The Analysis on Minimum Wages and Migration Workers in China

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1. Introduction

It is well known that China has been a dual economy for a long time. Under such economic system, labour markets are segmented between rural and urban areas. However, with fast economic development and large flow of labour mobility, more and more rural migration workers work in urban labour market. In 2006, according to statistics from NBS, there were more than 130 million rural migration workers who work and live in urban areas at least 6 months. This challenges the traditional system of labour regulation that only took emphasis on urban labour forces.

Among means of labour market regulations, minimum wage is widely used in other economies while it has been introduced into China for a short history. In 1990s, China kicked off the practise of minimum wages. However, the minimum wage policy was not strictly implemented at that time, which to large extent related to the labour market situations. In the 1990s, the restructuring of urban economy and cyclical effects led to a serious dislocation in urban labour market. With shrinking SOEs, more and more urban workers enter private sectors that consist of a large share of informal work. Although entering informal sector partly reflected the labour market development, the level of protection for informal work is limited. When observing from aggregated data, it is easy to find that the labour force participation rates had been declining in the 1990s combing with increasing unemployment rates (Cai et al. 2005). As far as the enforcement is concerned, it was

difficult work for the regulators to implement minimum wages when labour market situation was so tough.

In addition, the rural surplus labour forces who moved out of agriculture and rural areas and worked in urban labour market also consisted pressure for minimum wage implementation. Rural migration workers dominantly worked in the informal sectors that are difficult to gauge their payment by the minimum wage standards.

Labour market situation has changed in recent years, which is evidenced by the coming Lewsian turning point. As the joint result of China's economic growth and demographic change, the country approaches a turning point, at which labour shortage and wage rise occur. As part of the process, the speed of labour market integration increases as well. Through integration into the global division of labour, China's labour-intensive manufacturing sector has boomed and world-wide employment opportunities have been seized. As a result, more than 100 million rural labourers have migrated to urban jobs, and laid-off and unemployed workers have been re-employed in an economy with high growth rates. With economic development, the pattern of production factors endowment in China is being restructured, implying the coming of a historical turning point.

When reaching the turning point, the employees have more bargaining power than before, which let it possible for migration workers to *vote with feet*. As response to the turning point, the employers have to care about labour protection otherwise they will lose the competition for workers. That is why we see wage rising and improvement for working conditions in recent years. To sustain regional economic growth, the local governments tend to compete for attracting migration workers by devoting to construction of a friendly environment for migrants, including strict implementation of the minimum wage policy.

In this report, we are going to review the minimum wage policies in China by looking though different sources of data. In chapter 2, a policy review is presented. The next chapter exploits city level data to look at minimum wage adjustment and policy changes. Chapter 4 takes

advantage of household data collected in urban labour market and analyze the implementation of minimum wage at micro level with particular focus on migration workers. The final chapter concludes some findings.

2. Overview of Minimum Wage Policy

2.1 China's Minimum Wage Policy

In China, Minimum wage (MW) refers to the lowest remuneration paid to employees by employers on condition that the employees have provided regular working within legislative working time or working time regulated by their labour contracts. Some items, like overtime pay, legal allowance and legal benefits, should be deducted and can not be counted as part of the wages when identifying MW.

2.1.1   Purposes of MW policy tool

The main purpose of implementing minimum wage system is to safeguard the workers' legal rights and interests to obtain payment for their work and guarantee the basic necessities of every worker and his family. Meanwhile, the Minimum Wage System is an important measure for government to regulate the employers' activities of wage payment and safeguard labours esp. low-income groups to obtain reasonable remuneration.

2.1.2   Scope of application

Minimum Wage System applies to all enterprises, community-run and non-enterprise units, private industries and individual business with employees in China and workers forming labour relations with. Besides, it also applies to state organs, institutional units and social community as well as employees forming labour relations with.

All employees who sign contracts with employers shall be protected by the minimum wage system on the premise that labours provide regular working within official working time or working time legally agreed by labour contracts. Workers, who are taking such vacations prescribed by the state, like paid vacation, home leave, wedding and funeral leave, maternity leave, birth-control operation leave and are participating the social activities according to laws in the official working hour, are considered to provide regular working.

Generally, there are no limits on age, gender, job or industry etc. for the application of MW system in China. Employers shall pay probationer no less than local MW rate. Migrant workers are in the protection list as well.

2.1.3   Type of MW Standard

There are two categories of MW rates in China after 2004, namely monthly MW standard and hourly MW standard. Monthly MW standards apply to full-time employees, whilst flexible employees (non-full time employees) conform to hourly MW rate particularly. Hereinto, non-full time employees refer to workers who are paid by hour and work no more than 4 hours per day and 24 hours per week accumulatively for a same employer.

2.2 Development of MW Policy

In 1993, former Ministry of Labour issued *Regulations on Minimum Wages in Enterprises* and began to build the Minimum Wage System in China. The State then established the basic legal position of the Minimum Wage System in the *Labour Law* which came into effect in July 1994.

Ten years after implementation of MW policy, changing situations, with the deepening of economic reforms and social development, called for revision of regulation on MW: (1) China's social security system was just at an early stage in 1993 and the reforms of housing system had

not been advanced across-the-aboard as well. Thus, social insurances and housing public fund paid by employees were not in the list of regulating factors. However, with the full-scale reforms on social security system and housing system, personal contribution had been a large portion of employees' wages and affected basic living levels of workers and their families. (2) Non-enterprise units were newly registered, which requested expanding the coverage of MW system. (3) Non-full-time employment became popular and rather a proportion of employees were paid by hour. (4) In 1993 regulation, the state didn't set up a unified regulation term of minimum wages. Therefore, the minimum wage standards had not been regulated in accordance with the change of some determinant factors within four or five years in some provinces, with the safeguard of low-income labours' interests and rights being affected.

In order to address the above problems, in March 2004, the Ministry of Labour and Social Security (MOLSS) revised and promulgated the *Regulations on Minimum Wages* to promote the overall implementation of the Minimum Wage System in China. In 2004 Regulation, personal contribution to social security and housing funds are additionally included as determinants of MW formation and adjustment, non-enterprise units are requested to follow MW policy, hourly MW is set up to protect irregular employees and local governments are asked to adjust MW standards at least once every two years.

Until the end of year 2004, all of the country's 31 provinces, autonomous regions and municipalities have built minimum wage system, promulgated and implemented monthly minimum wage standards within the region. Until the end of year 2006, all provinces (autonomous regions and municipalities), Tibet Autonomous Region excluded, have further promulgated and implemented hourly minimum wage standards. The average monthly MW standard in 1994 was less than 200 Yuan. While in 2006, the monthly Minimum Wage rates reached a concentrated range of 550 Yuan to 650 Yuan, with a highest of 780 Yuan in Guangdong Province and a lowest of 430 Yuan in Gansu

Province. For a majority of regions, the hourly MW is around 5 Yuan to 6 Yuan.

