

The Effect of Collective Bargaining on the Minimum Wage

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Abstract. More and more countries are adopting a minimum wage policy, but few scholars have researched the factors affecting the underlying minimum wage level, especially the factors of laborers' bargain power. We use a panel data from the year of 2005 to 2012 to investigate the collective bargaining on the minimum wage, and find that they have significant relationship.

Introduction

In order to protect low-income groups to share the fruits of reform and opening up and economic growth, the former Ministry of Labor issued the "minimum wage provisions of enterprises" in 1993, which is the first regulations on the minimum wage. The Labor Law of the People's Republic of China provides the implementation of national minimum wage security system in 1995. With the passage of time, the implementation of China's minimum wage laws and regulations continue to increase, the minimum wage continues to rise, and the coverage of minimum wage is also expanding. In 2004, the government issued a Minimum Wage Regulations to replace the former one. The new Minimum Wage Regulations require minimum wage rates to be adjusted at least once every two years. Since then, most provinces and cities established the minimum hourly wage standards for the part-time employment.

However, the current minimum wage levels vary from place to place, and there is no uniform basis on the minimum wage. Is the minimum wage increasing year by year in response to the needs of the economic situation or is it due to policy pressure or to follow the example of other provinces? What are the factors that affect the minimum wage? And do workers have an impact on the minimum wage? We will try to analyze these questions.

Literature Review

On the influencing factors impact of minimum wage standards, the current foreign literature mainly focused on the ruling party ideology (the Democratic Party or the Republican Party), Bloch (1993)[1], Peters (2009)[2] find that the Republican Party tends to maintain the existing minimum wage levels while the Democratic Party tends to increase the minimum wage levels. In the case of the unions on the minimum wage, Krehbiel and Rivers (1988)[3] showed that unions had a significant effect on the minimum wage. Bloch (1989), in studying the four minimum wage increases in 1966-1989 in the United States, find that there are positive correlations between the unions and minimum wage increase, and other factors, including the level of economic development, the proportion of young people and women's employment, also have influence on the minimum wage.

International Labor Organization 2008[4] regressed the real wage change on the Real GDP per capital. The regression results of the countries with low (less than 30%) collective bargaining coverage are: $w = 0.6474x - 0.0983$, while the regression results of the countries where the collective bargaining coverage is high (greater than 30%) are: $w = 0.8723x - 0.2889$. The coefficient of the latter is obviously larger than that of the former, which indicates that collective bargaining with higher coverage can improve the bargaining power of the laborers. Boeri (2009)[5] argues theoretically that the minimum wage set by the government is lower than the minimum wage in labor negotiations.

There are only few domestic scholars analyzed the influencing factors of the minimum wage. Lin

(2007)[6] analyzed the relationship between the minimum wage and variables such as average wage, economic development level, unemployment rate, labor productivity and so on. But there is no empirical study on how these factors affect the minimum wage. Ning (2011)[7] constructed the analysis framework of China's minimum wage setting and adjustment factors from the perspective of the tripartite interests of enterprises, laborers and the government. On this basis, he used the data of 287 prefecture-level cities in 2006 and 2007 in China to analyze the factors determining the minimum wage level. The study found that the determination of the minimum wage in China can basically reflect the tripartite interests, which is the result of the game. For example, a high unemployment rate will lead to low minimum wage level and social security level will help raise the minimum wage.

At present, the analysis of the minimum wage in China is focused on its employment effect and income effect, while the research on the factors affecting the underlying minimum wage is few. Ning's research only used two year's date and he haven't considered the bargaining power of workers on the wage. In fact, the unions that represent the interests of workers will expect to increase the minimum wage, and there are lots of collective agreements on the wage in China. So we try to research their influence on the minimum wage.

Minimum Wage Policy in China

China's Labor Law stipulates that the considering factors when setting the minimum wage standards in each province include: the minimum living cost of the laborers themselves and their families; the average wage level of the society; labor productivity; employment status; the difference of economic development among regions.

In China, under the unified leadership of the State Council's labor administrative departments, the provincial government in conjunction with trade unions and the association of entrepreneurs set the minimum wage. And then, after receiving the filing report, the Ministry of National People and Social Affairs will generally consult the All-China Federation of Labor Unions (ACFTU) and the China Enterprise Confederation (CEC). If they have any objection to the report, they can submit a change of opinion and give a written reply within 14 days. Lastly, the minimum wage standards and the scope of application shall be issued by the local government and at least one regional newspaper within 7 days. If there is a change in the relevant factors for the establishment of a minimum wage standard, the minimum wage standard should be adjusted accordingly, and the minimum wage rate should be adjusted at least once every two years.

