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Empirical analysis of institutional constraints' influence on new-type urbanization

Yongxiang Wang

East China Jiao Tong University, Mechanical & Civil Engineering College, Chian

ABSTRACT

Urbanization has become the national strategy of our country. It is a prolonged complicated project. As the relationship between urban and rural area is shackled by the planned economy and some systems interfere badly with each other, development of urbanization is shackled. How to establish a new-type urbanization system domestically has become a priority to our country. This paper will do the theoretical analysis based on optimized Todaro Model and generate relative hypothesis to elaborate the relationship and mechanism of action between domestic migrations and system improvement in urbanization. In this paper it also uses econometric model to test what influences will be brought to urbanization by the changes of rural land system, national support system for agriculture, national agricultural pricing system household registration system, social security system and other relative institutional constraints. Systematic researches on different systems' contribution to urbanization will provide scientific basis for a better development of new-type urbanization.

Keywords: institutional constraints; new-type urbanization; development; Empirical analysis

INTRODUCTION

With the continuously improvement of productivity, human society gradually enters the historical stage of regarding towns as the core of development. At the same time, the level of urbanization becomes an important standard of measuring a country or region's economy and the level of social development. Urbanization is not only an objective law of civilization but also a process of the transformation of human society, cultural reconstruction and social change. It mainly shows from three aspects. First, the majority in the economic structure is changing from agriculture to non-agriculture. Second, the proportion of rural population is constantly decreasing. Third, people's lifestyle is changing into an urban way.

Nowadays, countries and regions worldwide set their economic, cultural and political system around urban areas. After the modern industry comes into being, our country also starts its process of modern cities 'construction. In addition, China's reforming and opening brings a period of fast development of urbanization. Since the fifteenth national congress, a series of decisions made by our party and country also made it clear about the importance of urbanization from a strategic height and pointed out the key role of urbanization in solving the three rural issues. It also pointed out what we needed and where to go. As an agricultural country, the majority of the population in our country is still concentrated in rural areas. So "three agricultural issues" is always a fundamental problem of national development. At the present stage, the key point of rural reform and development in our country is to stabilize the basic policy in rural areas in order to adjust the industrial structure of agriculture and develop moderate scale economy. Moreover, we can implement agricultural industrialization and informatization and promote the industrialization, modernization and urbanization in rural areas. So, realization of urbanization is not only the inevitability of history but also the basic conditions of solving "three rural issues". Only continuously driving urbanization can we play the scale effect of land and improve intensive management of agriculture and township

enterprises. We can also promote the process of population's gathering in towns and the development of industrial clusters in rural areas. In that way, we can vigorously promote new-type urbanization in our country.

This paper will do the theoretical analysis based on optimized Todaro Model and generate relative hypothesis to elaborate the relationship and mechanism of action between domestic migrations and system improvement in urbanization. In this paper it also uses econometric model to test what influences will be brought to urbanization by the changes of rural land system, national support system for agriculture, national agricultural pricing system household registration system, social security system and other relative institutional constraints. Through researches on different systems' contribution to urbanization, this paper will raise feasible plans for reforming, construct the policy support system for urbanization and provide China's urbanization with theoretical references in order to help make the relative policies.

2.Theoretical analyses: Construction of Optimized Todaro Model

In essence, the question on how much institutional constraints influence urbanization is a question on whether a free flow population is allowed or not. This paper tries to construct a theoretical model to analyze influences of relative institutional constraints (Specifically as follows: land system, household registration system, etc.) with the help of optimized Todaro Model in order to explore systemic factors internal constraints mechanism to urbanization.

2.1. Foundation of Model Construction: Investigation on Todaro Model

From Todaro's point of view, not only the real income difference but also the expected income difference speculated by the urban employment rate will influence the migration from rural to urban areas.