2.3 Determination of MW

2.3.1 Roles of central and local governments in determining MW

There is no national minimum wage standard in China. The stipulation and revision of the minimum wage standards shall be drawn out by the labour and social security authority of each province (autonomous region or municipality). The draft, including adjusting basis, adaptive range, adjusted rates and explanations, should be submitted to the national labour and social security authority (at present namely, the MOLSS) for reviewing.

The MOLSS may provide suggestions for amendment. The draft is characterized as being approved if there is no response after 14 days. Finally, the provincial government is given the authority to release the reviewed MW standards through local government communiqué and at least one region-wide newspaper. Employers are also required to publicize the latest MW rates within 10 days after the rates are issued.

Each province, autonomous region or municipality may set different minimum wage standards, with cities in the province selecting their own minimum wage standards based on their regional situations. Labour and social security authorities above the county level are responsible for supervising the implementation of such regulations within their administrative areas.

2.3.2 Criteria for MW adjustment

The adjustment of minimum wage standard shall take the living expenses of urban dwellers, social insurances paid by employees, housing public fund, average wage, unemployment rates and economic development levels into consideration. In Practice, some provinces deliberate on the overall average wage, price of commodities,

employee's support coefficient, income and expenditures of low-income groups, demand and supply of labours, labour productivity and related economic indicators one year or many years ago, carry on integrated scientific calculation, and give comprehensive consideration to such extra factors as comparative attractiveness of FDI, affordability of enterprises and so on, for the purpose of regulating the minimum wage standard.

Stipulation and regulation on the hourly minimum wage standard shall be based on the promulgated monthly minimum wage standard. Apart from an overall consideration on the basic old-age insurance premiums and basic medical insurance premiums paid by employers (for non-full-time workers, they should pay by themselves), special factors like the disparity of working stability, working conditions, working intensity and welfare between non-full-time labours and full-time employees should also be pondered.

2.3.3   Interval and timing of the MW adjustment

Seen from the adjustment results in all the 31 provinces, autonomous regions, and municipalities, the regulation of minimum wage standard amounted to 117 times from 1994 to March 2004, with the average regulation being about 3.8 times in every province (or autonomous region, municipality). Since 2004 the state set a unified requirement that the standard shall be regulated at least once in two years, thus the regulation frequency was accelerated obviously. From 2004 to 2006, the average regulation of every province amounted to 1.9 times.

2.3.4   Roles of trade unions and employers' organizations in MW determination process

Trade unions and employers' organizations are involved during the determination and implementation of MW in the following stages:

----The provincial labour and social security authority should negotiate with the equivalent regional union as well as the enterprise association or entrepreneur association before submitting the draft to the MOLSS.

---- The MOLSS shall take counsel with the All China Federation of Trade Unions (ACFTU) and China Enterprise Confederation（CEC）&China Enterprise Directors Association（CEDA）after receiving the draft from each province.

----All trade unions are entitled to supervise the implementation of the regulations on MW and require local authority to take actions once they find any employers having broken the regulations. Some local labour unions even offer consultancy for their members and take active part in the settlement of labour disputes on MW.

2.4 MW policy and other government's wage policy instruments

Besides the minimum wage system, there are various wage policies towards different organizations. For large-scale state-owned enterprises, the total wage payroll and the top managers' wages s are under the control of the central or local State Assert Administrative authorities. For most of the on-state-owned enterprise, the principle of wage determination is summarized as "*regulated by market mechanism, independently determined by individual enterprise, democratically involving employees, and supervised and guided by government*". At present, the Wage Guideline System, the System for Guidance Wage of Labour Market, and the Information Guide System of Labour Cost by Industry compose of the macro regulating system on wages and income distribution of the government in China.

2.4.1   Wage Guideline System

The target of implementation of wage guideline system is to guide enterprises to decide the annual wage increasing level rationally, and provide a basis for wage collective bargaining to make the wage rise

measure up to the requirements of economic and social development. Wage guideline level shall be issued by provincial governments, on the basis of local economic growth rates, changes of labour productivity and CPI of urban residents, giving overall consideration of the employment conditions, labour market prices, labour cost levels, international trade and so on.

Wage Guideline shall be issued by provincial governments before the end of March every year. Wage guideline normally includes a base line, a top line and a bottom line. Various enterprises shall compile or regulate annual budget of total wage payroll within 30 days after the promulgation of wage guideline by the government. They are expected to reasonably choose wage increase rates in accordance with their business performance, at a rate within the top line and the bottom line regulated by the wage guideline.

Since the implementation of wage guideline system, great achievements have been made and relevant government departments frequently check on and measure the progress toward wage macro-control goals by it. And some enterprises also use the wage guideline as a reference pole to self-check the wage level for or against rationality. But the wage guideline system hasn't played a prominent role, or demonstrated guiding and binding function. To enterprises which increased annual wage bill higher than top line, the government does not have powerful tools to restrain them, whereas some employers can not afford basic wage increase due to low profitability. Take year 2005 for example, throughout the country, nearly a quarter of regions' money wage rise has exceeded the margin controlled by the top lines of the local wage guidelines. Currently, the authorities are studying how to further detail the contents of the wage guideline, such like issuing wage guideline by industry and making it more effectively oriented.

2.4.2　System for Guidance Wage of Labour Market

The aim of building the system for guidance wage of labour market is that the government guides market mechanism in the enterprise internal wage pricing by offering price signals from labour market. Enterprises are expected to set or adjust the on-going wage rates and wage differentials among employees of various jobs/posts. The guidance wages also provide market reference as important basis for wage collective negotiations, guiding the supply and demand of labours to negotiate and stipulate wage level; therefore reducing blindness of both sellers and buyers of labour and facilitate successful bargains and efficiency in labour market.

The local labour and social security authority shall publicize guidance wages by post/job after some investigations, analysis and necessary regulations on the related data. Guidance wage of each post/job is divided into top figure, median and low figure. The top figure refers to an arithmetic mean of the top 5 percent data in the wage series of this post. The median refers to the value positioned in the middle of the wage series. The low figure refers to bottom 5 percent data in the wage series. Post/job classification shall abide by the state standard of Occupational Classification. Some cited have issued the guidance wages by educational, skills and working years.

