

Empirical Analysis of the Impact of the Employment Stability on Income of the Floating Populations in the Pearl River Delta Region

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Abstract-China has the largest floating population in the world, whose employment situation is not optimistic, and the employment stability is poor. From the view of labor search theory, the employee may switch his job to get higher income by searching in the labor market; from the view of human capital theory, stable employment can improve the level of human capital and thus increase their income for workers. What is the impact of the employment stability on income of the floating population in the PRD? This paper found that the stable employment had positive impact on income of floating population through the data of field research in Dongguan by the quantile regression; and put forward some corresponding policy suggestions based on the this conclusion.

Keywords-employment stability; floating population; quantile regression; Pearl River Delta; labor relation

I. INTRODUCTION

With reform and opening up thirty years ago, China's floating population rapidly grow. From 1982-2005, in a short span of 20 years, China's floating population grew from 6570000 to 147000000, an average annual increase of 14.5%. According to sampling survey results of the National Statistical Bureau, the total number of migrant workers reach 268940000 in 2013. Floating population not only solves the employment problem of rural surplus labor, but also provides the labor security for the urban economic development.

Because of internal and external factors, the employment stability of China's floating population is not high, which is mainly reflected in the working duration. National Health and Family Planning Commission "2013 China floating population development report" refer as stable employment if continuous working period of floating population last more than 3 years, or more than 3/4 duration in the inflow city in the work units. Through the survey found that 78.8% of rural household floating population is in stable employment, which, 51.9% is working for more than three years, 26.9% is working three years, but more than 3/4 of the duration in the inflow city. The employment stability of floating population under the

30 years of age (early career) is significantly less than 30 years old (occupational stability). At the same time, the report pointed out that the employment stability rural household floating population is low. Of course, this standard of the employment stability is still relatively low compared with the developed countries. In 1999, the median employment duration of 16-56 year old male is 7.5 years in German.

A. Review of Relevant Theories and Literature

According to the job search theory, constantly changing the job in the labor market purposes to make the worker itself more matching with the post, can improve the allocation of human capital, improve production efficiency, while improve labor income. The general rule of labor force flow is from the traditional industry to the modern industry, from the low income position to high income position. Therefore, it can be considered that the flow of labor force can promote the increase of its income. From the theory of human capital theory, employees can get more human capital through the enterprise training, "learn by working" and other ways to get more human capital, higher human capital can increase their income. Therefore, it can be considered that the stability of employment can promote the increase of its labor income.

Some scholars have studied the relationship between the stability of employment and the income of floating population. Most of the research is supported by the more stable employment, the increase in income. Luo Chuliang (2008) found that the difference between the wage income gap between the stable employment and the unstable employment group expands, and the influence of the employment stability on the wage income is also different in different income groups based on the survey data of urban household survey data in 2002 and 1995, Huang qian (2009) using the survey data of urban migrant workers, and combined with the Oaxaca-Blinder decomposition method, analyzes empirically wage income differences between migrant workers of the stable employment and migrant workers of unstable employment, and found that the stability of employment had positive effect on wage income. Of course, some scholars have

found that the conversion of work is positive impact on the income. Bai Nansheng (2008) found that most of the migrant workers through the flow can improve the income, and accumulate more human capital through the analysis of the data of migrant workers in Beijing. Deng Quheng (2007) analyze the income gap between urban residents and the floating population using the field survey data in 2002, and found that 60% of the gap between the two sources comes from employment discrimination. Parent Daniel (2000) using the GLS model and IV-GLS model, using the National Youth long-term survey data (NLSY) found that the impact of the duration of the work (special human capital accumulation) on employee wages is very small. Gueorgui Kambourov and Iouri Manovskii (2009) found that the effect of tenure occupational on wage income is positive through empirical analysis, 5 years of professional experience will raise wages 12%-20%; if the occupation duration taken into account, the industry and business impact on the income is small; and believed that the accumulation of specialized human capital is professional. The Pearl River Delta region is the developed area of China, but also the manufacturing intensive region, which has gathered a large number of floating population. This paper tries to analyze the influence of the employment stability of the employment stability on the income of the Dongguan field survey data.