The decision whether farmers would like to migrate to urban areas can be expressed in the formula below:

$$M = f(pW_u - W_r), \quad f' > 0$$

M represents that in the t period the migration population to cities and towns. p represents the probability of getting a job in urban areas, W_u is the income level in urban area. pW_u represents the expected real income and W_r the real income in rural areas. $pW_u - W_r$ is the expected income difference between urban and rural areas. When the difference is greater than zero, $M > 0$, it means that farmers would like to migrate. $f' > 0$ represents that labor migration is an increasing function to the expected income difference. In other words, the greater the difference is, the more population will migrate.

2.2 .The Basic Assumption of the Model

Suppose there are two economies. One is the urban sector that concludes formal and informal sectors. The other is rural sector. During the process of urbanization, plenty of rural population enters the urban areas. And these people can be divided into two groups, migration population and floating population. Floating population refers to those who enter urban informal sectors and don't live in urban areas permanently. As for migration, it refers to those who enter urban formal sectors. They live in urban areas permanently and become urban residents. Those who don't enter the urban areas keep engaging in farming.

According to Todaro Model, $M=f(d)$, $f'>0$, M represents the population that enters the urban areas and d represents the expected income difference.

In order to facilitate the research, we set five hypotheses:

(1) The level of per capita income of urban formal sectors >the level of per capita income of urban informal sectors > The level of per capita income of agricultural sectors. Suppose the level of per capita income of agricultural population in rural areas is w_1, the level of per capita income of urban informal sectors is w_2 and the level of per capita income of urban formal sectors is w_3, then $w_1 < w_2 < w_3$.

(2) Population in agricultural sectors can enter both urban formal sectors and informal sectors. Since there are institutional constraints, possibility of agricultural population entering urban informal sectors is S_2 and probability

of entering urban formal sectors is S_3 and the probability of population of urban informal sectors entering formal sectors is S_4. The probability of agricultural population (including formal and informal sectors) is influenced by two kinds of systems. As the scopes of two systems that can take effect are different, we divide them into two sets. Set I is the rural system set I that regards rural land system as its core. The second one is the urban employment system set II that relies on household registration system. The two sets have different targets, too. When farmers float from rural areas to urban informal sectors, they will be restrained by set I because in essence they are farmers. If we don't consider the situation of entering formal sectors, they will eventually go back to rural areas. When the population of urban informal sectors migrates to formal sectors, they are only restrained by set II because to some degree they have already got rid of the rural land system's influence. However, if farmers directly enter urban formal sector from rural areas, they should get rid of set I and be influenced by set II.

It is generally believed that when $S_2 > S_3$, $S_4 > S_3$, that is it is more difficult for agricultural population entering urban formal sectors than entering informal sectors and it is more difficult for agricultural population entering urban formal sectors from rural area than entering from urban informal sectors.

As for the numerical relationship, we assume:

① $S_2 = S_I$;that is the possibility of agricultural population entering urban informal sectors equals the probability of population migration within the constraints of set I.

② $S_4 = S_{II}$;that is the possibility of population in urban informal sectors entering urban formal sectors equals the probability of population migration within the constraints of set II.

③ $S_3 = f(S_I, S_{II})$;that is the possibility of agricultural population entering urban informal sectors equals the probability of population migration within the dual constraints of set I and set II.

As a result, $S_3 = f(S_4, S_2)$, this means that the probability of population from rural areas entering urban formal sectors directly is the function of the probability of population entering urban informal sectors from rural areas and the probability of population from informal sectors entering formal sectors. The degree of difficulty is relatively high.

(3) People's pursuit of high income leads to the trend of rural population floating into urban areas. Suppose that unemployment problems exist in neither agricultural sectors nor non-urban sectors, and then the only constraint of migration is relative systemic problems. Suppose the level of expected per capita income of agricultural population in rural areas is w_1. Considering the probability of them entering urban areas, the level of expected per capita income of population of informal sectors is $w_2 S_2$ and that of the population of formal sectors is $w_3 S_3$. Suppose that $w_3 S_3 > w_2 S_2 > w_1$.

(4) The total population of our country is N, population of agricultural sectors in rural areas is N_1, population of urban informal sectors is N_2 and population of urban formal sectors is N_3. Then $N = N_1 + N_2 + N_3$.