Right now such problems as inadequate coverage and insufficient guidance effectiveness still exist in the system for guidance wage of labour market. For example, there are huge variance for the guidance wage of the same post between the top figure and the bottom figure. Employers, as well as employees, feel difficult to figure out which one to follow. And the number of the posts is still limited in many cities. The quality of the data is subject to be raised. Therefore, the authority plans to push this program further and deeper and applies it wider to more than 100 central cities. Meanwhile, further ameliorate the statistic methods to make the stipulation of guidance wage more scientific and the issuance of information more timely and accurately.

2.4.3   Information Guide System of Labour Cost by Industry

Apart from wage guideline and guidance wage, the State has enforced the construction of information guide system of labour cost by industry. The scope of *labour cost* is larger than *wage*, including all the expenditure paid by employers for employing labours, including total volume of wages, welfare expenditures, contribution of social insurance, training expenditure, housing expenditure, expenditure on occupational safety and health, and so on. The information offered by the government under the system includes definition of labour cost, development of the indicator system of labour cost, annual labour costs by industry, share of labour cost to the total cost by industry, proportion of labour cost to sales/ value-added, and so on. With the purpose of guiding enterprise to reasonably control labour cost and carrying on wage collective negotiation, China tries hard to construct information guide system of industry labour cost in all the central cities throughout the country.

2.4.4   Relations between MW policy and macro regulating system on wages

MW system protects all employees without differentiation and functions as a guarantee system to safeguard the bottom line of all salary men. Whilst above the MW level, through the three systems, namely, Wage Guideline System, System for Guidance Wage of Labour Market and Information Guide System of Labour Cost by industry, the state offers plentiful information and facilitates establishing efficient pricing mechanism of labour market. Under the macro regulating system, employees and employers negotiate and decide wage levels and wage increase rationally and conform to micro-performance and macro-economic development.

MW system is featured as government compulsoriness. In contrast, the state exerts influence on wage determination by macro regulating system under the precondition of respecting fundamental role of market in wage-fixing.

2.5 Existing problems with the current system

Though MW system functions well on safeguarding low-wage workers with improvement of regulations and raise of MW rates, the effectiveness is influenced to some extent due to following issues.

----Implementation of minimum wage is not ensured in some regions and enterprises. In order to win profits, some employers do not perform the minimum wage standards. Some enterprises make the minimum wage level shrunk or violate the provisions of minimum wage in disguised forms by prolonging working hours, raising working quota standards and so on.

----Labour inspection on minimum wage is weak, lack of sufficient staff team or measures to investigate and prosecute existing problems comprehensively and timely.

----The administration of minimum wage is imperfect. Although a drafted adjustment of minimum wages of each province shall be submitted to the administrative departments of the MOLSS for approval, actually, the MOLSS lacks in effective evaluation mechanism on regulation standards delivered.

2.6 Summary

In recent years, following the theme of "raise the income of low-income groups" put forward by the State Council, the administrative authorities keep developing the minimum wage system, and advocate continuous growth of MW standards, thus the MW system is approaching perfection and is more in accordance with the practical needs.

The Minimum Wage System is highly emphasized as a measure of improving the income of workers, enabling all workers to commonly share the interest of overall economic development and reducing the income disparity. As a result, the MW system exerts significant influences on improving domestic consumption demands, maintaining

social justice, and advocating economic development and social harmoniousness.

3. Basic Facts of Minimum Wage Changes

This chapter is to present major wage related trends with a focus on minimum wage trends by showing the data analysis. As we have already seen in the last chapter, China has implemented minimum wage policy since 1993. Basically, the minimum wage policy was carried out at city level. Thus, the unit of our analysis should also be city level where the minimum wage rate is determined. Given the uniqueness of city hierarchy in China, however, big cities play more active roles on implementation for the minimum wage policy, which also determines the data structure we use in this Chapter.

Minimum wage policies are only applicable in urban labour market instead of the rural areas. In China, both cities and towns are defined as urban areas whereas the towns seem rarely to be regulated by the policy. Even for those cities, they have played different roles. Basically, China's cities are categorized as four types of hierarchy, the largest metropolis that are central administered, vice-provincial level cities, prefecture level cities, and county level cities. A prefecture level city might administer several county level cities. Typically, a province defines its minimum wages by prefecture, so we can see variations of the levels of minimum wage across prefectures instead of those cities under prefecture.

For that reason, we collected minimum wage data for all the cities at prefecture level or with higher hierarchy. There were 286 cities that meet such a criterion in 2006. Due to significant urban reclassification a few years ago, total number of cities with prefecture level or above were not a constant but subject to some adjustment. In addition to the minimum wage, we have also collected indictors by city such as per capita GDP, consumer price index, average wage, etc. There is no single source of minimum wage information by year and by city although government takes the responsibility of determining the minimum wage.

Therefore, we collected the information from official websites of local governments. Other indicators by city were collected from *China's City Yearbook* published by National Bureau of Statistics every year.

In spite of that minimum wage was introduced into China as early as 1993, in the early years of introduction, we have a large fraction of cities with missing information on minimum wages because of either no access to the data or not application for minimum wages at all, which partly limits our analysis on the implementation and the trends of minimum wage policy.

3.1 Minimum Wage Trends

As mentioned, at the very beginning of minimum wage was introduced into China, only a few cities took it seriously. But the implementation was improved since then. In 1995, there were 130 cities that made use of the tool. By the end of the last century, nearly all the prefecture level cities have introduced the tool. By taking advantage of the city level data, we may describe the trends of minimum wage since the middle of 1990s.

Figure 1 present the nominal and real minimum wage rates. Since we do not have sufficient information on CPI by city and by year, we deflate the minimum wage rates by aggregated urban CPI. As shown in Figure 1, minimum wage rates increase substantially in terms of both nominal and real term. In 1995, there were 130 cities implementing minimum wages and the average level of minimum wages was 195 yuan per month. In 2006, the average level of minimum wages went up to 498 yuan per month.
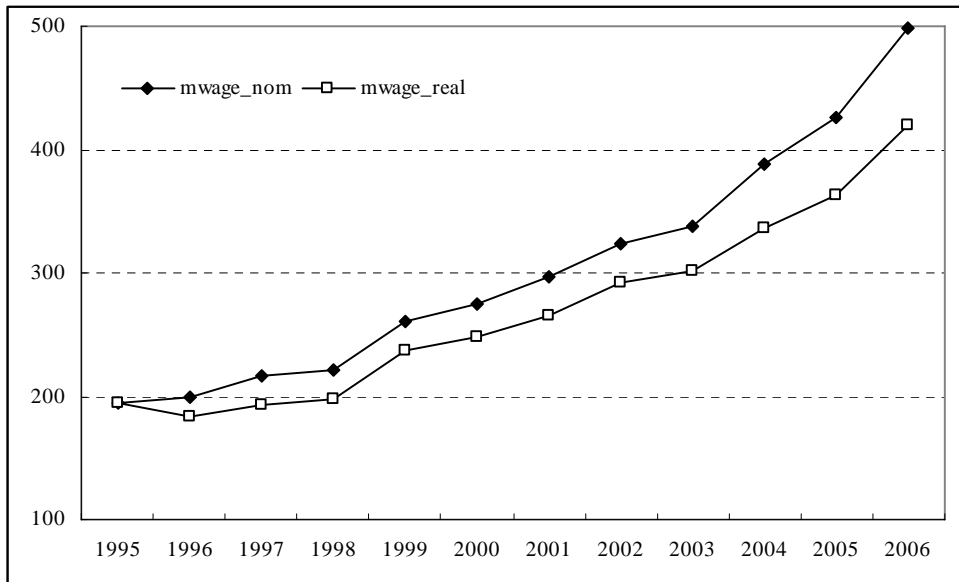
Figure 1 Average Level of Minimum Wages 1995-2006

