

UCLA

UCLA Electronic Theses and Dissertations

Title

Remuneration and social equity - Can the minimum wage promote common prosperity in China?

Permalink

<https://escholarship.org/uc/item/8kg123d8>

Author

Lai, Yuchen

Publication Date

2024

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

Los Angeles

Remuneration and social equity

- Can the minimum wage promote common prosperity in China?

A thesis submitted in partial satisfaction of the requirements

for the degree

Master of Applied Statistics and Data Science

by

Yuchen Lai

2024

© Copyright by

Yuchen Lai

2024

ABSTRACT OF THE THESIS

Remuneration and social equity

- Can the minimum wage promote common prosperity in China?

by

Yuchen Lai

Master of Applied Statistics and Data Science

University of California, Los Angeles, 2024

Professor Xiaowu Dai, Chair

As an important policy tool to regulate income distribution in the labor market, the minimum wage system is of great significance to whether it can effectively "raise" and "cover the bottom line". The paper first reviews relevant research, and draws the time and space changes in common prosperity, income level, and income equality, and empirically tests the impact and heterogeneity of minimum wage standards in various regions of China on common prosperity since the new era. The research results show that China's level of common prosperity shows obvious differences between the east and the west. The minimum wage standards in various regions in China have effectively narrowed the income gap, but inhibited the improvement of income levels. From a mechanism analysis, excessively raising the

minimum wage standards will gradually weaken the improvement of the income structure; the upgrading of the industrial structure has a negative impact on the minimum wage and The impact of common prosperity also has a significant moderating effect; the development of the digital economy significantly increases the positive effect of the minimum wage level on common prosperity and income levels, while inhibiting the effect of the minimum wage level on improving income gaps; the greater the proportion of poverty-stricken counties , the stronger the income distribution effect of the minimum wage. Finally, the research of this article is summarized and prospected.

The thesis of Yuchen Lai is approved.

Nicolas Christou

Frederic R. Paik Schoenberg

Xiaowu Dai, Committee Chair

University of California, Los Angeles

2024

TABLE OF CONTENTS

chapter 1 Introduction	1
chapter 2 Literature Review	4
chapter 3 Measurement and Analysis.....	7
3.1 Entropy weight method measurement	7
3.2 income equality index.....	9
3.3 Income level index.....	12
3.4 Common prosperity level	15
chapter 4 Empirical Research.....	18
4.1 Model building	18
4.2 Variable selection	19
4.3 Baseline regression	22
4.4 Mechanism analysis.....	27
4.4.1 Analysis of salary matching mechanism.....	27
4.4.2 Analysis of industrial structure mechanism.....	29
4.4.3 Analysis of digital economy development mechanism.....	30
4.4.4 Analysis of the moderating effect of the proportion of poverty-stricken counties .	32
Chapter 5 Conclusion and further research	34
5.1 Conclusion	34
5.2 further research	35
references	36

LIST OF FIGURES

Figure 3-1 China`s urban Income Equality Index in 2019	10
Figure 3-2 China`s urban income equality index in 2013-2019	11
Figure 3-3 China`s urban income level index in 2019	13
Figure 3-4 Kernel density map of income levels in Chinese cities from 2013 to 2019 .	14
Figure 3-5 2019 common prosperity index of Chinese Cities.....	16
Figure 3-6 Core density map of common prosperity in Chinese cities from 2013 to 2019	17
Figure 4-1 Residual test plot	25
Figure 4-2 Model test goodness of fit diagram	26

LIST OF TABLES

Tab 3-1 Common Wealth Measurement Table	8
Tab 4-1 Variable meaning and descriptive statistics.....	21
Tab 4-2 The impact of minimum income on common prosperity.....	22
Tab 4-3 vif test.....	24
Tab 4-4 The impact of minimum wage on income equality and income level	26
Tab 4-5 Moderating effect of wage matching	28
Tab 4-6 The regulating effect of industrial structure.....	29
Tab 4-7 The regulatory role of digital economy development.....	31
Tab 4-8 The regulating effect of the proportion of poverty-stricken counties	32

chapter 1 Introduction

Chinese-style modernization is the modernization of common wealth. Common wealth is the proper meaning of socialism, and realising common wealth is the inevitable requirement of socialism. Since the reform and opening up, China has experienced rapid development and achieved a miracle of economic growth, but the imbalance and insufficiency of development has become a major obstacle to meeting the people's needs for a better life, and the income disparity between regions, urban and rural areas, and groups in China is still large. According to data from the National Bureau of Statistics, China's income Gini coefficient has remained at a high level of around 0.460 in recent years, despite a certain decline. From international experience, high income disparity, lack of attention to income distribution and neglect of the coordinated development of the rich and the common will not only lead to the lack of endogenous economic growth momentum in high-income countries, but also become an important reason why middle-income countries are difficult to cross the "middle-income trap". Narrowing the gap between the rich and the poor and realising common prosperity has become an important focus and an inevitable requirement for China to continuously improve the quality of its economic development and the people's sense of well-being. The key to achieving common prosperity in China lies in raising the income of low-income people. "Raising the income of the low-income group" is not only the basis for "expanding the middle-income group", but also effective in narrowing the "three major gaps", i.e., the urban-rural gap, the regional gap, and the income equality. The gap between urban and rural areas, between regions,

and between incomes. More importantly, although China's battle against poverty has been fully won at this stage, the low-income group in China is still relatively large, accounting for more than 60 per cent of the entire population, or nearly 900 million people. Therefore, how to make the fruits of development benefit low-income people more, and to achieve higher incomes and a richer life for low-income groups, is both an important element of China's income distribution reform and a major tool for the substantive promotion of common prosperity. Since the new era, China has greatly promoted the poverty alleviation and income increase of low-income groups through the implementation of major strategies such as targeted poverty alleviation, poverty alleviation and rural revitalization, and has provided good material conditions and institutional guarantees for the continued promotion of common prosperity. At the same time, as a conventional distribution policy tool, the minimum wage system is an important means for the government to intervene in the primary distribution of the labor market. It regulates the income difference between low-income groups and high-income groups by limiting the minimum level of wages, and then Improve the income distribution pattern. China officially implemented the "Minimum Wage Regulations" in 2004. Its purpose is to protect workers' legitimate rights and interests in obtaining labor remuneration, protect the basic lives of individual workers and their family members, and effectively play the role of "raising the minimum wage", "covering the bottom line", and adjusting the role of income distribution. The minimum wage system imposes constraints on the minimum level of wage standards through non-market "raising" means. Considering its legal coercive force, the minimum wage standard is generally used as a direct and effective means of "raising".

Although the minimum wage system has played a huge role in ensuring the income of low-income groups, the formulation and adjustment of the minimum wage standard must be very prudent. Once it is divorced from the actual economic development and employment status of the region, it will not only not help improve the income distribution pattern, but may even damage the income distribution pattern. The employment and income increase of the target groups under the policy will have certain negative impacts. Therefore, this thesis will conduct research on the minimum wage standard and the realization of common prosperity based on 275 prefecture-level cities in China. At the same time, this thesis will consider the moderating effect of many variables such as income level, wage matching degree, and industrial structure on the impact of the minimum wage on common prosperity. At the same time, this thesis will also use various methods such as the instrumental variable method to test the accuracy of the model.

chapter 2 Literature Review

To promote common prosperity and narrow the "three gaps", the most important thing is to narrow the income equality (Li Shi, 2022). As a policy tool for primary distribution, the key to whether minimum wage adjustment can promote common prosperity lies in whether it can raise the income level of low-income groups and improve the pattern of income distribution. Firstly, the impact of the minimum wage system on the income level hinges on the relative intensity of the increase in the wage level of workers and the size of the loss of employment. The minimum wage system first affects individuals below or near the minimum wage standard, and the lower the income level of laborers, the stronger the boost to their income from an increase in the minimum wage standard. However, due to the substitution effect of high-skilled laborers on low-skilled laborers and the climbing effect between groups with different income levels, individuals with higher income levels will also have their wage levels increased to some extent, but the promotion effect will weaken with the rise in income levels, i.e. there is a ripple effect (Acemoglu, 1998). Whether the wage growth resulting from an increase in the minimum wage can offset its adverse impact on employment determines whether the change in the minimum wage will ultimately raise the overall level of income.