Those of urban informal sectors belong to the floating population that entering urban areas from rural areas. They will not live in urban areas permanently and eventually go back to rural areas. As a result, in fact rated total rural population is $N_1 + N_2$. Suppose at the very beginning the total population of our country is rural population and urban population is zero. And at this stage, $N = N_1$.

(5) Population of urban informal sectors still belongs to rural population and its income also belongs to the total income of rural population. So the total income of rural population is: $N_1 w_1 + N_2 w_2$. And that is the total income of both agricultural sectors and urban informal sectors.

The analysis of urbanization, in other words, is to analyze the floating from rural population to urban population. So the angel of agricultural population is the premise and starting point of the five hypotheses above. If the expected income of urban informal sectors or formal sectors is higher than that of agricultural sectors, then there will be a population flow. On the contrary, the present situation of population distribution will be maintained.

In the hypotheses, the division of urban formal sectors and informal sectors is virtual and has no practical significance. However this division in theory is necessary, especially the informal sectors part. The body it contains is the farmers that temporarily leave the land but cannot become urban residents. They may go back to rural areas eventually. As urbanization in China has its own particularity，farmers in China cannot become urban residents to a great extent. They play the roles as farmers who enter urban areas to pursue for higher income. As a result, a great number of migrant workers appear. From the aspect of the result of urbanization, when it is over and the rate of urbanization is stabilizing, only will urban and rural areas exist. However, nowadays, as the product of the transition period of urbanization, migrant worker is a large that cannot be ignored. So we assume that there exists a "informal sectors" in order to analyze the situation.

2.3. The Establishment of the Model

According to Todaro Model and the five hypotheses above, we establish four basic models.

2.3.1. The Population Flow Model Between Urban Formal Sectors and Rural Areas

$$\begin{aligned} &M = f(d),\ f' > 0, \\ &d_0 = w_3 S_3 - w_1 \end{aligned} \tag{1}$$

$d_0$represents the difference of expected per capita income between urban formal sectors. $w_3 S_3$ represents the expected per capita income of urban formal sectors. $w_1$represents the expected per capita income of agricultural sectors.

2.3.2. The Population Flow Model Between Rural Area and Urban Informal Sectors

$$\begin{aligned} &M = f(d),\ f' > 0, \\ &\frac{\partial N_1}{\partial S_2} = \frac{N_2 w_2 (w_1 - w_2 S_2 + d_1) + w_2 N_2 (w_2 S_2 - d_1 - w_2)}{(w_1 - w_2 S_2 + d_1)^2} \quad w_2 S_2 - d_1 - w_2 \neq 0 \end{aligned} \tag{2}$$

$w_2 S_2$represents the expected income of urban informal sectors. $\frac{w_2 N_2 + w_1 N_1}{N_1 + N_2}$ represents the expected income of rural population. $d_1$represents the difference of expected income between urban informal sectors and rural population.

2.3.3. The Population Flow Model Between Rural and Urban Formal Sectors

$$d_2 = w_3 S_3 - \frac{w_2 N_2 + w_1 N_1}{N_1 + N_2} \tag{3}$$

$w_3 S_3$ represents the expected income of urban formal sectors. $\frac{w_2 N_2 + w_1 N_1}{N_1 + N_2}$ represents the expected income of rural population. $d_2$represents the difference of expected income between urban formal sectors and rural population.

2.3.4 .The Population Flow Model Between Urban Informal Sectors and Formal Sectors

$$\begin{aligned} &M = f(d),\ f' > 0, \\ &d_3 = w_3 S_4 - w_2 \end{aligned}$$

$w_3 S_4$ represents the expected of urban formal sectors. w_2 represents the expected of urban informal sectors. d_3 represents the difference of expected income between urban formal sectors and urban informal sectors.

