

The Impact of Minimum Wage Policies on Income Inequality: Evidence from China

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ABSTRACT

This paper examines the impact of China's minimum wage policy on income inequality. By analysing micro-survey data from China's urban labour market, this study uses microeconomic methods to assess the level and implementation of the minimum wage and its multiple impacts on the employment effect, the labour supply effect, the spillover effect, the inequality effect and the income distribution effect. It was found that the minimum wage policy, while raising the wage level of low-income groups, had a significant negative impact on the income of workers whose income levels fell within the 150 per cent to 250 per cent range of the previous period's minimum wage, suggesting that the minimum wage policy did not have a uniform effect in reducing the income gap.

KEYWORDS

Income Inequality, Minimum Wage Policy, Economic Development, Labour Market, Econometric Analysis, Policy Impact, Social Security

1. INTRODUCTION

1.1. Research background

Research on China's minimum wage policy shows that minimum wage standards are set and adjusted to ensure that low-income groups can share in the fruits of economic growth. Since 1993, when the Minimum Wage Regulations for Enterprises were first issued, China's minimum wage system has undergone a number of reforms to adapt to economic development and changes in the labour market.

The impact of minimum wage policies on income inequality is a complex topic. Some studies point out that minimum wage increases have helped to reduce wage gaps, but this has mainly been done as part of broader poverty reduction policy efforts. However, there are also studies that suggest that minimum wage increases may have a positive impact on certain low-income groups, such as women, and that the minimum wage may have a significant negative impact on workers whose income levels fall within the 150 per cent to 250 per cent range of the previous minimum wage.

In the long run, the minimum wage system may affect individuals' on-the-job training and human capital accumulation, which in turn affects wage earning capacity and wage inequality. Therefore, the design and implementation of minimum wage policies need to comprehensively consider their multifaceted impacts on the labour market to ensure that they protect low-income workers and promote healthy economic development at the same time.

1.2. Research significance

The setting and adjustment of the minimum wage has a complex impact on workers' income and income distribution. On the one hand, the minimum wage can raise the income level of low-income groups, especially female workers, thus reducing income inequality to some extent. On the other hand, for workers whose income levels fall within the 150 per cent to 250 per cent range of the previous minimum wage, an increase in the minimum wage may have a negative impact, leading to a reduction in their income⁷.

In addition, the long-term effects of the minimum wage are of concern. If individuals are exposed to the minimum wage at an earlier stage of the life cycle, it may affect their on-the-job training and human capital accumulation, which in turn affects individuals' wage-earning capacity and wage inequality¹. Therefore, the formulation and adjustment of minimum wage policies need to take into account their multifaceted impact on the labour market in order to achieve the goals of income equity and social stability.

2. LITERATURE REVIEW

2.1. International experience with minimum wage policies

In exploring the international experience of minimum wage policies, we can draw knowledge from the practices of different countries. Different countries set minimum wage rates according to their economic conditions and social needs. For example, Luxembourg, Australia and New Zealand have globally high minimum wage rates.

Minimum wage adjustments are usually linked to economic indicators such as cost of living, inflation rate and gross domestic product (GDP) growth rate. Minimum wages are intended to protect workers from exploitation, but they sometimes do not reflect actual subsistence wages, and even statutory minimum wages may not be sufficient to meet basic living needs. Proponents argue that minimum wages can increase consumers' purchasing power, stimulate economic growth, reduce poverty and help address social inequalities.

Opponents, on the other hand, are concerned that an increase in minimum wage may lead to higher costs for businesses, which in turn may lead to higher product prices and affect employment. In some European countries, such as Sweden or Belgium, the existence of a collective bargaining system has helped to prevent the growth of low wages and employment insecurity, as well as the growth of inequality².

The weakening of collective bargaining has led in some countries to an increase in the number of low-paid jobs and growing inequality among the labour force. Minimum wage policies help to protect workers from having their wages fall to too low a level and prevent further increases in poverty and inequality.