Secondly, as an important means of "raising" labor income, the minimum wage system is particularly important as to whether it can effectively protect the income levels of low-income groups and their families and improve the income distribution pattern. One view is that raising the minimum wage level will have a positive impact on poverty reduction and

income equality, that is, there is a poverty reduction effect (Sotomayor, 2021). However, considering that the income distribution effect of the minimum wage is often heterogeneous, its positive effect on urban residents may be stronger (Duan Zhimin and Hao Feng, 2019), which will lead to the poverty reduction effect of the minimum wage policy. Probably not significant. Another view is that the minimum wage standard may not be an effective means of “raising”. This policy will have a strong impact on the employment of low-income groups and may not be conducive to improving family income distribution (Neumark and Wascher, 2008). In addition, the minimum wage system may have a non-linear effect on poverty reduction, and raising the minimum wage standard can reduce inequality to a certain extent (Zhang Shiwei and Jia Peng, 2014). Therefore, the minimum wage system can usually increase the wage income of low-income groups (Ye Linxiang et al., 2015; Ma Shuang et al., 2017), but it will also increase the labor costs of enterprises and have a certain negative effect on the job market, especially for low-skilled workers. employment of workers (Neumark and Wascher, 2007).

In practice, the methods and processes for formulating minimum wage standards are relatively complex, and scientific and accurate measurement of standards in various regions often faces many difficulties, which to a certain extent restricts the effective effect of the policy. However, its specific values are available on major official websites. All can be inquired. Statistical measures of common prosperity are usually developed from different dimensions, such as development dimension, sharing dimension, etc. (liu, et al, 2023), but the essence is still developed from the perspective of income level (affluence) and income equality

(community). Therefore, when measuring the level of common prosperity, this article will grasp its essence and start from two aspects: income level and income equality. It will also measure the impact of the minimum wage on these two aspects.

chapter 3 Measurement and Analysis

3.1 Entropy weight method measurement

Common prosperity is multi-dimensional, but the quality of data at the city level is relatively low, and other dimensional indicators are seriously missing. If a complex measurement indicator system is used, it may lead to measurement errors. Therefore, this thesis explores the impact of the minimum wage standard on common prosperity from the perspectives of income level and income equality. Considering the Kuznets curve of income distribution, there is an interaction between income level and income equality. Therefore, this thesis uses the geometric mean of the two indices of income level and income equality as the comprehensive level of common prosperity. The measurement index system is shown in Table 3-1 Show. The city's income level is characterized through absolute income and relative income, and intra-regional differences and urban-rural differences are used to reflect the level of income equality in the region. For each secondary indicator, the entropy weight method is used to calculate the income level and income equality index respectively. The greater the income level index and income equality index, the higher the income level, the smaller the income gap, and the higher the level of common prosperity.

The data required for the calculation of common prosperity come from the "China Urban Statistical Yearbook" and the statistical yearbooks of various provinces and cities from 2013 to 2019. The Theil index is manually calculated by Excel.

Tab 3-1 Common Wealth Measurement Table

First-level indicator	Second-level indicator	Specific indicator	Nature of indicator
Income level	Absolute income	Per capita disposable income	positive
	Relative income	Regional per capita disposable income/National per capita disposable income	positive
Income equality	Urban-rural disparity	Urban-rural per capita disposable income Theil T index	Negative
	Regional differences	Theil T index of DN mean in each county and urban area	Negative

In order to better understand the calculation process of the common prosperity index, income level and income equality, the following will focus on the application of the entropy weight method.

First, standardize the data to eliminate the order of magnitude effects between different indicators:

$$x'_{ij} = \frac{x_{ij} - x_{\min}}{x_{\max} - x_{\min}} \quad (3.1)$$

Secondly, calculate the proportion of each index and measure the entropy value of the j index:

$$p_{ij} = \frac{x'_{ij}}{\sum_{i=1}^T \sum_{i=1}^N x'_{ij}} \quad (3.2)$$

$$e_j = -K \sum_{i=1}^T \sum_{i=1}^N p_{ij} \ln(p_{ij}) \quad (3.3)$$

where k is Boltzmann's constant,

$$K = 1 / \ln(TN) \quad (3.4)$$

Finally, calculate the coefficient of variation and the weight of the j-th index, and then obtain the final income level and income equality index of various cities in China:

$$g_j = 1 - e_j \quad (3.5)$$

$$w_j = \frac{g_j}{\sum_{j=1}^3 g_j} \quad (3.6)$$

$$y_{ij} = w_j x'_{ij} \quad (3.7)$$

3.2 income equality index

For better understanding, we set the income equality index as a positive indicator. The greater the income equality index, the bigger the income equality between regions and more reasonable regional development.

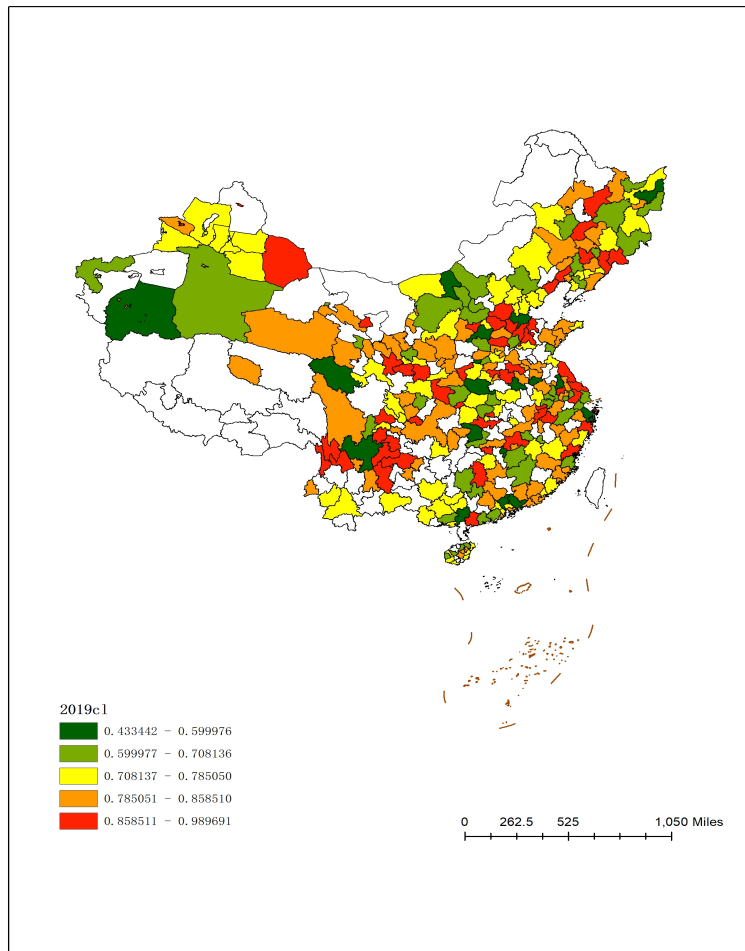


Figure 3-1 China's urban Income Equality Index in 2019

Figure 3-1 shows the income equality level in 2019, where green indicates a smaller income equality index and red indicates a larger income equality index. It is worth noting that areas with smaller income gaps are not strictly limited to less affluent areas, and some economically developed areas also have smaller income gaps, which indicates that redistribution policies are effective or income distribution is homogeneous. Green areas, especially in cities with booming economies and large numbers of migrant workers, reveal the huge income gaps that often accompany rapid economic growth. Changes in the income equality index reflect economic policies, industrial structure and labor market dynamics within the region. Rapid industrialization and urbanization in some regions created wealth but also

increased income inequality. In addition, the hukou system affects the distribution of public services and economic opportunities, leading to income disparities.