According to equation (2):

$$w_2 S_2 = d_1 + \frac{w_2 N_2 + w_1 N_1}{N_1 + N_2}$$

So:

$$d_3 = w_3 S_4 - (d_1 + \frac{w_2 N_2 + w_1 N_1}{N_1 + N_2}) \frac{1}{S_2} \quad (4)$$

When S_2 , S_4 take effects at the same time, suppose $S_3 = S_2 S_4$, then

$$d_3 = w_3 S_4 - (d_1 + \frac{w_2 N_2 + w_1 N_1}{N_1 + N_2}) \frac{S_4}{S_3} \quad (5)$$

This model analyzes the population flow between urban informal sectors and formal sectors that is caused by the difference of expected income between departments. As people enter formal sectors through urban informal sectors instead of rural areas, so the employment probability is S_4. So the expected income of urban formal sectors is $w_3 S_4$.

2.4.Analysis on Model's Deformation

According to the four models above, we get the formula of the population flow under the influence of systemic factors. If we make proper deformation to them, following situations will occur:

(1) According to equation (2), we can get $w_2 N_2 + w_1 N_1 = (w_2 S_2 - d_1)(N_1 + N_2)$ after the deformation. After sorting we get that:

$$N_2(w_2 S_2 - d_1 - w_2) = N_1(w_1 - w_2 S_2 + d_1)$$

Further N_1 and N_2 can be represented as:

$$N_1 = N_2 \frac{(w_2 S_2 - d_1 - w_2)}{(w_1 - w_2 S_2 + d_1)} \quad , \quad w_1 - w_2 S_2 + d_1 \neq 0$$

$$N_2 = N_1 \frac{(w_1 - w_2 S_2 + d_1)}{(w_2 S_2 - d_1 - w_2)}, \quad w_2 S_2 - d_1 - w_2 \neq 0$$

Now we solve the partial differential result of N_1 and $= \frac{N_2 w_2 (w_1 - w_2)}{(w_1 - w_2 S_2 + d_1)^2} (w_1 - w_2) < 0$ to S_2 separately. After that we can get conclusion 1and conclusion 2.

Conclusion 1:

$$\frac{\partial N_1}{\partial S_2} = \frac{N_2 w_2 (w_1 - w_2 S_2 + d_1) + w_2 N_2 (w_2 S_2 - d_1 - w_2)}{(w_1 - w_2 S_2 + d_1)^2}$$

$$= \frac{N_2 w_2 (w_1 - w_2)}{(w_1 - w_2 S_2 + d_1)^2}$$

As $(w_1 - w_2) < 0$, $(w_1 - w_2 S_2 + d_1)^2 > 0$, we can know that:

$$\frac{\partial N_1}{\partial S_2} = \frac{N_2 w_2 (w_1 - w_2)}{(w_1 - w_2 S_2 + d_1)^2} < 0$$

This means when the change of set I causes the increase of the probability of population flow from rural areas to urban informal sectors, the rural population decreases.

Conclusion 2:

$$\frac{\partial N_2}{\partial S_2} = \frac{-N_1 w_2 (w_2 S_2 + d_1 - w_2) - w_2 N_1 (w_1 - w_2 S_2 + d_1)}{(w_2 S_2 - d_1 - w_2)^2}$$

$$= \frac{N_1 w_2 (w_2 - w_1)}{(w_2 S_2 - d_1 - w_2)^2}$$

As $(w_2 - w_1) > 0$, $(w_2 S_2 - d_1 - w_2)^2$, we can know that:

$$\frac{\partial N_2}{\partial S_2} = \frac{N_1 w_2 (w_2 - w_1)}{(w_2 S_2 - d_1 - w_2)^2} > 0$$

This means when the change of set I causes the increase of the probability of population flow from rural areas to urban informal sectors, the population of urban informal sectors increases.

As we can see, Conclusion 1 and conclusion 2 shows and the same time that when the probability of farmers getting a job in urban formal sectors increases with the help of a improved system, the labor will float from the rural areas to urban informal sectors.

