

# The Impact of the Delayed Retirement Policy on the Labor Market: Empirical Analysis based on Data from 2000 to 2018 in Fujian Province

Qiongqiong Chen

School of Economics, Jinan University, Guangzhou 510632, China

## Abstract

Retirement policy reform has become the top priority of the country's work, and it is also the focus of attention of the whole society. The formal implementation of the postponement of the retirement policy is in line with the needs of my country's actual national conditions at this stage. The impact of policy shocks on the labor market is a concern of working-age workers. This paper selects the data of Fujian Province from 2000 to 2018, conducts an empirical test on the data based on the OLS method, analyzes the impact of the delayed retirement policy on the labor market, and proposes corresponding policy recommendations.

## Keywords

Delayed retirement policy; Aging population; Labour market; Population debt.

## 1. INTRODUCTION

At present, the analysis of the impact of the delayed retirement policy on the labor market has mostly focused on the macro-level research in academic circles, and there are relatively few studies on the micro-level such as a certain province, a certain city or a certain region. In view of this situation, this article analyzes the situation in Fujian Province in order to obtain a more regionally characteristic conclusion.

### 1.1. Social Status and Policy Background

Since the reform and opening up, my country's economy has advanced by leaps and bounds, and the level of science and technology has also been rapidly improved. The improvement of medical standards has brought gratifying results on the one hand, but has also made the pension problem more difficult, and subsequent retirement policy reforms The problem cannot be ignored. First, the problem of population aging has become more serious, and the pressure on the support of the elderly of the only child is increasing. This is the practical reason for the urgent implementation of the delayed retirement policy; Second, due to the pessimistic economic situation in recent years, the imbalance between supply and demand in the labor market has become more and more difficult, and the demand for employment is large. The implementation of the delayed retirement policy will inevitably lead to an increase in the supply of labor. The impact of the market needs to be viewed from both short-term and long-term perspectives; Third, due to the continuous improvement of education level, on the one hand, there are more and more university students, master students and doctoral students, and delays in entering the labor market of the right-age people are not uncommon in many cities. On the other hand, the requirements for academic qualifications of workers have increased. Many low-educated labors face the predicament of unemployment. This coexistence of employment difficulties and recruitment difficulties has led to an imbalance in my country's employment structure and made the employment situation more and more unoptimistic.

As early as the 1950s, my country has begun to gradually establish and improve a retirement system suitable for social development. With the passage of time, great changes have taken place in my country's population size and population ratio. This requires flexible adjustments to the retirement policy to adapt to the new situation. The implementation of the "delayed retirement age" policy is an important task put forward by the Third and Fifth Plenary Sessions of the Eighteenth Central Committee. This policy was solicited from the public in 2016 and officially launched in 2017.

## 1.2. Literature Review

The issue of retirement age has always been a hot topic in academic circles. Many scholars in my country have conducted rationalization and in-depth exploration. Based on the current national conditions, some scholars believe that the legal retirement age implemented in my country at this stage is too early. In order to relieve the pressure on the young and middle-aged labor to provide for the elderly, the retirement age should be appropriately increased.

But the public and some scholars hold the opposite view, believing that employment pressure is too great at this stage and delaying retirement not only cannot solve the problem. They think it will also cause a more unbalanced employment situation, increase unemployment in the labor market, and arouse unfairness.

The policy of postponing the retirement age has an impact on my country's population pattern. The extension of the retirement age is determined by the objective condition of increasing the average life expectancy [1]. The development trends of the retirement age of the labor force in our country, the extended life expectancy and the aging of the population are incompatible with each other [2].

The impact of the implementation of the delayed retirement policy on my country's pension is also a hot topic of research. The socially coordinated pension pay-as-you-go model has led to greater pressure on pension expenditures [3]. The delayed retirement policy cannot fundamentally solve the pension gap problem in the long term, but it only temporarily delays the formation of this problem [4]. Therefore, if the problem is to be solved, this policy alone is far from enough.

