



# BALANCING WORKERS' PROTECTION AND LABOR MARKET FLEXIBILITY IN CHINA

World Bank Group  
Social Protection and Jobs



# **BALANCING WORKERS' PROTECTION AND LABOR MARKET FLEXIBILITY IN CHINA**



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# Acknowledgements

This edited volume is a product of the World Bank's Social Protection and Jobs Global Practice. It was edited by Achim Schmitten and Dewen Wang. Josefina Posadas acted as de facto co-editor during the final phase of the project. Overall guidance and support was provided by Bert Hofman, Jehan Arulpragasam, Philip O'Keefe, and Elena Glinskaya.

The editors thank peer reviewers Roberta Gatti, Ugo Gentilini, Robert Palacios, Hoon Sahib Soh, Yukon Wang, and an anonymous reviewer for helpful comments and suggestions during different phases of this project. They also thank John Giles, Yang Huang, Maheshwor Shreshta, and Jin Song as well as Anna Auto, Eva Kloeve, and Anders Zeijlon from the Nordic Trust Fund's secretariat for stimulating conversations. Corinne (Korky) Bernaldez, Tianxiu Kang, Xuan Peng, Maya Razat, and Tao Su provided excellent administrative support. Special thanks are due to counterparts from the Institute of Labor and Wage Studies of the Ministry of Human Resources and Social Security who provided valuable suggestions and feedback during a study tour to New York City and Washington, DC, and during a workshop and meetings in Beijing.

The authors of different chapters thank the following individuals and institutions: Chapter 3 – Yayun Pan for inputs. 0 – Hoon Sahib Soh and Wendy Cunningham for comments and suggestions; Terry Sicular for sharing data; Shanshan Wu for research assistance; and Elisabeth Schwinn for copy-editing. Chapter 3 – Chenggang Zhang, Cheng Chang, Xiaofei Chen, Sylvie Démurger, Carl Lin, Peng Jia, Maria-Antonia Remenyi, Michael Stops, Dewen Wang, and Meiyang Wang for inputs; Chen Cheng for research assistance; and Elisabeth Schwinn for copy-editing. Chapter 4 – Zongwan Hu for comments and suggestions; and Marc DeFrancis for copy-editing. 0 – Josefina Posadas for comments and suggestions; Xichen Li, Carl Lin, Chunyang Pan, and Jin Song for sharing data; and Linghui (Jude) Zhu for research assistance. Chapter 6 – T.H. Gindling, Björn Gustafsson, Jikun Huang, Truman Packard, Yang Song, Xiaobing Wang, Zhong Zhao, and participants at various conferences and seminars for comments and suggestions; and the Bucknell Institute for Public Policy and the China Institute for Income Distribution at Beijing Normal University for research support to Carl Lin. Chapter 7– Junior Ojeda for research assistance; and Elisabeth Schwinn for copy-editing. Chapter 8– Yang

Huang for comments and suggestions; and Marc DeFrancis for copy-editing. Chapter 9– Yang Huang for comments and suggestions and Bong Sun (Regina) Seo for research assistance.

Financial support from the Nordic Trust Fund established with agreed contributions from Denmark, Finland, Germany, Iceland, Norway, and Sweden as well as from the World Bank's Research Support Budget is gratefully acknowledged. Findings, interpretations and conclusions expressed in this edited volume are entirely those of the authors of the different chapters and do not necessarily represent the views of the Nordic Trust Fund, the World Bank, its affiliated organizations, its Executive Directors or the Governments these represent.

