

Economic Analysis on the Minimum Wages in Japan

Summary

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Research Period

Fiscal year 2004

Objective of the Survey and Research

The report contains the results of the “Survey and Research on the Industrial Minimum Wage System,” which was conducted at the request of the Wages and Working Hours Division of the Labour Standards Bureau of the Ministry of Health, Labour and Welfare. There were two main requests from the Ministry. One was to analyze from statistical data the state of affairs of minimum wages. The other was to grasp employers’ awareness of the minimum wage system through a questionnaire survey.

The main objective of the former statistical analysis was to examine actual situation of concentration of wages in the vicinity of the statutory regional and industrial minimum wages. The statistical data we used here were the individual data taken from the *Basic Survey on Wage Structure 2003*.

For the latter, we conducted a questionnaire survey to investigate mainly about employers’ awareness about the regional and industrial minimum wage systems and the effect of the statutory minimum wages on their decisions about wages.

Outline of the Results of the Research

1. General discussions

Chapter 1 gives an outline of Japan's minimum wage systems, after explaining the three main research objectives: analyses on i) the state of concentration of wages in the vicinity of the statutory regional minimum wages, ii) the state of concentration of wages in the vicinity of the statutory industrial minimum wages, and iii) employers' awareness of the minimum wage systems,. Furthermore, we presented discussions that had been made on the question, "Why do we need to have the minimum wage systems?" In these discussions, Tsujimura (1977) pointed out that the minimum wage systems were effective in encouraging workers, who had weak negotiating power, to participate in the labor market and that it also had significant leverage in helping to halt the unceasing unemployment process.

2. Economic theories and empirical analyses on minimum wages

In Chapter 2, we presented the economic theories dealing with the effect that statutory minimum wages had on the market. Firstly, we explained the effect of minimum wages in the model of perfect competition and indicated that the setting of minimum wages would have a negative effect on employment. Secondly, we presented the two-sector model that dealt with sectors in which statutory minimum wages were and were not applied; the monopsonistic model of the labor market that incorporated companies' power of monopsony; the dynamic model that Card and Krueger developed by improving on the monopsonistic model; and the heterogeneity model that took into account the heterogeneity of the workers' levels of skills. All these models discuss the effect of minimum wages on employment.

This was followed by the summary of the results of empirical research done in the U.S. The point was that the results were divided into two aspects. One is that revision of statutory minimum wages had a negative effect on employment and the other is that the revision had no effect or had a slightly positive effect on employment. Many analyses have been made since the 1990s as well, but a conclusion has not necessarily been reached on this subject.

At the end of Chapter 2, we briefly presented some previous studies done in Japan, much of which was on the effect of statutory minimum wages to underpin wages. The results were divided. Some showed that statutory minimum wages were effective in underpinning wages, and others showed that they were not. If we look at the detailed results from individual data, it seems appropriate to think that statutory minimum

wages' effect of underpinning wages varies from region to region. This view was also consistent with the results of the analysis presented in the next chapter.

3. Analysis on statutory regional minimum wages

In Chapter 3, we mainly examined the concentration of wages in the vicinity of the statutory regional minimum wages. The analysis of the individual data taken from the *Basic Survey on Wage Structure 2003* showed that for full-time workers, no dense concentration of wages was observed in the vicinity of the statutory regional minimum wages in any prefectures. With regard to the wages of part-time workers, however, the picture was radically different. In prefectures like Okinawa, Hokkaido, Yamaguchi, and Fukuoka, many workers' wages were concentrated in the vicinity of the statutory regional minimum wages, which suggested that the statutory minimum wages were effective in underpinning wages. On the other hand, in prefectures like Tokyo, Yamanashi, and Shiga, the accumulation of wages in the vicinity of the statutory wages was not so much observed as in other prefectures, and it does not support the view that part-time workers' wages were concentrated in the vicinity of the statutory minimum wages.

Secondly, the relation between low-wage and age were examined. As the result, it became clear that the percentage of low-wage workers was high among the youths and older workers. In particular, the percentage was especially high among women part-time workers.

Lastly, we examined the attributes of workers who were receiving wages lower than the statutory minimum wages. The percentage of such workers was high among women in terms of gender, part-timers in terms of employment status, youths and older workers in terms of age group, workers with shorter job tenure in terms of length of service, those with less schooling in terms of educational background, and workers of small enterprises in terms of company size. These results were in line with what we had expected, but the results of quantitative analysis were somewhat contrary to our expectations. By industry, for example, the percentage of workers receiving less than the statutory minimum wages was high among those in the finance and insurance industries and low among those in the mining industry.