B. Empirical analysis

Since the reform and opening up the Pearl River Delta economic developed rapidly. But in the past few years in the labor market, came up such as the "labor shortage", "mechanic shortage" and labor relations conflict, etc.. In order to understand the skill training in enterprises in Dongguan; 2010-2011, Dongguan City Bureau of human resources and Human Resources Research Institute of South China Normal University carry out the research project, and conducted a sample survey on the larger scale

enterprises in Dongguan, knew the situation of enterprise-training in Dongguan. We collected the enterprise questionnaire, personal questionnaire and training institutions questionnaire on research process, visited four districts includes Dongguan wanjiang, and others, 28 towns includes Songshan Lake, Humen, Shilong and others, 94 companies, 143 training institutions. investigated skill talent development status and trend in Dongguan City through the issuance of questionnaires and interviews and other forms. 2949 and 94 enterprise questionnaires were collected. The valid ratio of staff questionnaires is 94.24%, the enterprise questionnaire is 95% ,survey data has a strong representation. Due to the population structure of Dongguan, the population of the migrant population (which can also be considered as the floating population) accounted for more than 60%, Study on the employment and income of the floating population in Dongguan is typical. This paper will carry on empirical analysis based on the data.

From this survey situation, the employment stability of the floating population is insufficient, the wages are low. Because of the problem of specific salary was not setup in the staff questionnaire, the problem of the salary range is substituted, so the exact wage level is not mastered. The estimate of average wages of skilled personnel in Dongguan is 2500 yuan per month, the characteristics of distribution of wage levels is high in the middle and low in the two sides, the majority of skilled personnel wage levels between 920-3000 yuan. The wage level of floating population is positive relation with education level, skill level and professional ranks and titles. With advanced management and technology level can further improve the wage. From the different degree of skills of the personnel wages distribution structure, wages and education is a strong positive relationship, the higher education, the higher the general wage level.

TABLE 1 WAGE DISTRIBUTION OF DIFFERENT TYPES OF FLOATING POPULATION

Salary range	Senior management post	Middle and senior professional technical post	Skilled worker	General staff	Graduate student	Undergraduate course	Junior college or higher vocational college	Senior high school	Junior high school and below
900 以下	0	0	1%	2%	0	0	1%	2%	2%
901-2000	12%	12%	39%	67%	2%	17%	29%	45%	65%
2001-3000	28%	26%	43%	25%	13%	27%	34%	33%	29%
3001-4000	23%	31%	13%	4%	42%	23%	19%	13%	3%
4001-5000	18%	20%	4%	2%	29%	18%	10%	5%	2%
5000 以上	19%	11%	0	0	13%	15%	7%	3%	0

As the income of the floating population and the level of stability maybe not necessarily normal distribution, it can be analyzed by the quantile regression model. Quantile regression is used to model the conditional quantile of the dependent variable, and the regression parameters are estimated by minimizing the sum of the weighted residuals.

The distribution function of random variable is defined.

$F(y) = P(Y \leq y)$.the τ quantile of Y is

$F^{-1}(\tau) = \inf\{y : F(y) \geq \tau\}$, and the median can be

expressed as $F^{-1}(1/2)$. For a set of Y random samples $\{y_1, y_2, \dots, y_n\}$, Sample mean is optimal solution

$\min_{\xi} \sum_{i=1}^n (y_i - \xi)^2$
of The median of the sample is the minimum residual absolute value and the solution, that is

$F^{-1}(1/2) = \arg \min_{\xi \in R} \sum_{i=1}^n |y_i - \xi|$
For the rest of τ quantile can be solved by the following

$$\min_{\beta \in R^p} \left[\sum_{i \in \{i: y_i \geq \xi\}} \tau |y_i - \xi| + \sum_{i \in \{i: y_i < \xi\}} (1 - \tau) |y_i - \xi| \right], \text{ if}$$

$$\rho_{\tau}(z) = \tau I_{[0, \infty)}(z) - (1 - \tau) I_{(-\infty, 0)}(z)$$

Among them $I(\cdot)$ is indicative function. General linear conditional quantile function is $Q(\tau|X=x) = x'\beta(\tau)$. Parameter estimates are obtained by solving

$$\hat{\beta}(\tau) = \arg \min_{\beta \in R^p} \sum_{i=1}^n \rho_{\tau}(y_i - x_i'\beta) \quad . \text{ To arbitrary}$$

$\tau \in (0,1)$ Estimate $\hat{\beta}(\tau)$ Be called Regression coefficient estimation of the τ quantile.

In this paper, the influence of the employment stability of floating population on the income is analyzed by using the quantile regression. The income includes wages and social insurance benefits. the question of salary range institute of accurate wage income in staff questionnaire. But in the empirical analysis, it is not appropriate to distinguish the wage gap through the wage range of floating population. In the staff questionnaire, include the number of days per week and working hours per day, so this paper defined hour wages. Hour wage is equal to the average monthly wage level divided by the number of hours per month, where the average monthly wage is the median of the wage range, while the monthly working hours is 4 times per week working hours. The social insurance benefits are mainly selected whether to participate in the pension insurance and medical insurance. If the staff participate in the pension insurance, the wage income increased by 28%, if the medical insurance, wages increased by 10%. And the personal factors that affect the wage income, including the level of personal education, skills, working years, etc.. Their educational level refers to the level of education, including graduate education,

undergraduate education, College (vocational education) and high school. Skills level mainly refers to the qualification certificate, including: senior technicians, technicians, senior mechanic, intermediate mechanic and skilled workers.