To alleviate the pressure on the fund, other measures are needed to cooperate. The plan to delay retirement must be analyzed in four dimensions: law, society, politics, and economy, and adopt a strategy of coexistence of transition plan and on-track plan, in order to be able to hope to solve my country's unique uneconomic and unfair retirement problems [5].

Based on my country's actual national conditions, the special situation of population aging caused by the family planning policy, and the current economic and social development of our country are in a period of intense transition, in order to avoid falling into the "middle income trap", delaying the retirement policy seems imperative .

## 2. THEORETICAL ANALYSIS

### 2.1. Life Cycle Hypothesis

Consumers' consumption at all stages of life depends on their lifetime income, not on the income of the current stage. It is expected that the consumption rate of resources in different stages of consumers is stable and reasonable. This is the life cycle hypothesis of consumption expenditure and savings .

The application of this theory to the labor market refers to the important stages of life related to employment, also known as the life cycle of labor supply. At different periods of life, the productivity of people's participation in social labor, that is, market productivity (wage) is different, which provides a theoretical basis for studying the retirement age.

With economic growth, the pressure and burden of self-care for individuals have increased, providing a new rational explanation for delaying the retirement age [6]. From the perspective of life cycle theory, it is necessary to delay retirement policy.

## 2.2. Job Search Theory

Assume that consumers know the distribution of prices in the market, but do not know the quotations of each seller. Consumers can pre-select several sellers and find the lowest price among them. This kind of search is called fixed sample search. Or, consumers can search continuously until they find an acceptable price (or give up searching). Such search is called continuous search.

Job search theory divides search into fixed sample search and continuous search. Job search theory is also known as DMP model theory. Through the application of search costs in the labor market, this theory illustrates a common economic problem, that is, job vacancies and labor unemployment co-exist.

## 3. DATA AND ASSUMPTIONS

### 3.1. Data

The unemployment rate is the ratio of the actual unemployed population to the working-age population in urban areas. The working-age labor force includes both the employed population and the unemployed.

The working-age population burden coefficient is also called the population dependency ratio. According to related research, the dependency ratio of the total population can also be seen as a decline in the demographic dividend, which refers to the ratio of the number of non-working-age population to the number of working-age population in the overall population, indicating how many non-working-age populations roughly bear for every 100 working-age population Age population.

Regarding the population dependency ratio, it is usually classified according to different calculation methods. According to two different definitions of the working-age population (15-59 years old population or 15-64 years old population), there are two ways to calculate the total dependency. This article takes 65 as the retirement age, the working age of workers is 15-64, and the total population dependency ratio is the ratio of the sum of the population aged 0-14 and over 65 to the population aged 15-64.

This article selects the data of Fujian Province from 2000 to 2016. The data comes from the "Fujian Statistical Yearbook" and "China Statistical Yearbook" in each year to ensure the scientificity, rationality and rigor of the data.

### 3.2. Assumptions

Based on the existing employment theory and labor market theory, analyze the restrictive factors of the unemployment rate, and then use the regression analysis method to test it with empirical data, and get the influence coefficient of each factor.

According to the obtained coefficients of influencing factors and the set regression equation, the estimated value of the unemployment rate is obtained. From this, the correlation between delayed retirement and unemployment rate can be obtained, and the relationship between the retirement policy and the labor market can be further obtained. interaction.

The basic assumptions are as follows: the unemployment rate will decrease with the increase in economic growth, the unemployment rate and the inflation rate are in a reverse relationship, and the increase in the burden coefficient of the working-age population will lead to more serious unemployment. The development of the secondary and tertiary industries Will reduce

the unemployment rate. The unemployment rate will decrease as the population of the right age increases. The effect of wage growth on the unemployment rate is uncertain.