Minimum Wage Setting Considerations

Raising the minimum wage will increase the benefits of the workers, so the workers expect to raise the minimum wage level. But the minimum wage increase will affect the labor demand, it is precisely those workers who earn closely to the minimum wage level are more likely to be fired. Because of the impact of minimum wage on employment, we should set the minimum wage in a balanced way to reduce the poverty of workers and increase the employment of low-skilled workers.

In addition, the degree of government involvement also affects the coordination of the parties at the time of the minimum wage setting. The minimum wage setting mechanism varies widely from country to country. In some countries, the minimum wage is determined solely by the government, while in other countries the minimum wage is negotiated by workers and business representatives. The government only provides the minimum wage level a legal status and applies this minimum wage level to non-union members. There are many intermediate situations in these two extremes, depending on the status of local governments or collective bargaining.

Minimum Wage and Collective Bargaining

Before the mid-1990s, few people known about collective bargaining in China because of the centrally planned economy, until the concept of "collective consultation" was introduced in the Labor Law in 1995. The Government, the All-China Federal Federation of Trade Unions (ACFTU) and the China Enterprise Confederation (CEC) began to set up a tripartite consultation mechanism in 2001, and China began to vigorously promote the system of collective bargaining. From that time on, the quality of collective bargaining and the process of collective bargaining are significantly improving.

Studies of union workers and non-union workers in the United States and the United Kingdom show that trade unions can raise wages above 10 percent. But for those countries collective agreements apply to non-union members compulsively, such as France, Germany and Norway, The difference in wages is almost non-existent. Studies have also shown that the recent wage differentials in the United States and the United Kingdom are decreasing, confirming the weakening of trade unions' power currently taking place in both countries. At the same time, it is estimated that one-third of the increase in wage inequality in the United States over the past 20 years can be explained by the weakening of the union's power, and Germany is similar.

Studies at different national levels in Europe have shown that countries with high collective bargaining coverage have higher levels of minimum wages relative to average wages. One reason for this positive correlation is that greater workers' collective bargaining coverage means that the power of workers is raised under the leader of trade unions. On the other hand, the governments are more willing to raise the minimum wage, because it is more in line with the strategy of equalization, so that the government can receive a higher rate of support.

If the workers in the labor bargaining process are more united, there will be a stronger bargaining power. Therefore, the bargaining power of trade unions can be negotiated with a particular occupation, company, region to reflect the concentration. The study by Berninghaus, Guth, and Keser (2003) [8] shows that wage increases can be improved through the use of collective bargaining rather than decentralized negotiations. Calmfors and Driffill (1988)[9] fund that the wage and the concentration of negotiations are in a hump-shaped relationship, and they argued from both theoretical and empirical point that over-concentration and over-dispersion of the negotiations result in lower wage levels. But their argument cannot be copied. There is no perfect model on the relationship of the degree of negotiation concentration and the wage level.

The minimum wage is determined by the government, the trade unions, and the enterprise federations of equal status jointly. Trade unions participate in the formulation of the minimum wage on behalf of the workers and reflect the interests of the workers. In terms of workers, they have a desire to negotiate for a higher wage, but the current domestic study did not involve this Therefore, we will focus on the analysis of labor bargaining power on the minimum wage level. And we guess the regions with a high degree of unionization, the minimum wage should be higher. At the same time, a higher collective wage would increase workers' support for trade unions. In order to obtain more support, trade unions would tend to raise the minimum wage.

Data and Variables

In this paper, we make the year of 1995 as the base year. The value of provincial Consumer Price Index (CPI) comes from the China Statistical Yearbook, the variable value of *cpi1995* represents the ratio of current price and the price in 2005. CPI is an effective measurement of inflation.

Minimum wage data from the provincial Human Resources and Social Security Bureau website.in provinces. There are more than one minimum wage in some provinces because of the differential economic development level in a same province, here we take the minimum as the minimum wage in the province. Considering of the price, the variable *minwagecpi* is the minimum wage adjusted by the CPI. The variable *logminwagecpi* the logarithm of *minwagecpi*.

The total employment figures are derived from the China Labor Statistical Yearbook. The explanatory variable employment rate represents the average annual growth rate of the employed

population. The variable profit1 represents the total profits of industrial enterprises above designated size, which come from China Industrial Statistical Yearbook.