After finishing the personal questionnaires, 1685 valid samples were obtained after the relevant information was not filled. Set up the dummy variable in the regression model. Which set up 4 virtual variables in the level of

education, Respectively is: $D_1 = 1$ Education for senior

high school, and $D_1 = 0$ then another; and $D_2 = 1$ said

College (vocational), $D_2 = 0$ said the other; $D_3 = 1$

undergraduate; $D_3 = 0$ said other; $D_4 = 1$ said

graduate education, $D_4 = 0$ said other;

$D_1 = D_2 = D_3 = D_4 = 0$ said junior high school and

below. $D_5 = 1$ Said to serve as senior management of the

enterprise, $D_5 = 0$ the other. Set up 5 virtual variables in

the skill level of the floating population. Among them,

$D_6 = 1$ the junior technicians, $D_6 = 0$ said the other,

$D_7 = 1$ said the intermediate technicians, $D_7 = 0$ said

the other, $D_8 = 1$ said the senior technicians,

$D_8 = 0$ said the other; $D_9 = 1$ said technicians, and

$D_9 = 0$ said the other. , $D_{10} = 1$ said the senior

technicians, and $D_{10} = 0$ the other;

$D_6 = D_7 = D_8 = D_9 = D_{10} = 0$ the representative

without any qualification certificate $D_{11} = 1$ said the

male, $D_{11} = 0$ the female.

The employment stability index of the floating population in this section is WS job (duration). Accord to

the Mincer income equation, the basic model is established, and WL refer the number of years of work.

Using the ordinary least squares regression to the basic model, the results of three regression are as follows:

$$w = \beta_0 + \sum_{i=1}^{11} \beta_i D_i + ws + wl + wl^2 + \mu$$

TABLE II OLS REGRESSION RESULTS ON THE EFFECTS OF EMPLOYMENT STABILITY ON THE INCOME OF FLOATING POPULATION

	model 1		model 2		model 3	
variable	coefficient	t	coefficient	t	coefficient	t
D1	2.90	5.78***	2.77	5.52***	3.05	6.01***
D2	8.81	12.26***	8.91	15.40***	9.48	16.31***
D3	13.25	20.29***	13.53	20.75***	14.29	21.90***
D4	18.34	13.43***	18.92	13.81***	19.46	14.02***
D5	2.55	6.85***	2.69	7.2***		
D6	-2.31	-4.28***				
D7	-.162	-3.12***				
D8	-1.98	-2.22**				
D9	-1.25	-1.26				
D10	1.39	0.93				
D11	1.86	4.77***	1.50	3.93***	1.39	3.58***
wl	0.97	11.22***	0.97	11.13***	1.07	12.37***
wl*wl	-0.02	-7.17***	-0.02	-7.22***	-0.02	-7.78***
ws	0.15	2.75***	0.15	2.8***	0.14	2.65***
C	5.52	8.88***	5.04	8.5***	4.56	7.30***
F 值	76.61***		114.59***		118.75***	

(*** indicated at the 0.01 significance level significantly, ** indicated at the 0.05 significant level)

From the model one, it is found that the D10 and D9 are not significant in the skill level, and the D6, D7 and D8 coefficients are negative, but experiential fact are not such as. The cause of this phenomenon may be the interaction effect between education level and skill level (multicollinearity), and so on remove the factor of skill level in the model two. From the regression results, the

coefficient of WS is significantly positive, and the employment stability has a positive effect on wage income, that is, the higher the income level of the floating population. This section will continue to model the basic model of quantile regression, take deciles, judge the variation and differences of regression coefficient.