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# Abbreviations

|        |   |
|--------|---|
| ACFIC  | All-China Federation of Industry and Commerce                           |
| ASEAN  | Association of Southeast Asian Nations                                  |
| CASS   | Chinese Academy of Social Sciences                                      |
| CEC    | China Enterprise Confederation / China Enterprise Directors Association |
| CEES   | China Employer-Employee Survey  |
| CHIP   | China Household Income Project  |
| CHNS   | China Health and Nutrition Survey                                       |
| CIA    | Central Intelligence Agency   |
| CIID   | China Institute for Income Distribution                                 |
| CPI    | Consumer price index  |
| CULS   | China Urban Labor Survey  |
| EPL    | Employment protection legislation                                       |
| FTC    | Fixed term contract   |
| GBHRSS | Guangdong Bureau of Human Resources and Social Security                 |
| GEC    | Guangdong Enterprise Confederation                                      |
| GFIC   | Guangdong Federation of Industry and Commerce                           |
| GFTU   | Guangdong Federation of Trade Unions                                    |
| ILO    | International Labour Organization                                       |
| IT     | Information technology  |
| LBHRSS | Local bureau of human resources and social security                     |
| LEC    | Local enterprise confederation  |
| LFIC   | Local federation of industry and commerce                               |
| LFTU   | Local federation of trade unions  |
| MBA    | Master of Business Administration                                       |
| MHRSS  | Ministry of Human Resources and Social Security                         |
| NBS    | National Bureau of Statistics   |
| OECD   | Organisation for Economic Co-operation and Development                  |
| OLS    | Ordinary least squares  |
| PPP    | Purchasing power parity   |
| PPS    | Probability proportional to size  |
| RUMiC  | Rural-Urban Migration in China  |
| SBHRSS | Shanghai Bureau of Human Resources and Social Security                  |
| SEC    | Shanghai Enterprise Confederation                                       |

|      |  |
|------|--|
| SFIC | Shanghai Federation of Industry and Commerce |
| SFTU | Shanghai Federation of Trade Unions          |
| SOE  | State-owned enterprise                       |
| TWA  | Temporary work agency                        |
| UNDP | United Nations Development Programme         |
| UHS  | Urban Household Survey                       |
| WTO  | World Trade Organization                     |

# Background, Existing Evidence, and Overview

Josefina Posadas and Achim Schmillen

## 1. Introduction

Across the world, governments use minimum wages, employment protection legislation, and other labor regulations that define the legal boundaries of employment to manage potential labor market imperfections. These imperfections include information asymmetry, uneven market power between employers and employees, discrimination by employers, and incomplete markets for unemployment insurance and insurance for other work-related risks. Labor regulations are also widely used to further other objectives, most notably the distribution of wealth among the population.

Labor regulations can have a wide range of impacts on the employment and earnings of workers and the productivity and profits of firms. While these regulations have become common currency in most countries, many economists believe that over-regulation of labor markets can have detrimental consequences. In fact, until relatively recently, most economists were skeptical that labor regulations could have any positive impacts on either workers or firms. In recent years, a more nuanced view has emerged that argues that both over-regulation and under-regulation can constrain job creation and have other negative impacts, including exacerbating inequalities in the labor market. The proponents of this view assert that over-regulation can reduce labor market flexibility, while under-regulation can leave workers unprotected by not correcting for labor market imperfections.

In practice, striking the right balance between workers' protection and market flexibility is not easy. From a political economy point of view, different groups with special interests lobby vigorously either for further protection or further flexibility. As a result, minimum wages and employment protection legislation are often highly politicized issues. However, even from a technical point of view, it is not easy to draw unequivocal conclusions about the impact of labor regulations on employment levels, earnings, job turnover,

productivity, and other outcomes because of the ambiguity of theoretical models and the scarcity of empirical evidence on the causal impacts of labor regulations. Empirical evidence is even scarcer for developing and emerging economies than for developed countries.

Hence, there continue to be two strands of thinking that challenge each other and that are at the center of ferocious debates. As described in Freeman (1993) and Betcherman (2015), the “institutionalism” strand argues that labor regulations can reduce inequality and cut transaction costs, leading to increases in productivity, while the “distortionism” strand argues that labor regulations impede economic efficiency and can have perverse effects. As is often the case with such opposing views, these two strands share a common ground in terms of theoretical models and empirical strategies. This makes it difficult for policymakers to strike the right balance between workers’ protection and labor market flexibility. A lack of appropriate data and their unfamiliarity with the detailed institutional characteristics of the labor regulations frequently make their task even more daunting.