The explanatory variables selected in this article include: the growth rate of regional gross product (gpgr), the urban consumer price index (CPI), the working-age population burden coefficient (depen-ratio), the second and third industry gross product Proportion (ind), urban working-age population (labor), real wage index (wage). It is worth mentioning that because the value of the urban working-age population is too large compared to other indicators, it is logarithmic in actual use. The explanatory variable in the selected indicator is: unemployment rate (ue).

The regression equation can be set as:

$$ue = \beta_0 + \beta_1 gpgr + \beta_3 CPI + \beta_4 depen-ratio + \beta_5 ind + \beta_6 labor + \beta_7 wage + u$$

## 4. EMPIRICAL ANALYSIS

### 4.1. Descriptive Analysis of Data

Descriptive statistics is a method of sorting out and analyzing data through graphs or mathematical methods, and estimating and describing the relationship between the distribution state of the data, digital features and random variables.

That is to analyze the characteristics of specific data, and describe the displayed characteristics and the index characteristics represented by the data in order to observe the overall data characteristics of variables and make preliminary preparations for subsequent data retention, deletion or replacement, the empirical analysis can be more reasonable and scientific.

The descriptive analysis of data is shown in Table 1.

**Table 1.** Descriptive analysis of data

Variable	N	n	T	Mean	Max	Min	Std. Dev.
ue	126	7	18	3.77	4.2	2.6	0.35
gpgr	126	7	18	11.24	15.2	8.1	2.13
CPI	126	7	18	108.18	111.5	105.1	1.69
indu	126	7	18	88.97	93.1	83	2.98
labor	126	7	18	61948.5	437763	2445	120380.8
depen-ratio	126	7	18	36.56	47.24	30.48	4.65
wage	126	7	18	111.69	119.4	107.5	3.25

In the table above, N represents the sample size, n represents the number of variables, T represents the number of years, Mean represents the average value of each variable, Max represents the maximum value, Min represents the minimum value, and Std. Dev. represents the standard deviation.

It can be seen from the output result that the standard deviation of the unemployment rate is the smallest, indicating that the time difference of the unemployment rate is smaller than other variables.

Compared with the unemployment rate, the standard deviations of the growth rate of regional GDP, the resident consumption level index, the proportion of the secondary and tertiary industry GDP, the wage index of urban employees and the dependency ratio of the total population are compared Larger, it shows that the difference of these indicators in time is more significant.

It is worth noting that the standard deviation of this indicator of urban working-age population is 120380.80, which is very large in value. This shows that the change of this indicator between 2000 and 2017 is very large. This is from the calculation of the deviation can also be obtained.

## 4.2. Regression Analysis of Data

### 4.2.1 Heteroscedasticity test

An important assumption of the classic linear regression model is that the random error term in the overall regression function satisfies homoscedasticity. But this is just an ideal assumption. The homoscedasticity of the data error term is often not satisfied, and the heteroscedasticity is a question of degree, not whether there is a problem. Therefore, before the regression analysis, it is necessary to test first, and if there is serious heteroscedasticity, it must be corrected. There are many ways to test for heteroscedasticity, and White's test is one of them.

The data of the above indicators are regressed first, and then the relevant commands of the White test are used. The p value obtained is 0.0732, which is small in a relative sense. Therefore, it is reasonable to reject the original hypothesis and believe that there is no heteroscedasticity. A more precise statement is, The heteroscedasticity of the data is not serious.

### 4.2.2 Autocorrelation test

There is a correlation between the expected values of random error terms, which is called autocorrelation or serial correlation between random error terms. The serial correlation of random error terms in linear regression models is more common, especially when applying time series data, the serial correlation of random error terms often occurs.

When the random error term appears autocorrelation, using ordinary least squares method to estimate the parameters will no longer be effective, so testing autocorrelation is an indispensable step. Using the Durbin-Watson test, the DW value is 1.190217. By comparing with the critical value, it can be concluded that there is no autocorrelation.