TABLE III QUANTILE REGRESSION RESULTS OF THE STABILITY OF EMPLOYMENT ON INCOME OF FLOATING POPULATION

	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
D1	1.18	1.62	1.9	1.74	2.07	2.54	2.50	1.98	2.55
	4.62***	4.03***	4.24***	4.37***	4.2***	5.19	3.11***	2.73***	2.67***
D2	4.04	4.77	5.69	6.72	7.57	8.47	8.9	8.85	10.69
	13.46***	10.3***	11.04***	14.63***	13.33***	14.96	9.54***	10.33***	9.44***
D3	5.47	7.03	8.82	10.13	12.10	13.12	14.25	16.02	16.85
	17.28***	13.69***	15.47***	19.81***	18.92***	20.34	13.22***	16.22***	12.71***
D4	13.77	15.67	15.40	15.19	15.64	15.96	18.70	18.71	23.68
	20.49***	15.13***	12.84***	14.26***	11.76***	12.02	8.84***	9.81***	9.89***
D5	1.03	2.70	3.49	3.51	4.44	4.96	5.37	6.80	7.31

	3.28***	5.84***	8.19***	10.64***	12.06***	14.81	10.63***	16.02***	13.93***
D11	0.20	0.72	0.91	1.19	1.26	1.23	1.44	2.29	3.37
	1.01	2.31**	2.64***	3.91***	3.35***	3.31	2.38**	4.18***	4.71***
wl	0.28	0.43	0.51	0.65	0.71	0.79	0.92	0.95	1.29
	6.14***	6.47***	7***	9.92***	8.37***	9.31	6.28***	6.75***	7.12***
wl*wl	-0.006	-0.01	-0.01	-0.02	-0.02	-0.17	-0.02	-0.02	-0.02
	-4.5***	-4.9***	-5.48***	-7.09***	-5.18***	-5.61	-3.28***	-3.52***	-3.57***
ws	0.12	0.11	0.16	0.17	0.21	0.19	0.16	0.16	0.06
	3.83***	2.72***	3.43***	4.02***	4.39***	3.97	2.15**	2.38**	0.70
C	5.47	5.31	5.51	5.73	5.98	6.41	7.2	9.04	9.67
	19.06***	11.78***	10.76***	12.13***	9.86***	10.21	6.64***	8.74***	6.96***
PseudoR2	0.1145	0.1403	0.1631	0.1840	0.2322	0.2495	0.2539	0.2870	0.3090

From the regression results, the stable employment of floating population is positive on income, but the coefficient of WS is not significant in the ninth quantile. It can be considered as the lack of high level talent in the labor market in Dongguan, the flow of high level talent has no impact on its income; and frequently flow of the low level talent can not increase income, but will give it a loss. As a result, frequent job change is not a kind of rational behavior, it has negative effect on human capital accumulation and income.

II. POLICY RECOMMENDATIONS

A. First, Improve the Legal Environment for the Protection of Rights and Interests of the Floating Population.

The protection of workers' rights and interests is the most important part in the labor relations. The developed countries pay much attention to the protection of workers' rights and interests. In developed countries, workers have labor unions, employers have industry associations, the interests demand of the two parties can communicate and coordinate through the organization level, to avoid that the non equilibrium power between the employee and employer has a negative impact on the labor relations. It needs the third party to coordinate when the rights and interests of the laborers was violated, government due to have the authority conferred by law naturally participate into the labor relations as the third party coordinator. China has set up the labor security supervision and labor arbitration institutions, which played a certain role in the solution of the contradiction between the floating population with employer. However, China's labor security monitoring system is not perfect, reaction on the problem of labor relations was very passive, can not take the initiative action to resolve potential conflicts in the labor relations. Therefore, should introduce China's labor laws and regulations system to the floating population through various channels, especially various systems relative with their own labor rights and interests; introduce the methods and ways to maintain their own labor rights and interests and establish the legal aid system of floating population, so that they can feel the power of law.

B. Second, Strengthen the Supervision of Labor Rights and Interests Protection of the Floating Population.

Lack of human capital, and lack of social capital, floating population mainly is the basic staff of enterprises. The working environment is poor, the working time is so long, and the lack of proper labor safeguard measures, which have negative influence on the employment stability of the floating population. In particular, new generation migrant workers has a huge difference on employment ideas with migrant workers, and are more sensitive on the work environment and the work of the welfare. Employers should actively improve the employment environment and the welfare of the floating population to improve their employment stability. Their include that the first is to improve the welfare of the floating population level, improve the wage and welfare system, provide a certain accommodation and food subsidies. the second is to provide a complete vocational skills training program, to enhance human capital of the floating population. the last is to provide a more complete career development plan for floating population to stabilize their employment expectations. Labor supervision departments should be active and strengthen the supervision on enterprises through various means to improve the employment stability of the floating population.

III. CONCLUSION

From the above analysis, it can be seen that the employment stability of the floating population has positive effect on the income. In the Pearl River Delta region, the employment of floating population is not stable, which has a lot of influence factors. From the external objective environment, the protection of employees' rights and interests is not enough in part of enterprises, the floating population can only choose to vote with their feet when the rights and interests are infringed. From the subjective factor, the floating population is limited rationality, which has certain blindness in the occupation flow and conversion. Therefore, for the above reasons, this paper puts forward the following suggestions.

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