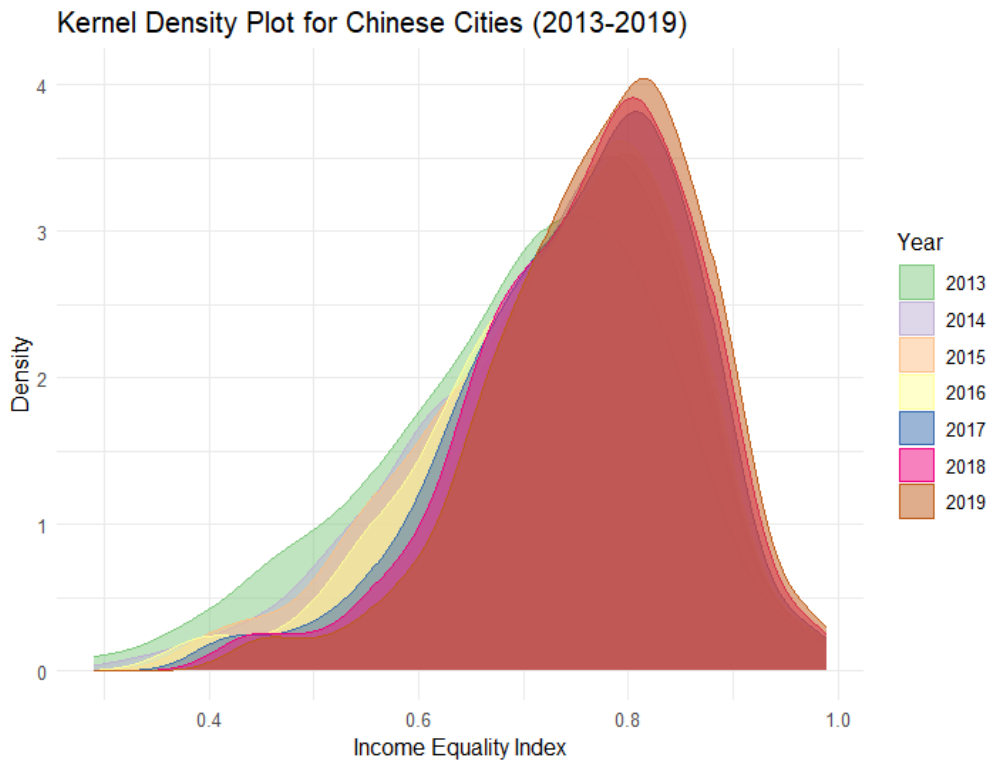


Figure 3-2 China's urban income equality index in 2013-2019

It can be seen from the figure that over time, the peak of the curve gradually moves to the right, which means that the income equality index has increased. This shows that the income gap is narrowing and income distribution is becoming more equitable. From a separate perspective, although the income equality index has increased as a whole, the peak density of the curve has decreased, indicating that although the overall income equality has improved, the difference in income equality index between prefecture-level cities has also increased. The increase in the income equality index may reflect the government's efforts to reduce income inequality, such as raising the minimum wage and increasing investment in social security and public services.

3.3 Income level index

In the 2019 income level index chart, green indicates a lower income level, and red indicates a higher income level. As shown in the figure, the areas with the highest income levels are concentrated in eastern and southern coastal cities such as Shanghai, Beijing, Shenzhen, and Guangzhou. These areas are known for their high concentration of industry, services and economic activity, which naturally translates into higher income levels. The central and western regions (shown in green and yellow) show lower income levels, consistent with their less developed economies. The eastern region's higher income levels can be attributed to its success in attracting foreign investment, advanced technology industries and better access to global markets. Differences in income levels between regions are also affected by government investment priorities, availability of skilled labor and infrastructure development.

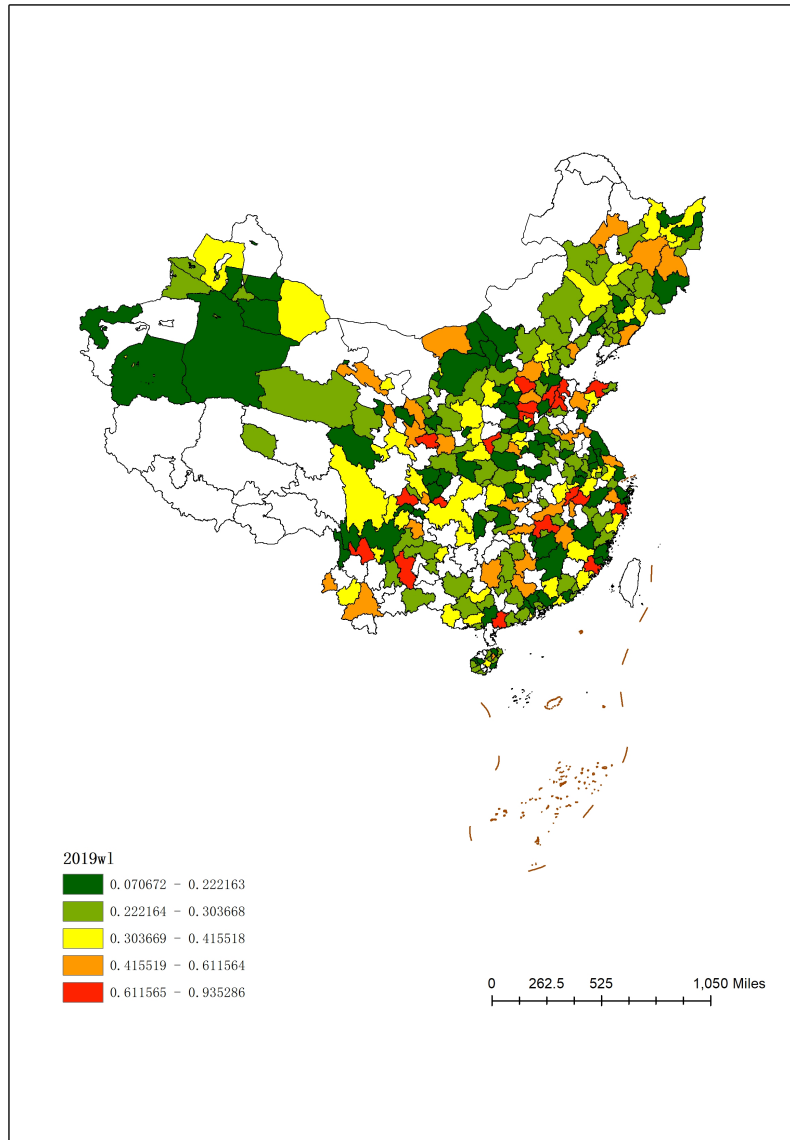


Figure 3-3 China's urban income level index in 2019

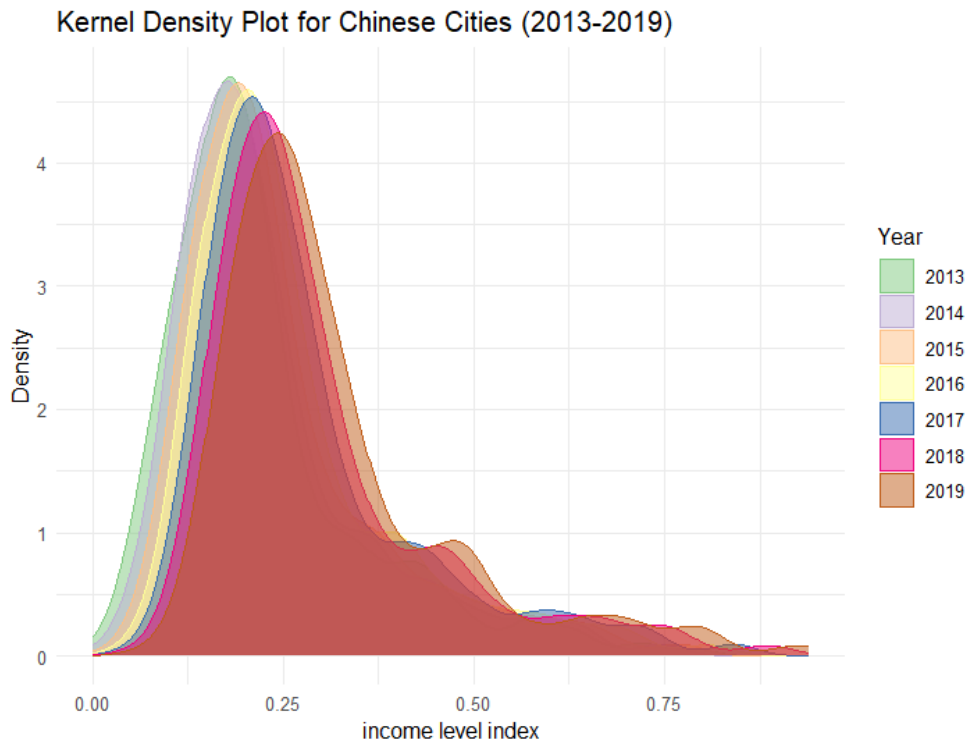


Figure 3-4 Kernel density map of income levels in Chinese cities from 2013 to 2019