Source: Minimum Wage Dataset by City, data collected by IPLE.

It is not surprising that the gap between real minimum wages and nominal minimum wages is increasing since we measure the real term in terms of constant price in 1978. In general, the adjustments on nominal minimum wage make up the increased price level with a few exceptions in the early stage of when the policies were introduced. The increase of minimum wages has been quite substantial in the last three years, which implies that the tool has been more valued than before to those local governments.

3.2   The Frequency and Magnitude of Minimum Wage Adjustment

As per the Minimum Wage Regulation enacted by the Ministry of Labor and Social Security in 2004, although the price change is one of the factors when city governments consider adjusting the minimum wages, the actual adjustment is implemented according to the nominal term. As Table 1 presents, there is a proportion of cities with adjustment every year. It is obvious that cities tend to increase the frequency of

adjustment in recent years. In particular, in 2006 nearly 90 percent of 286 cities had adjustment to their minimum wages, which reflects that labour market regulation start being valued by the local governments and minimum wage has been taken upon as one of the policy instruments.

Table 1 the Fraction of Cities with MW Adjustment by Year

Year	Number of cities	Number of cities with MW adjustment	Share of cities with MW adjustment
1998	209	31	14.8
1999	227	152	67.0
2000	255	79	31.0
2001	274	122	44.5
2002	286	167	58.4
2003	286	77	26.9
2004	286	186	65.0
2005	286	132	46.2
2006	286	253	88.5

Source: Minimum Wage Dataset by City, data collected by IPLE.

Another thing we care about the minimum wage adjustment is its absolute increase and growth rate. Due to limited information on CPI by city in the early years, we are not able to measure the increase of minimum wage at city level. Considering that price changes were not significant in the first few years of this century, the magnitude of minimum wage adjustment is quite close to its real terms. During the period of 1998 to 2006, there were four years with double digit growth rates. But considering that the minimum wages at early years were much lower, the increase in the last three years was more substantial than ever before. In 2006, average increase of minimum wages was 72.8 yuan per month, and the growth rate was far more than the economic growth rate in the same year. Therefore the absolute increase and growth rate of minimum wages in recent years could also serve as evidence that the tool is taking more active role now than before.

The significant increase of absolute minimum wags in recent years is also reactions of governments in response to the changing labour market situations in China. It is well known that a widespread labour shortage has taken place in 2003 ranged from coastal areas to Western and Central China, which indicates the coming Lewisian turning point of ending unlimited labour supply. This fact makes it possible for government to provide better protection for workers, including imposing minimum wages in a more substantial way.

Table 2 the Absolute Increase and Growth Rates of MW Adjustment

Year	Average Increase of MW	Standard Deviation	Average Growth Rate	Standard Deviation
1998	4.5	11.6	0.02	0.06
1999	37.6	31.7	0.17	0.14
2000	18.3	30.8	0.09	0.16
2001	22.5	35.3	0.09	0.17
2002	26.4	28.9	0.10	0.11
2003	13.9	25.7	0.04	0.08
2004	50.6	52.6	0.16	0.17
2005	37.5	48.8	0.11	0.16
2006	72.8	48.9	0.18	0.15

Source: Minimum Wage Dataset by City, data collected by IPLE.

3.3 Ratio of Minimum Wage to Average Wage

When discussing the level of minimum wage, the ratio of minimum wage with respect to average wage is always an issue to be concerned. Figure 2 displays the average ratio of minimum wage to average wage calculated by city level data. Two stylized facts are revealed in this figure. Firstly, the average wage increases quickly in the past decade. In 1995, the average wage of workers in 286 cities were 514 yuan per month while in 2006 the average wage increased up to 1750 yuan per month in nominal term and 1472 yuan per month in real term. The average annul growth rate of average wage is 11.8 percent in nominal

term and 10 percent in real term. Secondly, the ratio of minimum wage to average wage has been declining with a few years exception. In 1995 the ratio was 0.44 while dropped to 0.28 in 2006.
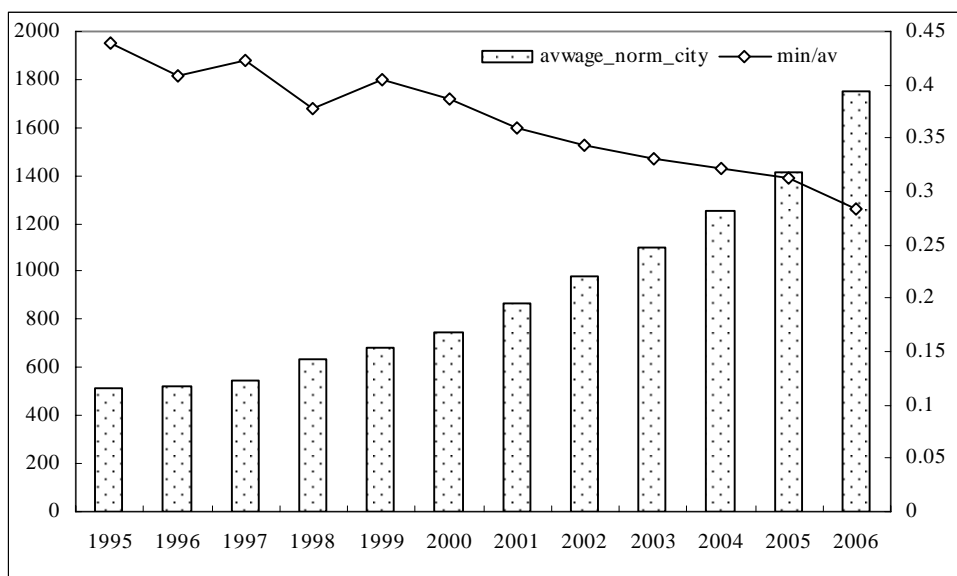

Figure 2 Ratio of Minimum Wage to Average Wage

Source: Minimum Wage Dataset by City, data collected by IPLE.