This edited volume aims to contribute to closing this knowledge gap by using a variety of data sources and methodologies to examine the detailed institutional evolution of labor regulations in China, the world’s largest emerging economy,<sup>1</sup> as well as any changes that have occurred in key labor market outcomes during this evolution. For this purpose, the edited volume reviews China’s key labor market trends, the relevant institutional environment, and existing literature. In addition, it uses both case studies and spatial econometrics techniques to gain a better understanding of how China’s minimum wage rates are set and implemented and also analyzes the impacts of these minimum wages on poverty, one of the most important outcome variables. In addition, it investigates the strictness of China’s employment protection legislation from both a legal and an economic perspective and asks if the introduction of the Labor Contract law in 2008 led to a widening of the earnings gap between covered and uncovered workers. Finally, it sketches possible ways forward for China’s labor regulations against the backdrop of the changing nature of work.

The analyses of this edited volume unfold against a backdrop in which China’s labor markets are changing precipitously, both in response to global trends as well as domestic policies. China continues to move forward with its structural change, and the enormous transformations that began with its opening-up and transition to a market-oriented economy in the late 1970s continue to deepen. Today, this structural change is no longer just about the expansion of the manufacturing sector, openness to trade, and sustained migration from rural to urban areas. It is also about automation, artificial intelligence, Chinese research and development and innovative patents, and the 2013 Belt and Road Initiative, in which China is spending roughly

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<sup>1</sup> According to purchasing power parity exchange rates.

US\$150 billion a year to underwrite infrastructure investment in 68 countries along the old Silk Road linking it with Europe. All of these important new factors influence China's labor market and its firm's demand for workers with various skills.

This Fourth Industrial Revolution (4.0IR) will make more and different demands on the workforce, and labor market regulations will influence how quickly some of these demands are met.<sup>2</sup> Within the new growth paradigm, employers are going to need non-routine, high-level cognitive and interpersonal skills from both new entrants to the labor market and current workers, whose working lives will need to be longer. Because human capital investments for current and future workers will need to happen in the workplace, labor market regulations will have to require workers to remain with the employers who have incentives invested in their training for a certain minimum period of time so the firms can recoup their investment. It will also mean developing new types of labor contracts that include training and work agreements. At the same time, it will be critical to allow—and incentivize—workers to move between economic industries, geographic locations, and firms to maximize allocative efficiency gains and reduce skills mismatches. Hence, labor market regulation will need to strike the right balance between giving employers incentives to invest in human capital on the job and giving workers the right to move between jobs.

From the policy side, labor policies that were introduced under the Twelfth Five-Year Plan (2011 to 2015) and the Thirteenth Five-Year Plan (2016 to 2020) will have significant consequences as well. Important completed or planned reforms include not only changes in labor regulations but also the further expansions of active labor market policies. In Chapter 22 of the the Thirteenth Five-Year Plan, *Develop China into a Manufacturing Powerhouse*, the Government of China favors helping businesses to reduce their labor costs by setting the most appropriate minimum wage levels. And in Chapter 63, *Bridge the Income Gap*, the government acknowledges the need to improve the mechanism for increasing minimum wages. With these policy directions, the Thirteenth Five-Year Plan is endorsing a balanced approach that takes into consideration the needs of employers as well as the rights of workers. In Chapter 62, *Give High Priority to Employment*, the government advocates deeper reforms and more enforcement of the country's employment protection legislation, including supporting flexible employment, the continued improvement of working conditions, the regulation of labor employment systems, and the prohibition of all forms of employment discrimination. The government is very much aware of the need to improve the coordination mechanism for labor relations, to strengthen

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<sup>2</sup> The analytic underpinnings of these policy recommendations can be found in the World Bank's flagship report on the Chinese economy, *Innovative China: New Drivers of Growth* (World Bank, forthcoming).

labor protection inspection and dispute mediation and arbitration, and to protect the legitimate rights and interests of employees.