It can be seen from the income level kernel density plot that the density peak decreases slightly over time and moves to the right, which indicates that the overall income level has improved. There are long tails on the right side of each curve, indicating that although most of the income distribution is concentrated in the lower income index, there are still a significant number of cities with higher income levels. We can draw some conclusions. Although the income level index of most cities is concentrated in the lower range, the overall income level has improved over time. This may be related to China's continued economic growth and urbanization process. In addition, the long tail part of the curve reveals the unevenness of income distribution, with some cities having much higher income levels than others. This uneven distribution may be related to factors such as uneven regional development, differences in industrial structure, and policy orientation.

3.4 Common prosperity level

The 2019 common prosperity map of Chinese cities shows a color gradient from green to red to represent the improvement in the degree of common prosperity between cities, with green representing a lower level and red representing a higher level. Western China, including provinces such as Tibet, Qinghai and parts of Xinjiang, is mostly shaded in dark green, indicating lower levels of shared prosperity. In contrast, the eastern coastal areas, including the Yangtze River Delta, the Pearl River Delta and the Bohai Rim Economic Circle, are dominated by orange and red colors, signaling a higher degree of shared prosperity. The distribution of common prosperity is intrinsically linked to regional economic development. China's eastern provinces have historically benefited from economic reforms and opening-up policies, resulting in significant foreign investment, strong manufacturing and services sectors, and higher overall economic growth. This growth has led to improvements in living standards and infrastructure, helping to improve shared prosperity scores. However, the western region is limited by geographical conditions such as mountains, with low transportation convenience and economic integration, low common prosperity, and slow economic development.

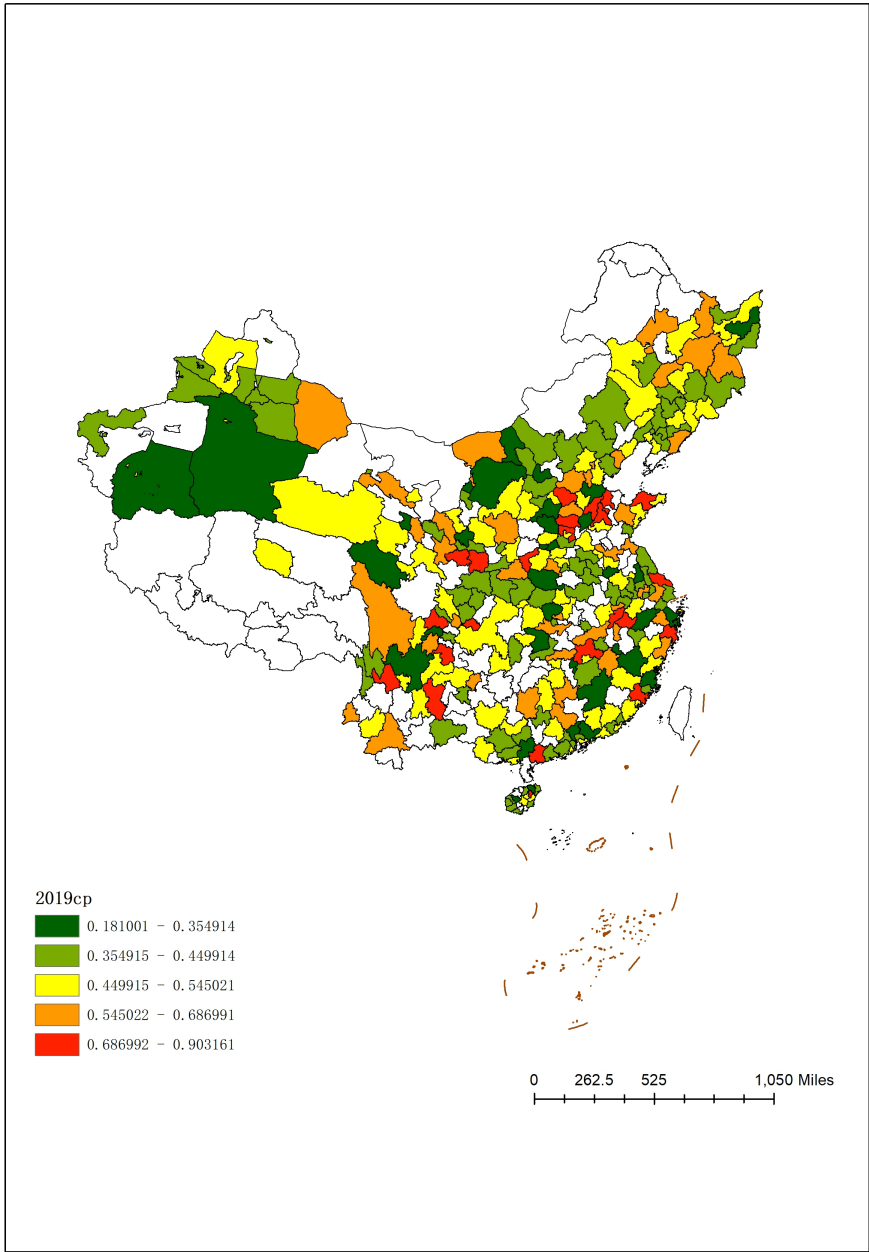


Figure 3-5 2019 common prosperity index of Chinese Cities

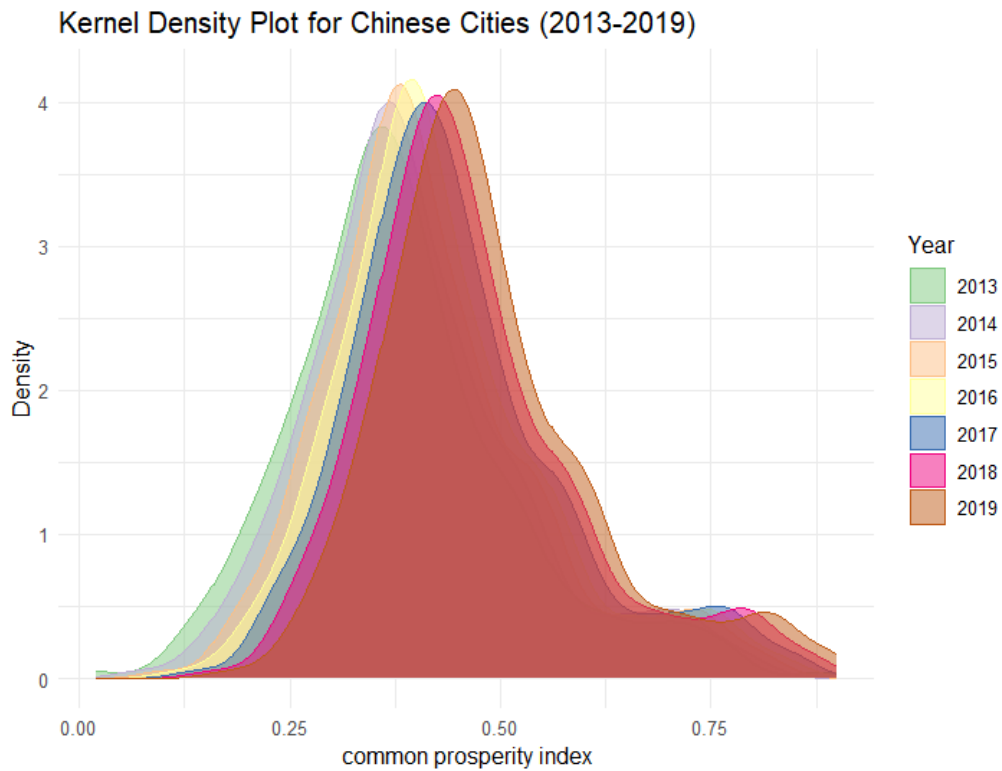


Figure 3-6 Core density map of common prosperity in Chinese cities from 2013 to 2019