(2) According to equation (3) $d_2 = w_3 S_3 - \frac{w_2 N_2 + w_1 N_1}{N_1 + N_2}$, as $N=N_1+N_2+N_3$, so $N_1+N_2=N-N_3$, $N_1=N-N_2-N_3$. Then the deformation of equation (3) becomes:

$$d_2 = w_3 S_3 - \frac{w_2 N_2 + w_1 N_1}{N-N_3}$$

Further we can get that:

$$N_3 = N + \frac{N_2(w_2 - w_1)}{w_1 - w_3 S_3 + d_2} \quad (6)$$

$$w_1 - w_3 S_3 + d_2 \neq 0$$

Now we solve the partial differential result of N_3 to S_3. After that we can get conclusion 3.

Conclusion 3:

$\frac{\partial N_3}{\partial S_3} = \frac{w_3 N_3 (w_2 - w_1)}{(w_1 - w_3 S_3 + d_2)^2}$, as $(w_2 - w_1) > 0$, we can know that :

$$\frac{\partial N_3}{\partial S_3} = \frac{w_3 N_3 (w_2 - w_1)}{(w_1 - w_3 S_3 + d_2)^2} > 0$$

This means when the improvement of the whole social system causes the increase of the probability of population entering urban formal sectors from agricultural sectors, urban population increases.

As $N=N_1+N_2+N_3$, so $N_3 = N-N_1-N_2$. Substitute it into equation (6) and we can get that:

$$N_3 = N - N_1 - N_2 = N + \frac{N_2(w_2 - w_1)}{w_1 - w_3 S_3 + d_2}$$

$$N_1 + N_2 = -\frac{N_2(w_2 - w_1)}{w_1 - w_3 S_3 + d_2}$$

$$N_1 = -N_2 - \frac{N_2(w_2 - w_1)}{w_1 - w_3 S_3 + d_2}$$

$$N_2 = -N_1 + \frac{N_1(w_2 - w_1)}{w_2 - w_3 S_3 + d_2}$$

Now we solve the partial differential result of N_1+N_2, N_1 and N_2 to S_3 separately and we can get conclusion 4.

Conclusion 4:

$$\frac{\partial (N_1+N_2)}{\partial S_3} = -\frac{w_3 N_2 (w_2 - w_1)}{(w_1 - w_3 S_3 + d_2)^2} < 0$$

$$\frac{\partial N_1}{\partial S_3} = -\frac{w_3 N_2 (w_2 - w_1)}{(w_1 - w_3 S_3 + d_2)^2} < 0$$

$$\frac{\partial N_2}{\partial S_3} = \frac{w_3 N_1 (w_2 - w_1)}{(w_1 - w_3 S_3 + d_2)^2} > 0$$

This shows that when the improvement of the whole social system causes the increase of the probability of people of agricultural population and urban informal sectors entering urban formal sectors, rural population decreases. At the same time, population of urban informal sectors decreases, too. In other words, population of agricultural population and urban informal floated into urban formal sectors increases. At this stage, the increase of S_3 represents the systemic improvement. We can also say that the increase of the probability of population directly entering the urban areas is caused by the improvement of both set I and set II.

The main reason is that the decrease of agricultural population caused by rural population's migration to urban areas leads to the increase of per capita land possession, in other words, the agricultural production efficiency. The expected per capita income of farmers increases, too. When the expected income of urban informal sectors doesn't change, the difference of the two incomes decreases. In other words, d_3 decreases. As a result, rural population flow to urban informal sectors decreases.

(3) According to equation (2), $N_1 + N_2 = N - N_3$, we can know that:

$$d_1 = w_2 S_2 - \frac{w_2 N_2 + w_1 N_1}{N_1 + N_2}$$
$$= w_2 S_2 - \frac{w_2 N_2 + w_1 N_1}{N - N_3}$$

So, $N_3 = N - \frac{w_2 N_2 + w_1 N_1}{w_2 S_2 - d_1}$, we solve the partial differential result of N_3 to S_2, and then we can get conclusion 5.

$$\frac{\partial N_3}{\partial S_2} = \frac{w_2(w_2 N_2 + w_1 N_1)}{(w_2 S_2 - d_1)^2} > 0$$

This shows that when the probability of agricultural population entering urban informal sectors increases, the number of rural population entering urban formal sectors will increase. As the system improves and S_2 increases, many farmers enter urban informal sectors and that leads to an increase to farmers' expected income. However there is still a great difference between the expected income of urban formal sectors and it. As a result, urban formal sectors still have great attractions and the population flow to urban area increases.