4. Analysis of statutory industrial minimum wages

In Chapter 4, we examined the concentration of wages in the vicinity of the statutory industrial minimum wages, focusing on the steel industry, electrical machinery and apparatus manufacturing industry, and the retail industry. As in the case of statutory

regional minimum wages, we did not observe concentration of wages in the vicinity of the statutory industrial minimum wages as regards full-time employees. As for the wages of part-time workers, the situation varied greatly in industries. In the steel industry, the wages were accumulated in the vicinity of the statutory minimum wages in many prefectures, even though the number of prefectures with part-timers in the steel industry was limited. In the electrical machinery and apparatus manufacturing industry, the wages were also accumulated in the vicinity of the statutory minimum wages in many prefectures. In the retail industry, there were three patterns of how wages were set in relation to the statutory minimum wages. Because the relation between the wage distribution of part-time workers and statutory industrial minimum wages can be varied, it was suggested that when we discuss the effect of the industrial minimum wage system, we need to conduct close examination of the situation in each industry and region in question.

In addition, we examined whether or not the introduction of the statutory industrial minimum wages was raising the level of wages in the regions they were introduced and whether or not it gave rise to industrial wage differentials between prefectures with and without the statutory minimum wages. Using the individual data taken from the *Basic Survey on Wage Structure 2003*, we estimated the wage function in the retail industry. As a result, we found that the average wages were higher in prefectures with the statutory industrial minimum wages than in prefectures without.

5. Minimum wages as a constraint on the market

In Chapter 5, we addressed the question of whether the increase or decrease in the number of workers receiving less than the statutory minimum wages was the result of the constraint imposed by the statutory minimum wage on demand for labor. The essence of Welch's two-sector model, which was used as the theoretical basis in examining the above hypothesis, is as follows: In the labor market, there are the sector in which the statutory minimum wage is applied and the sector in which it is not. In the sector with the statutory minimum wage, an excess supply of labor will result in that sector because of the statutory minimum wage. The excess supply of labor in that sector will then be absorbed in the sector without the statutory minimum wage. As a result, employment in the latter sector will increase, but wages in that sector will fall below the level of the original equilibrium wage.

The implication drawn from the above model was that in prefectures where the statutory minimum wages are set higher relative to the average wages, the market to which the statutory minimum wages are applied cannot absorb all the labor supply, and

as a result, many workers will end up working at less than the statutory minimum wages. If we follow the above model, we reach a theoretical conclusion that the higher the statutory minimum wages, the larger the number of workers working at less than the statutory minimum wages.

We conducted a Poisson regression analysis by standardizing the rate of workers receiving less than the statutory minimum wages and amount of minimum wages and adding the explanatory variables of the percentages of population of those of age under 18 and of 65 and over, active job opening ratio of full-time employees and of part-time workers (conventional Poisson regression and hierarchical Bayes regression). The analysis showed that the coefficient of the minimum wage indicator in relation to the rate of workers receiving less than the statutory minimum wages was significantly positive. These results indicated that the statutory minimum wages were a constraint on the labor demand behavior and that noticeably workers who could not be absorbed in the sector to which the statutory minimum wages was applied were receiving less than the statutory minimum wages.

6. Results of a questionnaire survey on minimum wages

Chapter 6 contains the results of a survey conducted on businesses to investigate mainly on their awareness of the statutory regional and industrial minimum wages. We sent questionnaires to 10,000 businesses employing less than 30 employees (in case of manufacturers, less than 100 employees), of which 2,434 were replied. The percentage of business that replied that they “knew” the amount of the statutory regional minimum wages was 46.6 percent. But when we checked the amount of the statutory regional minimum wages that the businesses wrote on the questionnaires to see if they really knew the amount, only 590 enterprises, or 24.2 percent of all businesses that sent responses, actually knew the correct amount.

Similarly, we asked if they knew about the industrial minimum wage system, to which 40.6 percent replied that they did. As we did not ask about the amount of the statutory industrial minimum wages in the questionnaire, we could not confirm whether or not they really knew about the system or the amount of the statutory industrial minimum wages. If we also consider the results regarding the regional as well as industrial minimum wages, the percentage of businesses that really knew about the industrial minimum wage system is probably much less.

At any rate, there is a strong need to implement a policy for raising employers' awareness about the minimum wage systems.

The analyses conducted in the respective chapters of the report are wide-ranging.

The specific analyses on the economic effect of minimum wages conducted in this research will be as follows:

- (1) The effect of statutory minimum wages on employment (much of Chapter 2)
- (2) The effect of statutory minimum wages in underpinning wages (Chapters 3-1 and 4-1)
- (3) The effect of statutory minimum wages in raising pay rates (Chapter 4-2)
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Supplement: Some quantitative analysis on the awareness about the regional and industrial minimum wage systems