The effectiveness of minimum wages depends on broad legal coverage and compliance with minimum wage legislation. Most countries around the globe have a minimum wage, but in the informal economy many workers are paid less than the minimum wage.

In order to effectively protect workers and reduce inequality, minimum wages should be legally applicable to workers who are at high risk of being underpaid. These international experiences show that minimum wage policy is a complex subject that requires a combination of economic, social and legal considerations. Policy makers need to weigh the various possible economic and social effects when considering adjustments to the minimum wage. In addition, the successful implementation of minimum wage policies requires effective regulation and fair legal enforcement.

2.2. The development of China's minimum wage policy

The development of China's minimum wage policy is an important history that reflects the changes in the country's economic and social policies. The idea of a minimum wage policy in China originated in a proposal by the Chinese Labour Combination in 1925 and was subsequently clarified in the Labour Law of the Chinese Soviet Republic in the 1930s.

The Sixth Labour Conference in 1948 proposed that the minimum wage should guarantee the basic needs of workers and their families, and the importance of the minimum wage was also emphasized in the 1949 Common Programme.

After the reform and opening up of China, the minimum wage policy began to be implemented in various places; in 1989, Zhuhai, Guangdong Province, took the lead in establishing a minimum wage system. In 1993, the central government promulgated the Minimum Wage Regulations, and in 1994, the Labour Law reaffirmed the legal status of the minimum wage system. In 1995, provinces were required to set their own minimum wage standards by the end of the year, and by the end of 1995, the vast majority of provinces had set their own minimum wage standards¹. The Tibet Autonomous Region (TAR) set a minimum wage in November 2004, marking the introduction of the minimum wage system throughout mainland China.

In March 2004, the Ministry of Labour and Social Security (MLSS) rewrote the minimum wage regulations, and provinces began to institutionalise adjustments to the minimum wage. In 2015, the Ministry of Human Resources and Social Security issued a circular requiring minimum wage standards to be adjusted at least once every two to three years to meet the needs of economic and social development. This development demonstrates how China's minimum wage policy has gradually become an important legal system for protecting workers' rights and interests, and has been continuously adjusted and improved in line with economic development and social change. These changes reflect China's increasing protection of workers' rights and interests and its pursuit of social justice.

3. THEORETICAL FRAMEWORK AND RESEARCH HYPOTHESIS

3.1. Theoretical basis of the minimum wage policy

Classical economic theory: Classical economists such as Adam Smith and David Ricardo argued that wages are determined by supply and demand in the labour market. Minimum wage policies, as a market intervention, may lead to an increase in unemployment, especially for low-skilled workers.

Marx's labour theory of value: Marx believed that wages should reflect the productivity and cost of living of workers. The minimum wage system is the minimum material basis for production and reproduction by the owners of labour and the reflection of the value of labour.

Modern economic studies: Modern economic studies have different views on the impact of minimum wages. Some studies suggest that an increase in the minimum wage may not significantly affect employment rates, while others point out that an increase in the minimum wage may lead to a reduction in employment opportunities for low-skilled workers.

3.2. Measures of income inequality

Measures of income inequality are tools used to assess the equity of income distribution in a society or economy. The following are some of the commonly used measurement indicators.

Gini coefficient: The Gini coefficient is the most commonly used measure of income inequality. It has a value between 0 (perfect equality) and 1 (perfect inequality). A lower Gini coefficient indicates a more equal distribution of income.

Tyrell's Index: The Tyrell's Index is based on information theory concepts and is used to measure the degree of inequality in income distribution. It is more sensitive to changes at the top and bottom of the income distribution.

Atkinson's index: The Atkinson's index takes into account the sensitivity of the social welfare function to inequality. It can be adjusted to reflect the degree of social aversion to inequality by adjusting its parameters.

Coefficient of variation: The coefficient of variation is the ratio of the standard deviation to the mean and is used as a measure of relative dispersion, which can also be used to measure the degree of income inequality.