It can be seen from the density map that the common prosperity index shows a certain growth trend in Chinese cities over time. This may reflect the results of China's economic development in the past few years, as well as policy efforts to narrow the gap between urban and rural areas and improve people's living standards. However, there is still room for improvement in absolute terms. Most indices are concentrated around 0.5, and the process is also slow. It is relatively slow and coordinated development still needs to go further.

chapter 4 Empirical Research

4.1 Model building

First, we will build relevant econometric models to explore the impact of the minimum wage on common prosperity, income level and income equality:

$$CP_{i,t} = \alpha + \beta_1 MW_{i,t} + \sum \text{control}_{i,t} + v_i + u_t \quad (4.1)$$

$$CL_{i,t} = \alpha + \beta_1 MW_{i,t} + \sum \text{control}_{i,t} + v_i + u_t \quad (4.2)$$

$$WL_{i,t} = \alpha + \beta_1 MW_{i,t} + \sum \text{control}_{i,t} + v_i + u_t \quad (4.3)$$

In the formula, cp, cl, and wl represent common prosperity, income equality, and income level respectively, wm is the minimum wage, and control represents other related variables.

Next, we should explore the regulating mechanism of the minimum wage level's impact on common prosperity:

$$CP_{i,t} = \alpha + \beta_1 MW_{i,t} + \beta_2 rw_{i,t} + \beta_3 MW_{i,t} * rw_{i,t} + \sum \text{control}_{i,t} + v_i + u_t \quad (4.4)$$

$$CP_{i,t} = \alpha + \beta_1 MW_{i,t} + \beta_2 str_{i,t} + \beta_3 MW_{i,t} * str_{i,t} + \sum \text{control}_{i,t} + v_i + u_t \quad (4.5)$$

$$CP_{i,t} = \alpha + \beta_1 MW_{i,t} + \beta_2 dig_{i,t} + \beta_3 MW_{i,t} * dig_{i,t} + \sum \text{control}_{i,t} + v_i + u_t \quad (4.6)$$

$$CP_{i,t} = \alpha + \beta_1 MW_{i,t} + \beta_2 pcr_{i,t} + \beta_3 MW_{i,t} * pcr_{i,t} + \sum \text{control}_{i,t} + v_i + u_t \quad (4.7)$$

Among them, rw, str, dig and pcr respectively represent wage matching, industrial structure, digital economy and proportion of poverty-stricken counties, and explore the

regulatory mechanism effect of the minimum wage on common prosperity.

4.2 Variable selection

1. Response variable

This thesis uses the city-wide common prosperity index of prefecture-level cities and above as the explained variable, and refers to previous research to construct an indicator system for calculating income level and income equality index. Considering the Kuznets curve of income distribution, there is an interaction between income level and income equality. Therefore, this thesis uses the geometric mean of the two indices of income level and income equality as the comprehensive level of common prosperity. The explained variables have been detailed in the previous thesis. analysis.

2. Explanatory variables

This thesis selects the lowest monthly minimum wage standard implemented in each city and uses logarithm processing as the explanatory variable. The minimum wage standards in each region are usually determined by each province based on the economic and social development conditions of the region. Each region determines the corresponding minimum wage standards for counties and cities based on local development conditions and needs. Therefore, multiple minimum wage standards usually appear in prefecture-level cities at the same time, and the lowest local standard not only reflects the common wage constraints of all regions and populations in the city, but also reflects the adjustment time and extent of the minimum wage standard. Therefore, using the lowest minimum wage standard is highly representative when used as a proxy indicator for the city's overall minimum wage standard

level, adjustment and adjustment range.

3. Control variables

Select GDP per capita (PGDP), urbanization rate (UR), proportion of added value of the secondary industry (IND), industrial structure advancement (STR), human capital level (CAP), government size (EP), and population size (Popu). , foreign investment use (FDI), financial development (FIN) and digital economy development level (DIG) as control variables.

4. Adjusting variables

The individual quantiles affected by changes in the minimum wage level may be different, that is, the relative levels of the minimum wage standard in the city's current income distribution are different, and the impact of the minimum wage standard on common prosperity is different. However, due to the lack of income distribution data in each city, the minimum wage standard is used to measure the relative level of urban wages, and is used as a modulating variable to explore the impact of changes in the minimum wage standard on common prosperity. Since changes in the minimum wage standard have a particularly significant impact on low-income and low-skilled individuals, differences in human capital corresponding to differences in development levels and industrial structures in various regions may have a moderating effect on the effects of the minimum wage policy. Therefore, the development level of the digital economy and industrial structure are selected as mechanism variables to explore the impact of the minimum wage level on common prosperity. With the implementation of poverty alleviation and rural revitalization, assistance to poor areas has continued to increase. The role of the minimum wage standard in poor areas deserves attention.

Minimum wage data comes from the Ministry of Human Resources and Social Security. Common prosperity, income level, income equality index and control variable data come from the "China Urban Statistical Yearbook", CNRDS database, CSMAR database and EPS database over the years. Data on digital inclusive finance are jointly compiled by the Digital Finance Research Center of Peking University and Ant Group. Digital Financial Inclusion Index. The missing data were filled in using the interpolation method, and finally the balanced panel data of 275 cities at the prefecture level and above from 2013 to 2019 was obtained. The meaning of each variable and the descriptive statistical results are shown in Table 4-1.

Tab 4-1 Variable meaning and descriptive statistics

Variable	Meaning	Sample Size	Mean	SD	min	max
CP	Common prosperity	1925	0.432	0.134	0.019	0.903
CL	Income equality(common level)	1925	0.739	0.118	0.287	0.992
WL	Income level(affluence level)	1925	0.265	0.144	0.001	0.935
MW	Minimum wage, treated as logarithm in regression	1925	1296	255	830	2480
PGDP	GDP per capita (yuan), treated as logarithm in regression	1925	53927	31889	9490	215488
UR	Population urbanization rate	1925	0.562	0.137	0.241	1
IND	The proportion of added value of the secondary industry	1925	0.453	0.1	0.114	0.794
STR	The ratio of the added value of the tertiary industry to the added value of the secondary industry	1925	1.039	0.524	0.207	5.154
CAP	Proportion of undergraduate and junior college students in the total population	1925	0.017	0.017	0.002	0.101
EP	Fiscal expenditure as a share of GDP	1925	0.211	0.116	0.044	2.06
Popu	Total population (10,000 people), treated as logarithm in regression	1925	460	360	44	3187

FDI	The actual use of foreign capital in the current year (converted according to the current exchange rate) as a proportion of GDP	1925	0.016	0.018	0	0.21
FIN	The balance of RMB loans of financial institutions as a proportion of GDP at the end of the year	1925	1.028	0.617	0.118	9.623
DIG	Digital Economy Development Index	1925	0.105	0.056	0.037	0.82
PCR	The number of poverty-stricken counties as a proportion of the total number of counties and cities under the jurisdiction of the city	1925	0.171	0.266	0	1

4.3 Baseline regression

The regression results show that the minimum wage level has a significant inhibitory effect on common prosperity. When control variables are added, the coefficient size and significance are relatively robust, and for every 10% increase in the minimum wage level, the level of common prosperity decreases by 0.001 units.