## 4.3. Regression Analysis

Stata 15.0 is used to conduct empirical analysis of the data. Since the data selected this time is limited to the data of a single province in Fujian Province, the simpler ordinary least squares method can be used to estimate the parameters. The obtained measurement regression results are shown in Table 2.

The growth rate of Fujian's regional GDP and the unemployment rate are negatively correlated. This is in line with the Okun's Law, which is that every 1% economic growth, the unemployment rate will decrease by 0.07%. However, both coefficients are relatively small. This is because Fujian Province is in a period of economic transition. Although its economic growth rate has increased, the labor market and employment structure are still unreasonable, and there is serious structural unemployment. This led to economic growth alleviating unemployment, but the impact was not large.

The proportion of the secondary and tertiary industries and the unemployment rate are negatively correlated. The reason for this result is that the development of the secondary and tertiary industries has increased the opportunities for surplus labor to be absorbed. In recent years, the secondary and tertiary industries in Fujian Province have developed, which can ease unemployment and increase employment.

The relationship between the number of urban working-age population and the total population dependency ratio and unemployment rate needs to be analyzed. It can be seen from the results of the regression analysis that the number of working-age population and the unemployment rate are positively correlated, indicating that an increase in the working-age population will lead to more unemployment.

**Table 2.** Regression results

	(1)	(2)	(3)	(4)
	ue	ue	ue	ue
gpgr	-0.06165	-0.072691*	-0.053593*	-0.053593*
	-1.18	-1.62	-1.39	-1.56
	-0.05224	-0.04479	-0.03852	-0.03434
CPI	-0.03317			
	-0.46			
	-0.07245			
indu	-0.04858	-0.02863	-0.02351	-0.02351
	-0.6	-0.43	-0.36	-0.39
	-0.08135	-0.0664	-0.06547	-0.0598
labor	0.117657*	0.115842*	0.131626**	0.131626*
	1.59	1.62	1.92	1.53
	-0.07418	-0.07159	-0.06852	-0.0862
depen-ratio	-0.03047	0.02183	0.01699	0.01699
	-0.63	-0.51	-0.4	-0.44
	-0.04812	-0.04279	-0.04199	-0.03886
wage	-0.01622	-0.02636		
	-0.42	-0.86		
	-0.03864	-0.03061		
_cons	5.539286	8.063457	4.541986	4.541986
	0.54	0.95	0.62	0.73
	-10.3323	-8.4459	-7.31581	-6.21454
N	126	126	126	126

The job search theory mentioned above illustrates the economic problems of job vacancies and labor unemployment. When the working-age population increases, more and better labor enter the market, and employment becomes sufficient, which can reduce the unemployment rate.

However, it can be seen that the regression results obtained in this article are contrary to the DMP theory. The possible reason is that the economic development of Fujian Province is approaching saturation, and the balance of supply and demand in the labor market has almost reached. An increase in the working-age population will only lead to an oversupply in the labor market, causing more serious unemployment, and delaying retirement policies. The relief of the unemployment rate does not seem to have a positive effect.

From the perspective of the willingness to delay retirement, among personal factors, age and education level have a significant impact on residents' willingness to delay retirement; among family factors, those who need to support the elderly are more willing to delay retirement flexibly; among work factors, occupation type and month Average income has a significant impact on residents' choice to delay retirement [7].

## 5. CONCLUSION AND SUGGESTION

### 5.1. Conclusion

In the revised regression results, the dependency ratio of the total population in Fujian Province is positively correlated with the unemployment rate. The lower the dependency ratio



of the population, on the one hand, it means that the support burden faced by the working-age labor force is reduced, and it is possible to find more suitable and suitable occupations, the employment rate will rise, and the unemployment rate will be reduced. On the other hand, it means that the social burden is reduced and the group will Turn more savings into investment, promote economic growth, and thereby increase employment.