In this context, it is critically important to monitor how various labor market outcomes are responding to the changing environment and policy changes, even if it is impossible to fully disentangle them in many instances, to identify winners and losers and formulate appropriate policies. As China adjusts to a “new normal” and embraces the reforms needed to succeed in the era of the Fourth Industrial Revolution, balancing workers’ protection and labor market flexibility will be more important than ever.

The rest of this chapter is structured as follows. Section 2 defines minimum wages and employment protection legislation as the most relevant labor regulations in China and provides a conceptual framework for striking the right balance between workers’ protection and labor market flexibility. This is followed in Section 3 by a brief description of the existing evidence on the impact of labor regulations on labor market outcomes, both internationally and in China. Section 4 presents an overview of this edited volume, and Section 5 summarizes the main findings and their policy implications.

## **2. Background**

### **1.1. Definitions**

Labor regulations define the legal boundaries of employment.<sup>3</sup> They establish the minimum set of work attributes and benefits to which all workers are entitled such as working hours, working conditions, and benefits. The two most important and prominent types of labor regulations are minimum wages and employment protection legislation. Minimum wages are defined by the International Labour Organization (ILO, 2015) as the minimum amount of remuneration that an employer is required to pay wage earners for the work performed during a given period, which cannot be reduced by collective agreement or an individual contract. According to ILO (2015), the purpose of minimum wages is to protect workers against receiving unduly low pay. In addition, minimum wages are meant to ensure a just and equitable share of the fruits of progress to all and a minimum living wage to all who are employed and in need of such protection. Minimum wages can also be used to overcome poverty and reduce inequality, including inequities between men and women. ILO (2015) also specifies that minimum wage systems should be defined and designed in such a way as to supplement and reinforce other labor policies.

OECD (2013) defines employment protection legislation as the rules

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<sup>3</sup> The definitions in this section are largely based on OECD (2013), World Bank (2014), Betcherman (2015), and ILO (2015).



governing the hiring and firing of workers. As detailed in Betcherman (2015), employment protection legislation shapes the form of labor contracts, including all of their characteristics. Most importantly, it determines the length and type of contracts – such as open-ended, fixed-term, part-time, or apprenticeship contracts. In addition, rules governing the termination of workers regulate the ending of contracts including the causes of termination (for instance, voluntary versus involuntary and justified versus unfair), end-of-service compensation (for instance, severance pay), and procedures (for instance, third-party notification or approval, advance notice, and vesting periods).

Other forms of labor regulations also exist, such as regulations governing the movement of people or provisions or the employment of specific groups of workers such as women and young workers. Other common labor regulations cover issues such as maternity leave, the need for childcare facilities, and lists of occupations or forms of work that are forbidden to women. These policies aim to facilitate the participation of more vulnerable population groups and to protect them once they are employed. In addition, antidiscrimination regulations define and prohibit socially unacceptable differences in the treatment of workers, with the goal of reducing inequality and enhancing social cohesion and fairness in the labor market.

As detailed in World Bank (2014), other labor-related policies include labor interventions and labor institutions. Like labor regulations, labor interventions are implemented by the government to compensate for market shortcomings, such as the inability of private financial markets to insure the risk of unemployment. However, in contrast to labor regulations, the costs of labor interventions are borne by all taxpayers whether they participate in the labor market or not. Labor interventions include both “active” labor market programs like training and job search assistance and “passive” unemployment benefits and other forms of social insurance.

According to World Bank (2014), labor institutions are the condoned structures, norms, and agreed procedures by which interested parties exert their influence and make and carry out decisions that shape labor regulations and interventions.<sup>4</sup> The most prominent example is the space afforded in many countries for collective bargaining to set terms of employment and working conditions. However, without in any way denying their importance, this volume does not discuss labor regulations other than minimum wages and employment protection legislation, labor policies, institutions, or interventions, or the broader social protection and education system in detail, but only in relation to how they interact with minimum wages and employment protection legislation.