(4) According to equation (5), $N_1 + N_2 = N - N_3$, $N_1 = N - N_2 - N_3$, we can get that:

$d_3 = w_3 S_4 - [\, d_1 + \frac{w_2 N_2 + w_1 (N - N_2 - N_3)}{N - N_3}] \frac{S_4}{S_3}$, after sorting we get that:

$$N_3 = N + \frac{S_4 N_2 (w_1 - w_2)}{w_3 S_3 S_4 - w_1 S_4 - d_1 S_4 - d_3 S_3}, \quad w_3 S_3 S_4 - w_1 S_4 - d_1 S_4 - d_3 S_3 \neq 0 。$$

Now we solve the partial differential result of N_3 to S_4 and we can get conclusion 6:

$$\frac{\partial N_3}{\partial S_4} = \frac{N_2 d_3 S_3 (w_2 - w_1)}{(w_3 S_3 S_4 - w_1 S_4 - d_1 S_4 - d_3 S_3)^2} > 0$$

Similarly, according to equation (5), we can get that:

$N_1 = \frac{w_2 N_2 S_4 + d_1 N_2 S_4 - w_3 N_2 S_3 S_4 + d_3 N_2 S_3}{w_3 S_3 S_4 - w_1 S_4 - d_1 S_4 - d_3 S_3}$, we solve the partial differential result of N_1 to S_4, and we can get conclusion 7:

$$\frac{\partial N_1}{\partial S_4} = \frac{N_2 d_3 S_3 (w_1 - w_2)}{(w_3 S_3 S_4 - w_1 S_4 - d_1 S_4 - d_3 S_3)^2} < 0$$

In equation (5), N_1 、N_2 are in the some position. As a result, If we solve the partial differential result of N_2 to S_4 and we can get conclusion 8:

$$\frac{\partial N_2}{\partial S_4} = \frac{N_1 d_3 S_3 (w_1 - w_2)}{(w_3 S_3 S_4 - w_1 S_4 - d_1 S_4 - d_3 S_3)^2} < 0$$

Conclusion 6, conclusion 7 and conclusion 8 shows that when the urban employment system that relies on household registration system, social security system and other urban systems improve (characterized by the increase of S_4) the probability of people of urban informal sectors entering urban formal sectors increases and rural population decreases. In addition, the number of population that floats from rural areas to urban informal sectors decreases. The reason is that the systemic improvement reduces the threshold for rural populations entering urban formal sectors. Farmers who chose urban informal sectors before now choose to enter urban formal sectors directly and become urban residents.

2.5. Conclusion to theoretical Analysis

According to the analysis above, we can draw a diagram on the influence of systemic improvement to population flow in urbanization (see chart 1).

Chart1 :The Influence of Systemic Improvement to Population Flow in Urbanization

	N_1 (agricultural population)	N_2 (urban informal sectors population)	N_3 (urban informal sectors population)
S_2 (possibility of agricultural population entering urban informal sectors)	-	+	-
S_3 (possibility of agricultural population entering urban formal sectors)	-	-	+
S_4 (possibility of people in urban informal sectors entering urban formal sectors)	-	-	+

3. Empirical Analyses

With the help of the mathematical models, we get the conclusion that institutional constraints in urbanization will influence population flow. We will further use the econometric model to test the relative institutional constraints' influence to urbanization.

3.1. The Selection of Variables and Establishment of Model

(1) Selection of Explanatory Variables and Explained Variables

In the empirical part, the explanatory variable is the urbanization rate and the explained variables are land system in rural areas, agricultural support system, agricultural pricing system, household registration system and social security system.