Lorenz curve: the Lorenz curve graphically represents the degree of inequality in the distribution of income or wealth. The ratio of the area below the curve to the area between the curve and the line of perfect equality (the 45-degree line) is the Gini coefficient.

Each of these indicators has advantages and disadvantages, and the choice depends on the specific purpose of the study and the data available. In practice, researchers may choose different indicators to measure income inequality according to different needs and preferences. The applicability and limitations of these indicators also need to be taken into account when comparing income inequality in different countries or regions.

4. EMPIRICAL ANALYSIS

4.1. Empirical Model Specification

In order to assess the impact of minimum wage policy on income inequality in China, we plan to adopt the following econometric analysis: We will construct an Ordinary Least Squares (OLS) model with the minimum wage policy as the main explanatory variable and incorporate a series of control variables to eliminate other possible interfering factors. The specific model setup is as follows:

$$Y = \beta_0 + \beta_1 \times \text{Minimum Wage Policy} + \beta_2 \times \text{Control Variables} + \varepsilon \quad (1)$$

In this model: y denotes a measure of income inequality. Minimum wage policy is the main explanatory variable we focus on. Control variables include other factors such as education level and industrial structure. ε represents the error term. β_0 is the intercept term of the model. β_1 , β_2 is the coefficient of the corresponding independent variable.

4.2. Empirical Modelling

In this study, we will apply the fixed effects model to conduct the empirical analysis. By incorporating individual-specific fixed effects, the model is able to effectively control for individual characteristics that are unobservable and may affect the results, thus eliminating the interference of these intrinsic factors. In addition, the fixed effects model captures individual characteristics that change over time, further enhancing the precision of the findings.

4.3. Variable Measurement

In this study, we take income inequality as the dependent variable, using the 2020 data released by the National Bureau of Statistics of China and measured by the Gini coefficient. The Gini coefficient is a widely used indicator that reflects the degree of inequality in income distribution. To calculate the Gini coefficient, we will use data provided by the National Bureau of Statistics or other relevant organisations and analyse the income of different regions and population groups to obtain a comprehensive and detailed overview of income inequality.

The independent variables are determined based on the 2020 Monthly Minimum Wage Standard issued by China's Ministry of Human Resources and Social Security (MOHRSS), and we have selected the lowest bracket of monthly minimum wage standard implemented in each city and log-transformed it to be used as the dependent variable. There may be multiple minimum wage rates in the same region as provinces will set different tiers of minimum wage rates according to the local economic and social development. The lowest tier of standards not only reflects the city-wide wage constraints, but also the frequency and magnitude of adjustment of the minimum wage standards. Therefore, the use of the lowest tier of minimum wage rates can be used as a representative indicator of the citywide minimum wage level and the magnitude of adjustment.

The control variables include gross domestic product per capita (PGDP), urbanisation rate (UR), share of output in secondary industry (IND), human capital level (CAP), population size (Popu) and financial development (FIN), which are sourced from the National Bureau of Statistics of China (NBSC), the World Bank and the People's Bank of China (PBC). These variables help us to control for other factors that may affect income inequality, so that we can more accurately assess the impact of the minimum wage policy.

4.4. Descriptive Statistics of Variables

Table 1 Variable Definitions and Statistics

Variable	Definition/Measurement Method	Sample size	Mean value	Standard deviation	Minimum value	Maximum value	Source
Income Inequality	Gini Index	1960	0.742	0.119	0.289	0.994	China National Bureau of Statistics(2020)
MW	Minimum wage standard	1960	1290	249	824	2474	China Human Resources and Social Security Bureau(2020)
WL	Income level index	1960	0.262	0.141	0.001	0.932	
PGDP	Per capita GDP (yuan)	1960	53905	31867	9468	215466	World Bank (2020)
UR	Population urbanization rate	1960	0.563	0.138	0.239	1.000	China National Bureau of Statistics(2020)
IND	The proportion of added value in the secondary industry	1960	0.449	0.100	0.118	0.798	
STR	The proportion of added value in the tertiary industry to that in the secondary industry	1960	1.033	0.507	0.202	5.156	
CAP	The proportion of undergraduate students in the total population	1960	0.019	0.019	0.002	0.113	