Tab 4-2 The impact of minimum income on common prosperity

VARIABLES	(2) CP	(3) CP
mw	-0.015**	-0.014***
	(-2.07)	(-3.57)
pgdp		0.024***
		(6.19)
ur		0.491***
		(21.79)
ind		0.019
		(0.96)
str		0.006*

		(1.95)
cap	0.238***	
		(2.67)
ep	-0.007*	
		(-1.72)
popu	0.024*	
		(1.72)
fdi	0.024	
		(0.88)
fin	0.002*	
		(1.95)
dig	0.083***	
		(3.66)
Constant	0.538***	-0.229*
	(10.58)	(-1.79)
Observations	1,925	1,925
R-squared	0.991	0.996

From a dimensional perspective, every 10% increase in the minimum wage level will significantly increase the income equality index by 0.004 units and significantly decrease the income level index by 0.004 units. On the one hand, raising the minimum wage level is conducive to bridging the income equality. Changes in the minimum wage level improve the income distribution pattern between urban and rural areas and between regions. It has positive significance for adjusting urban and rural differences and regional differences, and encouraging low-income people to find employment. On the other hand, the minimum wage standard also inhibits the improvement of income levels. The increase in labor supply cannot reduce the equilibrium wage level, but increases labor costs. The policy effect of the minimum wage is mainly employment effect, and the wage effect is relatively weak. Furthermore,

although the coefficients of an increase in the income distribution index and a decrease in the income level are roughly equal, the mean value of the income equality index for the entire sample is 0.739, which is significantly higher than the mean value of the income level index of 0.265. This explains to a certain extent why the minimum wage is raised. Standards will lead to a decline in common prosperity.

Tab 4-3 vif test

Variable	VIF	1/VIF
ind	5.69	0.17577
str	5.4	0.185166
pgdp	5.22	0.191572
ur	3.21	0.31193
dig	2.46	0.406792
ep	2.37	0.422748
cap	2.14	0.466748
fin	2.09	0.477674
mw	1.87	0.534168
popu	1.48	0.675755
fdi	1.18	0.844002
Mean		
VIF	3.01	

It can be seen from the vif test that the vif values of all independent variables are less than 10, and the mean vif value is 3.01, indicating that there is no multicollinearity problem.

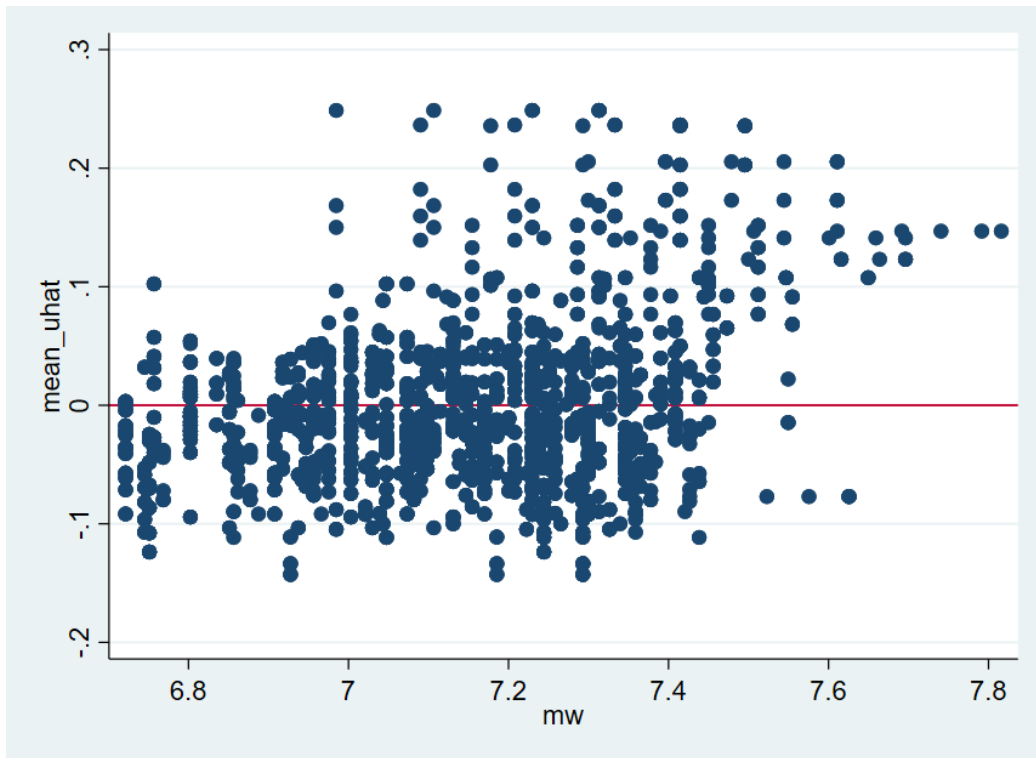


Figure 4-1 Residual test plot

It can be seen from the residual test plot that the core variable minimum wage level and residual scatter points present a random distribution. Although there are outliers, the overall distribution is good, indicating that the model fits well and verifies the relevant arguments of this thesis.

In order to verify the fit of the model, the data set was divided into a training set and a test set with 0.7 as the limit, and the goodness of fit test of the model was conducted. The rse of the test was 0.0493, indicating that the model has good fit. It can be seen from the fitting diagram that most of the points are concentrated around the red line. Although there are some outliers, the degree of dispersion is low. It can be considered that the model has good goodness of fit.

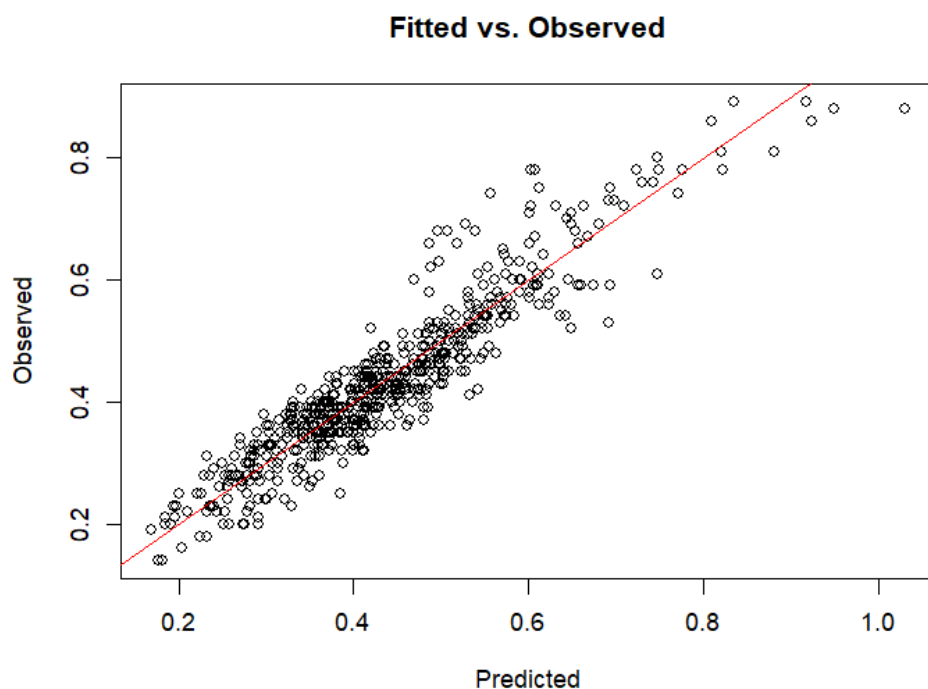


Figure 4-2 Model test goodness of fit diagram

Tab 4-4 The impact of minimum wage on income equality and income level

VARIAB	(4) cl	(5) cl	(6) wl	(7) wl
LES				
mw	0.038***	0.036***	-0.039***	-0.035***
pgdp	(3.10)	(3.13) -0.005	(-4.60)	(-5.74) 0.020***
ur		(-0.47) 0.400***		(3.19) 0.416***
ind		(4.86) 0.031		(7.47) 0.016
str		(0.78) -0.000		(0.49) 0.000
cap		(-0.05) 0.047		(0.09) 0.319**
		(0.29)		(2.13)

ep		0.012		-0.012**
		(0.76)		(-1.99)
popu		-0.057**		0.080***
		(-2.31)		(3.46)
fdi		0.075*		-0.035
		(1.66)		(-0.98)
fin		-0.001		0.002
		(-0.38)		(1.19)
dig		0.025		0.197***
		(1.03)		(5.32)
Constant	0.469***	0.750***	0.544***	-0.629***
	(5.38)	(3.09)	(8.98)	(-3.15)
Observations	1,925	1,925	1,925	1,925
R-squared	0.961	0.966	0.988	0.992

4.4 Mechanism analysis

In the mechanism analysis part, we will explore the moderating effects of wage matching and industrial structure on the impact of minimum wages on common prosperity.