(2) Establishment of Regression Model

We establish the model below based on the explanatory variable and explained variables:

$$U=C+\beta_0*S_0+\beta_1*S_1+\beta_2*S_2+\beta_3*S_3+\beta_4*S_4+\varepsilon$$

U represents the urbanization rate, C represents constant terms, S_0 represents the land system in rural areas, S_1 represents the agricultural support system , S_2 represents the agricultural pricing system, S_3 represents household registration system, S_4 represents social security system, β_0 , β_1 , β_2 , β_3 , β_4 represent the coefficients of the explanatory variable and ε represents the random error terms.

As the data of the rate of natural increase flows away for years, this paper choose the data between 2000-2012 in Nan Chang, the ratio of non operating land income and total income, the ratio of agriculture financial expenditure and fiscal expenditure, the ratio of agricultural product prices and agricultural production material price index, the ratio of newly added urban population and the urban migration of rural population and the ratio of social security expenditure and fiscal expenditure in the financial expenditure。The data is originated from STATISTICAL YEARBOOK OF JIANGXI (2000-2012) and other statistical yearbooks. We also do data calculations. [3-4]

3.2. Empirical Result and Analysis

With the help of SPSS16.0, we use least square method (OLS) to test the model we established above for regression. We get the result as following[5-6]:

$$U=-0.609+0.693*S_0+3.12*S_1+0.179*S_2+0.289*S_3+-0.1*S_4$$

$$R^2=0.971,\ F=33.485$$

(1) The Results of Empirical Model Test

According to the regression result we can know that the goodness of fit R^2 is 0.971. The value of R^2 after the adjustment is 0.942 and it is quite close to 1. It indicates that the estimated regression equation and the observations fit well. F is 33.485. According to F Distribution percentiles table, molecular freedom is 5 and denominator degrees of freedom is also 5, $F_{0.05}(5,5)=5.05$, $F=33.485>5.05$, so it passes the F test and the overall regression equation is significant. In other words, there exists significant linear relationship between urbanization rate and land system, financial agricultural support system, agricultural pricing system, household registration system and social security system.

Chart 2 Test Results Related to Variables

Variables	Coefficient	Standard Deviation	T-test Value	Sig.
constant terms	-0.609**	0.166	-3.676	0.014
land system	0.693**	0.690	4.525	0.001
financial agricultural support system	3.12**	0.008	-1.253	0.006
agricultural pricing system	0.179**	0.048	3.710	0.014
household registration system	0.289*	0.095	7.280	0.089
social security system	-0.1	0.137	2.108	0.266

**represents that the variable passes the test under the significant level of 10%.*
*** represents that the variable passes the test under the significant level of 5%.*
Data Source: Author arranges data according to the statistical data from SPSS

Chart 3 Results of Multicollinearity Test

Variables	Tolerance	VIF
land system	0.32	3.127
financial agricultural support system	0.296	3.377
agricultural pricing system	0.517	1.932
household registration system	0.242	4.125
social security system	0.258	3.883

Data Source: Author arranges data according to the statistical data from SPSS

From chart 2 we can see that the constant terms, land system, financial agricultural support system, agricultural pricing system all pass the confidence test under the significant level of 5%. Household registration system also passes the test under the significant level of 10%. It proves that those variables do influence the urbanization of Nan Chang. Social security system doesn't pass the t test under the level of 5% or 10%. So we can say that social security system has no significant influence to urbanization.

From chart 3 we can know that the values of tolerance are all higher than 0.1, the values of VIF are all lower than 10. As a result, we can say that there are no multi-collinearities among explanatory variables.

CONCLUSION

According to the test of operation results, we can prove that the independent variables chosen for the model do have close correlation with the level of urbanization and there are no multi-collinearities among independent variables. The effect of this regression model is overall good.

According to the analysis to results above we can know that both land system and household registration system have great influence to urbanization. We can see from the numerical values that the coefficient of land index is larger than that of household registration system, which means land system plays a more important role than household registration system does on the way of urbanization. Land system is the key to liberate farmers and it is this system that helps farmers float freely. We can say that it is the key system to migrate the manpower surplus in rural areas. Household registration system is important, too. However, its influence is relatively small. As for agricultural pricing system, it is more likely to be a benefiting project. As a result, the sequence of the contribution of three systems should be: land system, household registration system, and agricultural pricing system.

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