of rural labor. Therefore, before ultimately abolishing of *hukou* system for urban and rural isolation, it should implement the residence registration system, to eliminate the worries of rural migrants.

Conclusion

This paper has explored the impact of rural labor mobility on economic development using a survey in Liaoning province. Our findings in this paper suggest that the rural labor mobility has a positive role on promoting rural economic development in Liaoning province. The main obstacles focus on abolishing of the *hukou* system to promote the social security protection. We believe that policies such as those recommend in this paper will increase growth in Liaoning and help to narrow the difference between urban and rural areas.

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