4.4.1 Analysis of salary matching mechanism

Table 4-5 explores the impact of the degree of matching between the current minimum wage standard and existing wage levels on the role of the minimum wage standard. The results show that as the minimum wage accounts for a higher proportion of the average salary of employees, the positive effect of the minimum wage on common prosperity becomes smaller. Looking at the sub-dimensions, for income level, the more the minimum wage level exceeds the current wage level, the greater the inhibitory effect of the increase in the minimum wage

standard on the income level. For the income equality index, the coefficient of the interaction term is negative but not significant. Therefore, the minimum wage level is close to the critical value for narrowing the income equality. Without taking into account the current level of economic development, excessively raising the minimum wage standard will gradually weaken the improvement in the income structure.

Tab 4-5 Moderating effect of wage matching

VARIABLES	(1) cp	(2) cl	(3) wl
mw	-0.012** (-2.45)	0.045** (2.52)	-0.062*** (-6.22)
c.c_mw#c.c_rw	-0.188*** (-3.97)	-0.049 (-0.38)	-0.483*** (-4.82)
rw	-0.031* (-1.82)	-0.041 (-0.75)	0.029 (1.01)
pgdp	0.024*** (6.43)	-0.005 (-0.55)	0.024*** (4.00)
ur	0.482*** (21.87)	0.396*** (4.84)	0.396*** (7.95)
ind	0.017 (0.86)	0.030 (0.77)	0.016 (0.53)
str	0.006** (2.01)	-0.001 (-0.10)	0.002 (0.38)
cap	0.240*** (2.79)	0.050 (0.30)	0.317** (2.27)
ep	-0.006 (-1.56)	0.012 (0.75)	-0.007* (-1.66)
popu	0.012 (0.90)	-0.060** (-2.30)	0.050** (2.21)
fdi	0.027 (1.07)	0.074* (1.65)	-0.016 (-0.48)
fin	0.002* (1.95)	-0.001 (-0.38)	0.002 (1.03)
dig	0.074*** (3.25)	0.023 (0.89)	0.174*** (5.01)
Constant	-0.130 (-1.01)	0.734** (2.58)	-0.226 (-1.11)

Observations	1,913	1,913	1,913
R-squared	0.996	0.966	0.992

4.4.2 Analysis of industrial structure mechanism

Table 4-6 explores the impact of changes in local industrial structure on the economic effects of the minimum wage standard. The results show that the upgrading of industrial structure also has a significant moderating effect on the impact of minimum wage and common prosperity, but there are differences in various dimensions of common prosperity. The more advanced the industrial structure is, the more positive the impact of an increase in the minimum wage level will be on common prosperity and income levels, while the more negative the impact will be on income equalities. The reason may be that the more advanced the industrial structure is, the greater the proportion of the tertiary industry dominated by commerce and service industries, and the greater the demand for low-skilled labor. The wages of employees are more closely related to the minimum wage standard, and the wage effect of the minimum wage is more obvious. At the same time, as the industrial structure advances, the demand for labor in the tertiary industry continues to increase, and the employment effect of the increase in the minimum wage level is relatively weak. Generally speaking, the increase in the minimum wage standard promotes the income level of employees in related industries, that is, it increases their income level.

Tab 4-6 The regulating effect of industrial structure

VARIABLES	(1) cp	(2) cl	(3) wl
mw	-0.126** (-2.10)	0.368*** (3.03)	-0.634*** (-5.64)
c.c_mw#c.c_str	0.019*	-0.057***	0.102***

	(1.89)	(-2.80)	(5.36)
pgdp	0.024***	-0.006	0.022***
	(6.30)	(-0.58)	(3.69)
ur	0.490***	0.405***	0.407***
	(21.80)	(4.98)	(7.76)
ind	0.020	0.030	0.018
	(1.00)	(0.76)	(0.61)
str	0.006**	-0.001	0.001
	(2.09)	(-0.13)	(0.31)
cap	0.234***	0.058	0.299**
	(2.71)	(0.35)	(2.21)
ep	-0.006	0.011	-0.010*
	(-1.58)	(0.72)	(-1.72)
popu	0.023*	-0.054**	0.076***
	(1.67)	(-2.17)	(3.55)
fdi	0.023	0.078*	-0.040
	(0.84)	(1.72)	(-1.20)
fin	0.002*	-0.001	0.002
	(1.96)	(-0.39)	(1.26)
dig	0.079***	0.038	0.174***
	(3.11)	(1.60)	(4.30)
Constant	0.576	-1.634*	3.669***
	(1.24)	(-1.77)	(4.35)
Observations	1,925	1,925	1,925
R-squared	0.996	0.966	0.993

4.4.3 Analysis of digital economy development mechanism

There is heterogeneity in the regulatory effect of the digital economy on the impact of the minimum wage and common prosperity. The development of the digital economy significantly enhances the positive effect of the minimum wage level on common prosperity and income levels, while inhibiting the effect of the minimum wage level on improving income equalities. The reason may be that digital economy-related industries are generally distributed in cities and relatively economically developed areas, and there is a large demand for cheap labor in

such industries such as express delivery and takeout. At the same time, the development of the digital economy has driven the development of small and micro enterprises such as catering, and these enterprises Labor demand is closely related to minimum wage levels.

Tab 4-7 The regulatory role of digital economy development

VARIABLES	(1) cp	(2) cl	(3) wl
c.c_mw#c.c_dig	0.096*	-0.247***	0.569***
	(1.91)	(-2.85)	(5.41)
mw	-0.011***	0.030***	-0.022***
	(-2.79)	(2.72)	(-3.47)
pgdp	0.024***	-0.006	0.024***
	(6.32)	(-0.61)	(4.08)
ur	0.496***	0.389***	0.442***
	(22.12)	(4.62)	(9.47)
ind	0.013	0.046	-0.018
	(0.70)	(1.16)	(-0.72)
str	0.005*	0.001	-0.003
	(1.87)	(0.18)	(-0.91)
cap	0.245***	0.029	0.361***
	(2.77)	(0.18)	(2.62)
ep	-0.006	0.011	-0.009
	(-1.55)	(0.67)	(-1.36)
popu	0.021	-0.048*	0.061***
	(1.52)	(-1.89)	(2.92)
fdi	0.027	0.068	-0.019
	(0.96)	(1.48)	(-0.54)
fin	0.002*	-0.001	0.002
	(1.96)	(-0.36)	(1.26)
dig	0.053	0.101***	0.022
	(1.52)	(2.71)	(0.34)

Constant	-0.221*	0.728***	-0.579***
	(-1.71)	(2.96)	(-2.91)
Observations	1,925	1,925	1,925
R-squared	0.996	0.966	0.993

4.4.4 Analysis of the moderating effect of the proportion of poverty-stricken counties

The proportion of poverty-stricken counties in a region has a significant moderating effect on the impact of the minimum wage. The greater the proportion of poverty-stricken counties, the stronger the income distribution effect of the minimum wage. First, the increase in the minimum wage level promotes balanced development within cities and between urban and rural areas. The minimum wage system has enhanced the economic effect on poor areas and increased the income level of poor areas. Secondly, with the support of poverty alleviation policies, the population in poverty-stricken areas has moved the labor force in poverty-stricken areas to more advanced industries and industries through education poverty alleviation, employment poverty alleviation, and industrial poverty alleviation. The adjustment of the minimum wage standard will have an increased impact on the poor people, thereby increasing the It has improved the income level of the poor and narrowed the income equality. Thirdly, due to the slow development of enterprises in poverty-stricken areas and the weak industrial foundation, the increase in minimum wage standards has increased the costs of enterprises. Cost levels that do not match the development stage of enterprises will increase the risks of enterprise production and operation and inhibit the improvement of residents' income levels.