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<sup>4</sup> This definition is also confirmed in Kuddo et al (2015), which summarized the shared vision of the ILO and the World Bank Group to promote policies that encourage job creation and protect workers.

## 1.2. Conceptual Framework

Labor regulations provoke heated debate. Their proponents (or “institutionalists” according to Freeman, 1993 and Betcherman, 2015) argue that they protect vulnerable workers from different dimensions and degrees of possible exploitation by employers, ensure fair retribution for violations of work safety requirements, and promote the spread of decent jobs. Proponents of labor regulations also emphasize that they establish a system that addresses moral hazard and promotes risk sharing. They also argue that minimum wages positively affect the wages of those who are formally employed, thus guaranteeing a basic income for a decent living, and that they have the potential to reduce inequality through their impact on employment and wages. Stringent employment protection arguably increases the cost of dismissal and therefore protects those workers who are in stable jobs by increasing both the duration of their contracts and more generally their bargaining power vis-à-vis their employers. Overall, institutionalists fear that under-regulation might worsen existing problems of insufficient worker protection and asymmetric information.

On the other hand, detractors of labor regulation (or “distortionists” in the parlance of Freeman, 1993 and Betcherman, 2015) contend that over-regulation can cut down job creation, particularly for vulnerable groups and other segments of the market whom labor regulations usually profess to support. For example, minimum wages may push more vulnerable workers into informal jobs or simply leave them out of the labor market altogether. Similarly, high levels of severance payments may prevent employers from creating jobs, especially for those workers who will require on-the-job training. Distortionists also argue that employment protection legislation may in fact exacerbate the negative impact of information asymmetry, as employers will only hire those workers with previous formal experience or diplomas.

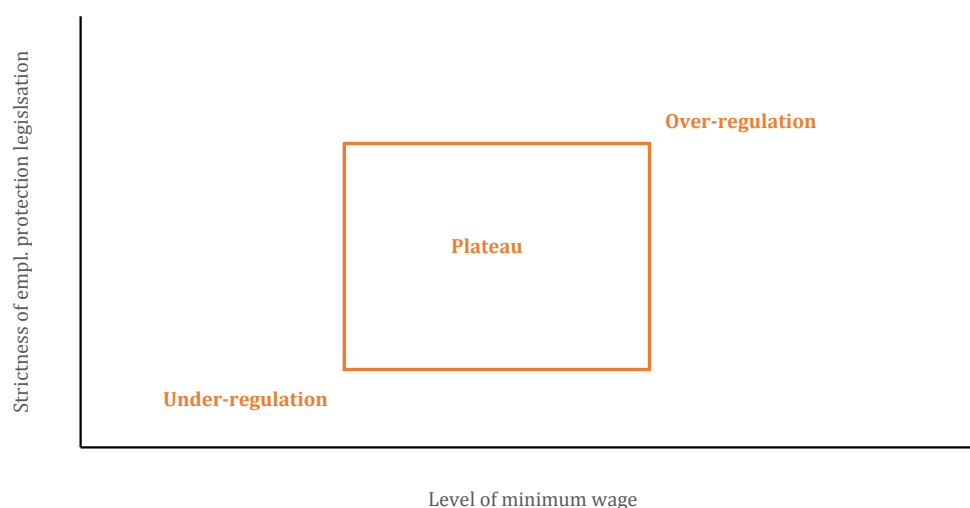
While heated debates between institutionalists and distortionists continue, in recent years a third perspective has become increasingly accepted, which argues that policymakers need to avoid both under- and over-regulation as detrimental effects are associated with each of these two extremes. Based on a review of over 150 studies on the impacts of labor policies, Betcherman (2014 and 2015) argued that governments should aim for their labor regulations to stay within a limited space that he calls the “plateau” between under-regulation and over-regulation. Within this plateau, governments have a large degree of flexibility to design more or less stringent labor regulations according to societal preferences. Trade-offs still have to be made even within the plateau between greater efficiency (achieved through more flexible labor regulations) and more redistribution (which often goes along with the stringent protection of workers), but the effects of these plateau regulations are generally modest and gradual. Therefore, governments can choose where exactly they want to be situated on the plateau depending on their social contract and normative preferences for redistribution and/or efficiency without risking any dramatic negative consequences for their labor market

outcomes.