When the average wage grows so fast, it is not surprising that the ratio of minimum wage to average wage keeps declining because the increase of minimum wage can not, and is not necessarily to, catch up that of average wage. As described in the very first article of *Minimum Wage Regulations*, one of the purposes of the Regulations is to guarantee the workers' basic life. Therefore, the minimum wage consists of a large part of subsistence wage that is relatively constant with time. In contrast, the average wage is mostly determined by the labour market forces. With fast economic development and employment growth, it is reasonable to see a corresponding wage growth.

To understand the ratio correctly, one has to bear in mind that migration workers are not sufficiently included into the statistical system when estimating the average wage. To some large extent, the

information on average wage is based on reporting system of unit employment instead of labour market survey. However, the reporting system was formed in the era of planning economy and is not able to reflect the dynamic changes of labour market in terms the following regards. First, it relies heavily on those units that have already existed in the system and has weak ability to mirror the emerging sector, in particular, the cases in the informal sector. Second, with increasing size of rural to urban migration, the composition of urban labour market has a significant change. According to Cai, et al (2007), rural migration workers accounted for 46.7 percent of total employment in 2006 whereas the reporting system has weak ability to reflect the wages of this group of workers.

Therefore, it is good to believe that the average wage on the urban labour market was overestimated by excluding migration workers and informal employment.

3.4   The Determination of Minimum Wages

The Minimum Wage Regulation enacted by the Ministry of Labor and Social Security in 2004 explicitly elaborates the determinants of minimum wage when considering the level and adjustments for minimum wages. They include average wage of workers, average consumption, the level of economic development, and the level of unemployment rate, etc. However, few studies show that how the suggested factors are applied in practice. Since the city play fundamental role in determining the minimum wage, we exploit the city dataset so as to find the relationships between the level of minimum wages and its determinants mentioned above.

To get a complete and balance panel dataset at city level is not an easy thing. We have to live with the data with few indicators and unbalance property. Because of missing information in a few years, we are not able to employ a long time series since the tool was implemented.

We use the following regression model to reflect the relationships between minimum wage and its determinants,

$$\log MW_{i,t} = \alpha_0 + \beta_1 \log PGDP_{i,t} + \beta_2 \log AW_{i,t} + \beta_3 CPI_{i,t} + \beta_4 \log AC_{i,t} + u_i + \varepsilon_{i,t}$$

where the dependent variable is the logarithm of minimum wage of city i in year t, and the right hand side variables are the logarithm of per capita GDP of city i in year t, the logarithm of average wage of city i in year t, the CPI of city i in year t, and the logarithm of average consumption of city i in year t respectively. $\varepsilon_{i,t}$ is the error term randomly varies across cities and between years while whether we include the city specific term u_i depends on the nature of the data.

The regression results are presented in Table 3. The Hausman test statistics indicates that we prefer the regression model with inclusion of city specific term u_i, so fixed effect model is applied here.

Table 3 the Determination of Minimum Wages

	Fixed Effect Model		Random Effect Model	
	Coeff	t	Coeff	t
Log of Per Capita GDP	0.06	2.38	0.029	1.70
Log of Average Wage	0.43	12.61	0.44	14.67
Urban CPI	0.057	2.14	0.0075	2.98
Log of Average Consumption	0.19	4.69	0.19	5.34
Number of Obs	605		605	
Overall R^2	0.70		0.71	
Hausman test		9.28		
Prob> χ^2		0.05		

Source: Minimum Wage Dataset by City, data collected by IPLE.

We got several elasticities here. The elasticity of minimum wage with respect to average wage is 0.43, which means that one percent of increase of average wage may cause 0.43 percent of minimum wage increase. This seems a reasonable elasticity. The elasticity of minimum wage with respect to average consumption is 0.19, which is the second

important factor for minimum wage determination. The elasticity of minimum wage with respect to per capita GDP is relatively small 0.06 because most of the effects of economic development on minimum wage determination have already been captured by the other two variables, average wage and average consumption. It seems that the urban CPI is indeed a determinant of minimum wage although the magnitude of the coefficient is not substantial.

As evidenced by the regression results, local governments tend to act their behaviours of minimum wage determination in line with the *Regulations*. From this point of view, the enforcement of the Regulations in regard to minimum wage determination has been successful.

3.5 Summary of Basic Facts

Employing the data at city level, we describe the trend of minimum wages in the past decade. We may summarize the basic facts about the tool as the following.

First of all, the minimum wage policy has been substantially improved in terms of both coverage and the level. As we have already shown in previous sections of this report, all the cities have introduced minimum wage in this century. The level of minimum wage has been increasing steadily both at nominal price and in real term. To formalize the policy, the Ministry of Labor and Social Security enacted *The Minimum Wage Regulation* in 2004, which indicted that the tool of minimum wage became one of the important instruments that China regulates its labor market.

As far as time is concerned, most of cities in China have strengthened the implementation in recent years, which could be evidenced by more absolute increase of minimum wage rates, high growth rate, and high adjustment frequency, etc. Not only did those facts imply that China began to emphasize a more regulated labor market but was an indication of changing labor market situations characterized by a coming Lewisian turning point.

A declining ratio of minimum wage to average wage was also seen from the data analysis. However, given that fact of substantial increase of average wage in the same period, one can not draw a conclusion of whether China has inappropriate (in other word, low) level of minimum wage so far. Besides, current statistical system is not effectively to include the employment and wage information of migration workers and those urban workers working informally, which leads to an overestimate of the level of average wage on urban labor market. Based on those facts, one must be cautious of proposing a policy recommendation like further increasing minimum wage rates.

A regression on determination of minimum wage rates at the city level indicates that the factors that proposed by *the Minimum Wage Regulation* have been considered when the cities set their own rates.

4. Minimum Wage and Migration Workers: Data Analysis at Micro Level

In the last chapter, we reviewed the trend of minimum wage by analyzing data at city level. We take advantage of two features of the dataset. First, it is a relatively long time series that can reflect the changes of minimum wages at city level. Second, it is comprehensive data which covers most of cities in China that are units for minimum wage determination. However, we have to live with the limits of aggregated data in spite of its advantages. On the one hand, the aggregated data is weak to reflect the situations of individuals at micro level while the human behaviours are the interests we have here. On the other hand, exclusion of the cases of migration workers is far away from the facts on current urban labour market.