Tab 4-8 The regulating effect of the proportion of poverty-stricken counties

VARIABLES	(1) cp	(2) cp	(3) wl
-----------	-----------	-----------	-----------

c.c_mw#c.c_pcr	0.017*	0.017*	-0.042***
	(1.88)	(1.88)	(-3.31)
mw	-0.016***	-0.016***	-0.029***
	(-4.03)	(-4.03)	(-4.78)
pcr	0.006**	0.006**	0.025***
	(2.14)	(2.14)	(6.16)
pgdp	0.023***	0.023***	0.027***
	(5.99)	(5.99)	(4.36)
ur	0.486***	0.486***	0.436***
	(21.07)	(21.07)	(8.48)
ind	0.017	0.017	0.027
	(0.82)	(0.82)	(0.85)
str	0.005*	0.005*	0.004
	(1.77)	(1.77)	(0.76)
cap	0.238***	0.238***	0.312**
	(2.69)	(2.69)	(2.18)
ep	-0.007*	-0.007*	-0.014**
	(-1.84)	(-1.84)	(-2.46)
popu	0.024*	0.024*	0.077***
	(1.72)	(1.72)	(3.50)
fdi	0.022	0.022	-0.025
	(0.81)	(0.81)	(-0.70)
fin	0.002**	0.002**	0.003**
	(2.09)	(2.09)	(2.10)
dig	0.083***	0.083***	0.184***
	(3.68)	(3.68)	(5.01)
Constant	-0.204	-0.204	-0.739***
	(-1.55)	(-1.55)	(-3.72)
Observations	1,925	1,925	1,925
R-squared	0.996	0.996	0.992

Chapter 5 Conclusion and further research

5.1 Conclusion

This thesis explores the general impact of the minimum wage standard on common prosperity, income level and income gap by constructing a theoretical model and simulation analysis, and uses balanced panel data from 275 prefecture-level and above cities from 2013 to 2019 to empirically This paper examines the impact of minimum wage levels in various regions of China on common prosperity since the new era, and conducts research and analysis on the rationality of China's current minimum wage standards and the heterogeneity of their effects. The study found that the minimum wage standard needs to be within a reasonable range in order to fully play its role in promoting common prosperity. During the study period, the coordination between the minimum wage standard and the level of economic development was insufficient. The increase in the minimum wage inhibited the improvement of common prosperity and income levels, but narrowed the income gap, especially the urban-rural gap. Its negative effects will be adjusted with the reasonable adjustment of the minimum wage standard. And improve. The development of the digital economy and the upgrading of the industrial structure can adjust and improve the negative impact of the increase in the minimum wage standard on common prosperity, especially income levels, while poverty alleviation policies have positive significance in improving the income distribution and common prosperity of the minimum wage standard.

5.2 further research

This thesis mainly studies the impact of the minimum wage on common prosperity in Chinese cities from 2013 to 2019, providing new possible evidence for the implementation of the minimum wage policy and the promotion of China's common prosperity. Of course, this thesis also has some shortcomings and needs to be supplemented in the future.

On the one hand, the data in this thesis are 275 prefecture-level cities in China, but China has 333 prefecture-level administrative regions (as of 2019). Most of these prefectures and cities included are missing statistical data. It is hoped that they can be supplemented in future research. Complete relevant data to fully reflect the impact of China's minimum wage on common prosperity. On the other hand, this study only explores the impact and heterogeneous impact of the minimum wage on common prosperity, but there is less research on the nonlinear impact and whether there is a threshold effect. Since China's common prosperity policy has been proposed for a short period of time, among which Some of its characteristics have not emerged, and the nonlinear effects of its research need to be more valuable under the constant adjustment of common prosperity and minimum wage standards.

references

- [1] Acemoglu D., 1998, Why Do New Technologies Complement Skills? Directed Technical Change and Wage Inequality [J], *Quarterly Journal of Economics*, 113 (4), 1055~1089.
- [2] Bai X., Chatterjee A., Krishna K., Ma H., 2021, Trade and Minimum Wages in General Equilibrium: Theory and Evidence [J], *Journal of International Economics*, 133, 103535.
- [3] Bossler M., Gerner H. D., 2020, Employment Effects of the New German Minimum Wage: Evidence from Establishment-level Microdata [J], *Industrial and Labor Relations Review*, 73 (5), 1070~1094. [39] Deb P., Trivedi P. K., 2013, Finite Mixture for Panels with Fixed Effects [J], *Journal of Econometric Methods*, 2 (1), 35~51.
- [4] Dickens R., Machin S., Manning A., 1999, The Effects of Minimum Wages on Employment: Theory and Evidence from Britain [J], *Journal of Labor Economics*, 17 (1), 1~22.
- [5] Duan, Z., & Hao, F. (2019). Research on the income distribution effect of minimum wage policy on urban households. *Statistical Research*, (7), 65-76.
- [6] Flinn C. J., 2006, Minimum Wage Effects on Labor Market Outcomes under Search, Matching, and Endogenous Contact Rates [J], *Econometrica*, 74 (4), 1013~1062. [42] Katz L. F., Krueger A. B., 1992, The Effect of the Minimum Wage on the Fast-Food Industry [J], *Industrial and Labor Relations Review*, 46 (1), 6~21.
- [7] Liu, Y., Dong, X., & Dong, K. (2023). Pathway to prosperity? The impact of low-carbon energy transition on China's common prosperity. *Energy Economics*, 124, 106819.

- [8] Ma, S., Li, X., & Cai, D. (2017). Minimum wage and married women's labor participation. *Economic Research*, (6), 153-168.
- [9] Neumark D., Schweitzer M., Wascher W., 2004, The Effects of Minimum Wage Effects Throughout the Wage Distribution [J], *Journal of Human Resources*, 39 (2), 425~450.
- [10] Neumark D., Wascher W. L., 2007, Minimum Wages and Employment [J], *Foundations and Trends in Microeconomics*, 3 (1~2), 1~182.
- [11] Neumark D., Wascher W., 2008, Minimum Wages and Low-Wage Workers: How Well Does Reality Match the Rhetoric [J], *Minnesota Law Review*, 92, 1296.
- [12] Ni J., Wang G., Yao X., 2011, Impact of Minimum Wages on Employment: Evidence from China [J]. *Chinese Economy*, 44 (1), 18~38.
- [13] Sotomayor O. J., 2021, Can the Minimum Wage Reduce Poverty and Inequality in the Developing World? Evidence from Brazil [J], *World Development*, 138, 105182.
- Li, S., & Zhu, M. (2022). Promote the reform of the income distribution system and promote the realization of common prosperity. *Management World*, (1), 52-61+76+62.
- [14] Ye, L., Gindling, T.H., Li, S., & Xiong, L. (2015). Compliance with minimum wage policies by Chinese enterprises - an empirical study based on matching data of enterprises and employees in six provinces and cities in China. *Economic Research*, (6), 19-32.
- [15] Ye, W., & Jiang, J. (2020). The impact of China's minimum wage policy on the employment of low-income groups - an empirical study based on CGSS data. *Journal of Shanxi University of Finance and Economics*, (10), 14-26.
- [16] Zhang, S., & Jia, P. (2014). Income distribution effect of minimum wage adjustment.

Quantitative Economics and Technical Economics Research, (3), 3-19+37.