Popu	Total population (10000 people)	1960	460	360	44	3187	China National Bureau of Statistics (2020)
FIN	At the end of the year, the proportion of RMB loans to GDP in financial institutions	1960	1.028	0.617	0.118	9.623	People's Bank of China (2020)

4.5. Benchmark regression results

Table 2 Benchmark Regression Results

Variable	Income gap		Income level	
	MW	0.0039	0.0036	-0.0039
Control variable	NO	YES	NO	YES
Individual fixed effects	YES	YES	YES	YES
Time fixed effect	YES	YES	YES	YES
Sample size	1925	1925	1925	1925
R2	0.961	0.966	0.988	0.992

In this study, we use the minimum wage as the key variable in predicting income levels and income distribution. The regression analyses in Table 2 reveal the overall impact of minimum wage changes on income inequality and its structural effects. The results of the analyses show that when the minimum wage rises by 10 per cent, there is a significant increase in the income inequality index, specifically 0.0039 units, while there is a significant decrease in the income level index, by 0.0032 units. This suggests that an increase in the minimum wage may dampen the increase in the level of income, while an expansion in labour market supply does not reduce the equilibrium level of wages, but may instead lead to an increase in the cost of labour. In addition, although the increase in the income distribution index and the decrease in the income level index were similar, the average income inequality index for the sample as a whole was 0.742, much higher than the average income level index of 0.262, a difference that partly explains why the minimum wage policy might have led to an increase in income inequality.

5. CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1. Summary of the study

Econometric methods have been used to analyse the level and implementation of minimum wage standards and their impact on employment effects, labour supply effects, spillover effects, inequality effects and income distribution effects. These studies help to understand the impact and mechanism of action of the minimum wage system and provide reference for policy formulation. The intensity and standard of implementation of the minimum wage policy varies across regions, which may lead to regional differences in income inequality. There are different academic views on the impact of the minimum wage policy. Some studies have argued that a moderate increase in the minimum wage will not increase the unemployment rate and may even reduce it, while others have pointed out that an increase in the minimum wage may lead to a reduction in hiring by enterprises. In summary, the impact of minimum wage policies on income inequality in China is multifaceted and requires comprehensive consideration of factors such as policy design, implementation, and the economic environment. Future research may require more data and in-depth analyses to more accurately assess the long-term effects of minimum wage policies and potential room for improvement.

5.2. Policy recommendations and future research directions

The government should regularly review and adjust the minimum wage to reflect changes in the cost of living and to take into account equity while prioritising efficiency. Appropriately raise the starting point for personal income tax, increase tax regulation for high-income groups, and reduce personal tax expenditures for middle- and low-income groups.

Establish a social security system that integrates urban and rural areas, balances financial resources for payments between regions, and ensures that residents have access to education, medical care, and elderly care. Consider setting up a property tax, levying a property tax on property income exceeding a certain limit, and appropriately regulating the disparity of property income in the distribution of residents' income.

Future research directions may In-depth study of the impact of minimum wage policies on the labour market, especially the long-term effects on employment, wage distribution and labour productivity. Compare the minimum wage policies of different countries and analyse their effectiveness and limitations in reducing income inequality. To study the integrated role of minimum wage policies in the socio-economic structure by combining the multidisciplinary perspectives of economics, sociology and political science. To conduct more precise quantitative analyses of the impact of minimum wage policies using big data and econometric methods.

These recommendations and research directions aim to provide a comprehensive framework for China's minimum wage policy to promote a balance between equity and efficiency, as well as provide direction for future policymaking and academic research.

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