To make up the disadvantages of aggregated data, we exploit the data from two rounds of China Urban Labour Survey conducted by Institute of Population and Labour Economics in 2001 and 2005 respectively. Insofar as the data is able, we do some breakdown analysis on minimum wage coverage by demographic group for both local and migration workers. Besides, we compare migration workers with their

local counterparts in terms of minimum wage coverage and determination.

4.1 Data

China Urban Labour Survey investigated both the sampled households and individuals. It was done in Shanghai, Wuhan, Shenyang, Fuzhou, and Xian. The survey sampled urban households and migrants separately, but both samples are city representative.

In 2001, for urban household sample frame, proportional population sampling approach was used to sample an average of 15 households in each of 70 neighbourhood clusters, by making use of 2000 census to sample clusters and households. On average 10 households were interviewed in each community, with additional 5 for spares. For migrant sample frame, 2000 Census was first used to sample 60 communities. Once a neighbourhood was selected, the administrative records of the neighbourhood committee were used to constructing a sample frame of all registered migrants in the neighbourhood. In each city, 700 urban households and all the individuals in the households who are aged 16 and above were surveyed, and 600 individual migrants were surveyed

In 2005, a similar sampling strategy was applied, the sample size was a bit different. In each of 5 cities surveyed in CULS2, 500 urban households and all individuals in the household were investigated. For migrants, not only were the sampled individual investigated but their families. This change increase the individual sample size for migrants.

4.2 Minimum Wage: Hourly or Monthly?

If we look back the history of minimum wage policy in other economies, it has been implemented in the form of hourly wage from the very beginning. In fact, if there is a uniform distribution of the working hours, the difference between hourly and monthly minimum wage rates is not significant. However, if this is not the case,

implementing a monthly base minimum wages might cause problems regarding to several aspects.

As per the city dataset we analyzed, most of cities were using monthly based minimum wage rates. This probably has something to do with the duration of wage payment that is accustomed to in China. Although in the *Regulation*, the option of hourly minimum wage rate is given and the conversion of monthly wage into an hourly one is clarified, it is still easy to cause implementation issues for the following reasons.

First, when using monthly minimum wage, the monitor needs to supervise both working hours and monthly payments, which double the work of monitoring. Second, for workers, in particular, for those who have few years of schooling, translating the monthly payment into hourly wage rate is not always an easy thing. This might also increase the possibility of using the regulations for those employers who want to use it. Third, drawing a line of hourly wage rates between part time job and full time job, as many cities are doing, even complicates the issue of monitoring by adding a work of identifying the type of jobs.

Using the data of CULS, we clarify the issues in terms of the following regards. First of all, we show that the assumption of uniform distribution of is implausible. Actually, the working hours are significantly different between groups. Second of all, the micro evidence reveals that coverage rates differ between groups when using hourly rates or monthly rates. Finally, we may prove that implementation of hourly rate is particularly necessary for migration workers.

As presented in Figure 3, the working hours differ among groups in various dimensions. For each group of workers, the working hours per week were fewer in 2005 than in 2001. People who work in informal sectors work more intensively than those in formal sector. Also, it is clear that migration workers tend to work more intensively than their urban counterparts for both formal and informal sectors. Considering that migration workers work dominantly in informal sector (Du, et al., 2006), the working intensity of migrants is more severing. Thus, the implementation of minimum wages in monthly base might have different effects on different groups of workers.
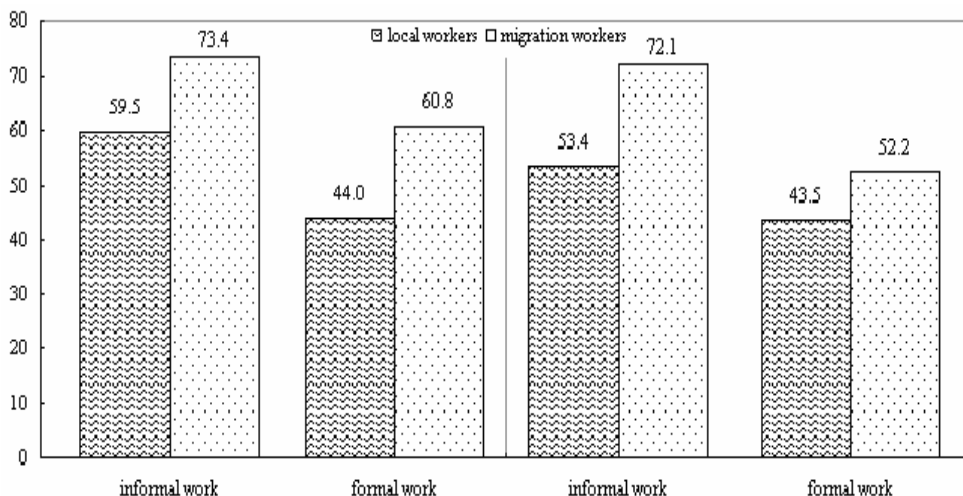
Figure 3 Working Hours per Week: Migrants versus Local Workers

Note: the left panel was calculated from CULS2 and the right panel was from CULS2.

To see the coverage of minimum wage by hourly and monthly rates, we do breakdown analysis for both migration workers and local workers. Table 4 displays the results. A couple of features of the results are worth noting here. First, coverage rates based on monthly rates does not differ significantly between migration workers and local workers. However, there exists a significant disparity of coverage between those two groups if measured by hourly rates[1]. For example, when measured by hourly rate, the coverage rate in CULS1 is about 48 percent for migration workers while the number is 79 percent for local workers. It makes big difference.

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[1] In fact, there was no hourly minimum wage rate in 2001. The criteria of hourly rates are counterfactual ones that were calculated based on monthly rates in 2001 and the monthly rates and the hourly rates in 2005. Besides, the hourly rates in 2005 were not equivalent to the monthly ones since the hourly rates were set for those who had part time jobs. But the point here is to tell that using hourly criteria makes difference for different groups of workers. Therefore, the accuracy of hourly wage rates is not of importance.

Table 4 Coverage of Minimum Wage: Migrants versus Local Workers

	Migration Workers				Local Workers			
	Average wage	above MW	Hourly Wage	above MW	Average wage	above MW	Hourly Wage	above MW
CULS1								
Male	1007	89.9	3.71	52.2	1072	93.9	5.89	82.9
Female	775	86.8	2.71	40.5	815	88.1	4.64	72.6
All	921	88.8	3.34	47.8	963	91.5	5.36	78.5
CULS2								
Male	1140	88.6	4.36	26.3	1282	88.9	6.95	52.0
Female	879	79.1	3.25	14.4	963	80.0	5.40	34.9
All	1022	84.4	3.87	21.1	1144	85.0	6.28	44.6

Source: Authors' calculation.