## 5.2. Suggestion

Social development and economic growth have made it necessary to delay the implementation of retirement policies in order to adapt to national conditions. But what the people worry about is the crowding out effect caused by delayed retirement. The crowding-out effect of postponing retirement on young people's employment refers to the squeeze of young people's jobs due to the reduction of new job opportunities caused by the delayed exit of old people. This is also a problem that people generally worry about postponing the retirement age [8]. In order to formulate a retirement policy that maximizes public interest, the end of this article puts forward some simple suggestions based on the above analysis.

### 5.2.1 Improving the Working Environment

Delayed retirement has a significant negative impact on young people's employment. It is basically a one-to-one substitution relationship. However, compared with the average salary of employees and the type of industry, delayed retirement has a relatively small impact on young people's employment [9]. Moreover, under the existing work system, the mental and physical pressure on employees is increasing, so many people will reject the policy of delaying retirement.

To a certain extent, increasing employees' wages, the number of days of paid leave, and improving the working environment will alleviate the people's rejection and confusion about this policy.

### 5.2.2 Improving Employees' Reemployability

It should not be overlooked that the impact of delayed retirement on older workers is also one of the reasons why this policy is not so loud in the process of implementation.

Due to differences in age and skill levels, senior laborers are discriminated against in the process of seeking jobs [10]. Elderly people who are about to retire, once they lose their jobs, it will be difficult to find suitable jobs. In fact, the elderly are the most difficult group to benefit after the implementation of the delayed retirement policy.

Therefore, enterprises have the responsibility to do well in reemployment training for employees, so that the elderly have a higher reemployment ability, which can not only improve the unemployment problem of the elderly, but also improve the problem of vacancies in some industries.

### 5.2.2 Improving Relevant Legal Systems

After the formal implementation of the postponement of the retirement policy, it is a legally effective system, but in the process of implementation, it needs to be implemented step by step and requires the cooperation of relevant laws.

The problem of employment discrimination among the elderly occurs from time to time. The problem that morality cannot solve requires the help of the sharp sword of law. The law should be improved to prohibit discrimination against the elderly in the labor market in our country, guarantee the reasonable employment rights of the elderly, and escort the implementation of the retirement policy.

## REFERENCES

- [1] Yi Lin (1994). Economic Thinking on my country's Retirement System. *Contemporary Finance & Economics*, no.1, p.9-13.
- [2] Yuanwen Luo (2001). Discussion on the retirement age in the pension insurance system. *Market & Demographic Analysis*, no.6, p.46-48.
- [3] Dasong Deng, Changping Liu (2001). An Empirical Study on the Sensitivity of China's Pension Funds. *Economic Science*, no.6, p.13-20.
- [4] Jing Xiong & Fang Li (2017). The Impact of Delayed Retirement on the Balance of my country's Pension Insurance. *Shanghai Finance*, no.12, p.18-25.
- [5] Yefang Qian (2018). Economic Delay or Social Delay: Based on Empirical Research on Delayed Retirement. *Journal of Wenzhou University(Natural Sciences)*, no.6, p.5-19.
- [6] Guodong Shao, Xiaoyu Zhu & Wei Liu (2007). Research on the rationality of delayed retirement age based on life cycle theory. *Social Sciences in Yunnan*, no.5, p.53-56+88.
- [7] Rong Sun (2018). A Survey of Residents' Willingness to Delay Retirement Based on Logistic Regression: A Case Study of Chongqing. *The World of Survey and Research*, no.12, p.14-18.
- [8] G. Jin (2010). The Analysis on the Status and Problems of China's Retiring Age and the Necessity of Extending Retiring Age. *Social Security Studies*, no.2, p.32-38.
- [9] Nina Liu & Cheng Liu (2014). The Effects of Late Retirement on the Employment of Youth: An Evaluation based on the Panel Data of 18 Industries in 29 Provinces. *South China Population*, no.2, p.27-35.
- [10] W. Liu (2013). Does Late Retirement Surely Damage the Retired Interest? An Investigation on the Pension Wealth of Various Retirement Ages of Urban Employees. *Economic Review*, no.4, p.27-36.