The GDP and GDP index of the provinces and the total population of the provinces are derived from the China Statistical Yearbook. The variable GDPper is the GDP per capita adjusted by the GDP index. The variable GDPper is used to measure labor productivity, logGDPper is its logarithm. The variable popurate refers to the number of people who need to be raised by each worker. Its value is the ratio of the total population of each province to the total employed population.

The data on total remuneration of laborers come from the National Bureau of Statistics. The average wage is the ratio of the total remuneration of laborers to the total employed population. The variable averwagecpi represents the average wage of workers adjusted by CPI, and logaverwagecpi is its logarithm.

The number of workers covered by covered by the collective agreement which concluding collective wage comes from China Labor Statistical Yearbook, and the variable colconlabprop is the ratio of worker covered by collective wage to the total employed population.

The Dependent Variable. Taking into account the minimum wage level is generally the development of reference to the previous year's economic performance, so this article is explained by a variable in advance of the CPI by adjusting the minimum wage level logminwagecpi_pro.

The Core Explanatory variable. This paper mainly discusses the impact of collective bargaining on the minimum wage level. The core explanatory variable colconlabprop can represent the power of the collective bargaining.

So our equation is:

$$\log\minwagecpi_pro = c + \alpha_1\text{colconlabprop} + \alpha_2\text{CPI2005} + \alpha_3\log\text{GDPper} + \alpha_4\text{popurate} + \alpha_5\log\text{averwagecpi} + \alpha_6 + \text{employmentrate} + \alpha_7\text{profit} + \alpha_8\text{dirage} + u \quad (1)$$

Measurement Results

We use a panel data which include the variable from the year of 2005 to 2012. First we test whether model is suitable for mixed regression or fixed effects regression, as we know, the fixed effects model includes an F test, the hypothesis of this F test is “ $H_0: \text{all } u_i = 0$ ”, which means the mixed model is acceptable. However, the p-value of the F-test is 0.0000, strongly reject the null hypothesis. So the fixed effect model is better.

Next, the Hausman test is used to determine whether to use the fixed effect model or the random effects model. The hypothesis of the Hausman test is “ $H_0: u_i$ isn't related to the independent variables” which means the random effects model is acceptable. The result of Hausman test is $p = 0.0120 < 0.05$, so the null hypothesis is rejected, that is to say, we should use the fixed effects model to analysis our data.

The results show that the coefficient of the proportion of workers covered by the collective agreement is significantly positive under the 5% confidence level and the coefficient is 0.404, which indicates that the collective bargaining can promote the improvement of the minimum wage.

In addition, the results show that the coefficient of the price level is 0.772, which is significantly at 1% confidence level, indicating the price level has a great impact on the minimum wage level. This is in line with the original intention of the minimum wage, to maintain the living cost of the low income workers.

The coefficient of logGDPper is 0.452, which was significantly positive at the 1% confidence level. Which indicates that the improvement of labor productivity has a significant effect on the increase of the minimum wage.

The coefficient of gross profit is significant positive, which indicates that the increase of the enterprise profit will raise the minimum wage level.

Table 1 the Result of the Regression on Eq.1

VARIABLES	(1) logminwagecpi_fro
colconlabprop	0.404** (0.181)
CPI2005	0.772*** (0.212)
logGDPper	0.452*** (0.140)
popurate	-0.0950 (0.137)
logaverwagecpi	-0.114 (0.0878)
employmentrate	0.0954 (0.359)
profit	0.349*** (0.121)
fdirage	-0.161 (0.431)
Constant	1.887** (0.871)
Observations	223
Number of province_id	28
R-squared	0.849

Standard errors in parentheses

* Significant at 10%; ** significant at 5%; *** significant at 1%

Conclusions

Many scholars only analyzed the economic and political determinants of the minimum wage legislation. We use the panel data to investigate the impact of collective bargaining on the minimum wage first in China, and find that collective bargaining can significantly raise the minimum wage. Maybe we should find more variable to explain the collective bargaining power next. But we know now that the collective bargaining can reflect the interests of labors, who want to increase their wages. As we know, the collective bargaining is usually under the leader of trade union, so we should improve the trade union system.

In many Chinese enterprises, especially in private and small enterprises, the trade union system is not perfect, and some enterprise trade unions is just dispensable, and even some companies simply do not have trade unions. In this case, China should speed up the establishment of a sound trade union system, strengthen the role of trade unions and the make sure union to monitor the implementation of the minimum wage.

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