Second, if we look at the "working hour effects" on gender, it also tells the increased disparities of coverage rate between male and female workers when measured by different rates. For instance, according to monthly rate, the difference of coverage rate between male and female worker was about 9 percent in 2005, but it increased up to 17 percent when measuring by hourly rates. For this reason, changing the criteria into unitary hourly rate will be helpful to fight possible discrimination against female workers.

4.3 Coverage of Minimum Wage by Education

To see the impact of minimum wage regulation on workers with different level of human capital, we identify the profile of workers who are paid above the minimum wage by years of schooling. Results of this table seem to be surprising. When controlled for education, migration workers are not inferior to local workers in terms of monthly rate in each group although the disparities of coverage rate measured by hourly rate still exist. Several reasons cause such outcomes.

Table 5 Coverage of Minimum Wage by Education

	Migration Workers				Local Workers			
	Average wage	above MW	Average hourly wage	above MW	Average wage	Ratio above MW	Average hourly wage	above MW
CULS1								
Primary	864	86.0	2.99	40.4	684	79.2	3.11	48.4
JHS	908	88.5	3.21	47.1	763	85.5	4.01	64.3
SHS	1017	93.2	4.05	59.0	882	91.9	4.79	77.8
College	1370	96.3	6.81	81.5	1209	96.9	7.06	92.8
CULS2								
Primary	801	72.9	2.78	11.8	714	53.2	3.56	22.1
JHS	911	80.6	3.31	16.2	853	74.0	4.40	30.0
SHS	1195	90.3	4.74	30.4	1053	86.4	5.71	39.0
College	1744	91.7	8.83	63.9	1596	95.3	9.18	69.3

Source: Authors' calculation.

First of all, income composition of migration workers differs from their urban counterparts. When we analyze minimum wage, we only concern about the wage paid for the normal working time. For that reason, other sources of income from employers are not taken into account. However, income composition for local workers is much more complicated than migration workers. For example, in addition to wages we have already listed in the table, in 2005 bonus, in kind, and annual lump sum payment were 96 yuan per month for local workers while the number was only 30 yuan per month for migration workers. Besides, the benefits from employers, like housing subsidy, social securities, are higher for local workers than for migration workers (Du et al, 2006).

Second of all, migration workers are mainly distributed with educational attainment of junior high school or below while most local workers have senior high school education or more, see figure 4.1 and figure 4.2. Since more local workers concentrated in high paid jobs, it is not surpassing that their average wages are higher even though they are inferior in each sub-group. The result implies that enforcement of minimum wage regulation is not simply an issue of labour market

intervention. The coverage for migration workers could be increased through improving the equity of education attainment.
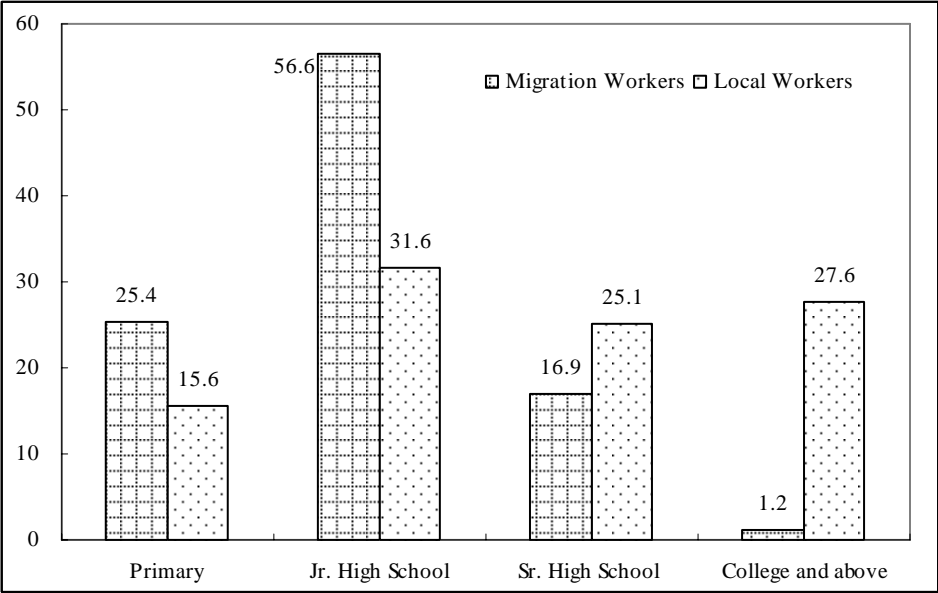

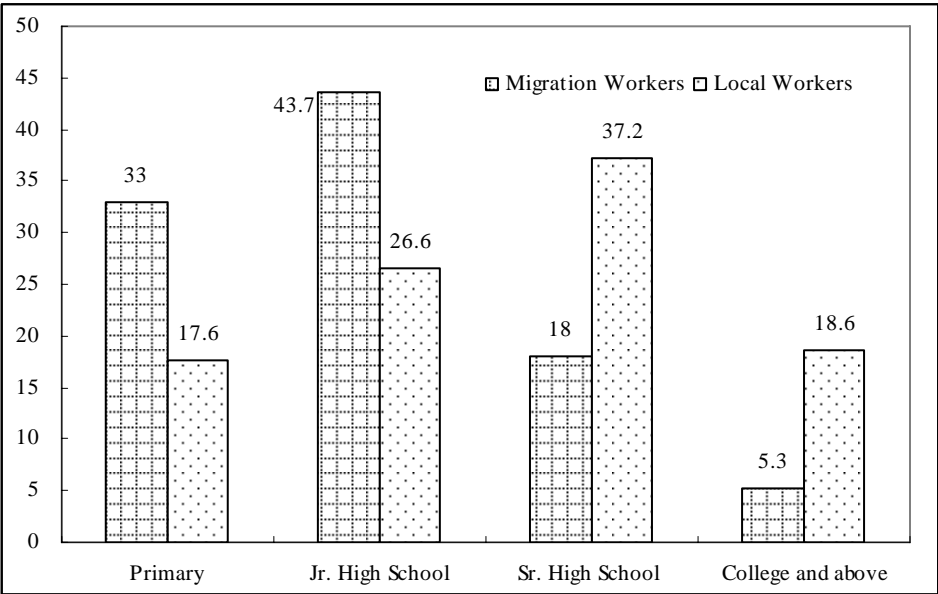**Figure 4.1 Distribution of Education in CULS1: Migration Workers vs. Local Workers**

Figure 4.2 Distribution of Education in CULS2: Migration Workers vs. Local Workers
Source: Authors' calculation.

Finally, one must bear in mind that observed wages for migration workers are selective given the labour mobility between the rural and the urban areas. If a migration worker feels failure in urban labour market, his (her) next choice would be back to the rural or moving to the other city. Therefore, the selected sample might have up-biased wages for whole migrants.

4.4   Coverage of Minimum Wage by Age Group

Age profile is another useful perspective for us to observe who are paid below the minimum wage, which lets the enforcement of the regulation be more relevant to corresponding group. Unlike the breakdown analysis by education, each group of migrants is more disadvantageous in terms of both average wage rates and coverage rate than local workers.

The life cycle pattern of coverage rates is similar between migration workers and local workers, which displays an invert-U shaped relationship between age and the coverage rates. Under such a relationship, both young workers and old workers are more possible to be paid below the minimum wage.

As workers without labour market experience, not only do young workers have problems with finding jobs, but also they are more disadvantageous for wage negotiation. Therefore, we may infer that young workers who are the new entrants to labour market are the group of workers the regulation should pay special attention to. In addition, workers whose ages are close to retirement are another group of people who are possible to be paid under the minimum wages and ought to be taken care of by the policy.

Table 6 Coverage of Minimum Wage by Age Group

	Migration Workers				Local Workers			
	Average wage	above MW	Average hourly wage	above MW	Average wage	Ratio above MW	Average hourly wage	above MW
CULS1								
16~20	538	78.1	2.00	23.9	668	92.9	3.47	61.9
21~30	909	90.4	3.38	52.0	1059	97.7	5.71	87.8
31~40	1044	91.1	3.71	51.0	1006	93.7	5.45	80.9
41~50	1009	89.3	3.44	52.7	888	89.9	4.85	75.0
50+	971	81.9	3.79	40.3	980	85.2	6.04	74.3
CULS2								
16~20	674	68.9	2.76	10.4	901	88.9	4.97	31.6
21~30	1089	86.0	4.38	25.8	1303	94.4	7.11	53.5
31~40	1030	83.2	3.76	21.2	1099	86.1	5.93	40.4
41~50	908	80.3	3.36	16.6	1070	80.1	5.81	40.4
50+	696	61.0	2.52	8.5	1240	85.1	7.15	52.6

Source: Authors' calculation.

4.5   Determination of Coverage: Micro Analysis

In previous sections of this chapter, we have already touched the issue of coverage rates for minimum wage by describing the facts for groups of people with specific characteristics. To further explicate the issue and confirm our existing findings, we do a quantitative analysis including the factors we mentioned previously. Table 7-1 and table 7-2 present Probits of paid above the minimum wage or not according to monthly rate and hourly rate respectively.

Table 7-1 Who Are not Covered by the Monthly Minimum Wage?

Dependent variable: 1=paid above the MW	CULS1		CULS2	
	Marginal Probability	Z value	Marginal Probability	Z value
Age	.006	4.03	.010	4.18
Age Square	-.0001	5.44	-.0001	5.38
Years of Schooling	.0099	10.59	0.022	14.33
Gender (1= male)	.052	7.48	0.092	10.50
Self-employment (1=yes)	.019	2.41	.019	1.92
Migration (1=yes)	-.0051	0.54	.0062	0.53
City dummies	Yes		Yes	
Number of Observations	6368		7306	
Pseudo R^2	0.11		0.096	

Table 7-2 Who Are not Covered by the Hourly Minimum Wage?

	CULS1		CULS2	
	Marginal Probability	Z value	Marginal Probability	Z value
Age	.023	7.12	.016	4.32
Age Square	-.00029	7.25	-.0002	4.36
Years of Schooling	.038	20.10	.047	21.62
Gender (1= male)	.13	9.83	.15	13.18
Self-employment (1=yes)	.014	0.93	-.034	2.54
Migration (1=yes)	-.15	8.37	-.093	6.17
City dummies	Yes		Yes	
Number of Observations	6368		7306	
Pseudo R^2	0.18		0.18	

Source: Authors' calculation.

The regression models include the following independent variables. Age and its square term are to capture the effects of labour market experience and its nonlinearity. As we may see, those two variables are statistically significant for both sub-samples in both years, which mean that the young workers and the old workers are more possible to be paid below minimum wage rate.

The increased returns to education over time are evidenced by the marginal probability of additional year of schooling on coverage is increased in CULS2, for instance, for migrants one more year of schooling increased the coverage by one percent of probability in 2001 while the number increased up to 3.8 percent in 2005. It seems that local workers enjoy higher returns to education than migration workers do. For both years, local workers have higher marginal probability with respect to years of schooling.

Even controlled for other demographic variables, female workers tend to be more disadvantageous in terms of minimum wage coverage. The gender disparities within local workers are even more serious than those within migration workers and increase over time. This implies that fighting discrimination against woman is a more and more important work for labour market regulation in China.

As we have already addressed in previous description, the disadvantage for migration workers is not obvious if looking at the case in monthly rate. For that reason, the migration dummy is not statistically significant in the first two regressions. However, when we measure the wage by hourly rates, we find that the migration variable is significantly negative for both samples. This result confirms our previous recommendation that minimum wage should be implemented in hourly term not monthly term.

5. Conclusion

5.1   Since the Minimum Wage policy was introduced in 1993, China has made a big progress on the implementation of the policy in terms of both coverage and the level. The data indicated that most of cities have been covered by the policies. In recent years, most of cities increased their minimum wages, which could be regarded as the effects of implementation the Regulation of Minimum Wage enacted in 2004.

5.2   Minimum wage rates kept increasing for both nominal terms and real terms. Although the ratio of minimum wage to average wage has been declining, it is not good to say China has an inadequate level of minimum wage because the average wage does not include enough information on migration workers who are taken as disadvantageous group in urban labour market.

5.3   The analysis on individuals shows that current tool that relies on monthly wage rate is not effective. It increased the administration costs because the monitor needs to supervise both working hours and monthly payments, which double the work of monitoring. Since the migration workers tend to work more intensively implementation of hourly rate is particularly necessary for them.

5.4   Migration workers ought to be the focus group of workers for minimum wage implementation. To achieve the similar level of living standard, migrants have to devote more efforts on labour market.

5.5   Considering that minimum wage is one of the instrument protecting workers, it is good to coordinate with some other policy tools. For that purpose, the level of minimum wage has to be formed in a more explicit way although the results on minimum wage determination indicated that to some extent the rates are determined in line with the Regulation.