However, and again according to Betcherman (2014 and 2015), around the plateau there are two “cliffs” related to over- and under-regulation. Falling off these cliffs means losing either flexibility or worker protection in a substantial and sudden manner. Therefore, governments are advised to exploit their margin of action in setting the level of their minimum wages and the strictness of their employment protection legislation, while making sure that they do not fall off a cliff. The recommended action is to pursue incremental reforms, monitor their impacts, and ensure that there are no unintended impacts. Betcherman (2014 and 2015) further emphasized that, while deriving causality is often difficult, causal impacts can in fact be estimated for many outcome variables influenced by minimum wages and employment protection legislation. In addition, relevant causal evidence from other countries can be used to draw inferences from descriptive results. When reforms are found to be warranted, these should be carried out in systematic and comprehensive manner (Kuddo et al, 2015).

The exact limits of the edges of the plateau are not defined in the academic literature, and certainly not for China. However, Figure 1.1 presents a visual representation of the conceptual framework encompassing the plateau and the two cliffs of over- and under-regulation. It makes direct reference to the level of the minimum wages and the strictness of employment protection legislation as the two most important and prominent forms of labor regulations and, therefore, the key determinants of whether a specific country is situated on the plateau or has fallen off one of the two cliffs.

**Figure 1.1: Conceptual Framework for the Plateau and Cliffs of Labor Regulation**



*Source:* Authors based on conceptual framework of Betcherman (2014 and 2015).

### 3. Existing Evidence

This section summarizes the evidence on the impacts of minimum wages and employment protection legislation on key labor market and distributional outcomes around the world and in China specifically.

#### 1.1. *International evidence*

Across the world, minimum wages and employment protection legislation have been an important yet controversial topic for both economists and policymakers.<sup>5</sup> In the textbook model of a perfectly competitive labor market, minimum wages are either completely ineffective or have an unambiguously negative impact on some labor market outcomes, particularly employment. In this textbook model, raising minimum wages above the market equilibrium wage increases the wages of workers who remain employed and decreases employment. Despite an early theoretical contribution by Stigler (1946) that showed minimum wages having potentially positive effects through productivity gains, until the mid-1990s, the dominant view in the economics profession was that the simple textbook model represented a suitable approximation of reality. However, more recently, models of imperfect or monopsonistic competition on the labor market and other models that are less unequivocal in predicting negative employment effects of minimum wage rises – at least for moderate minimum wage levels – have gained a certain degree of prominence (Albrecht and Axell, 1984; Van den Berg, 2003; Burdett and Mortensen, 1998; Flinn, 2011; and Manning, 2003). Ultimately, the results from the theoretical literature on the employment effects of minimum wages are ambiguous, and empirical studies are needed. In fact, the theoretical literature has been influenced by and has in turn influenced empirical studies on the economic role of minimum wages.

The consensus result of early studies using disaggregated macro cross-sectional and panel data was that minimum wage increases had significant disemployment effects (Brown et al 1982 and Neumark and Wascher, 1992). In a seminal contribution, Card and Krueger (1994) used a difference-in-difference approach and micro data on the fast-food industry in New Jersey and neighboring Pennsylvania and found no indication that an increase in New Jersey's minimum wage had reduced employment in the state. This study gave rise to the "New Minimum Wage" literature, which has used micro data and/or quasi-experimental empirical methods to evaluate the economic effects of minimum wages. Important contributions to this literature include Neumark (2001) and Neumark and

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<sup>5</sup> This sub-section does not aspire to be comprehensive. It draws on the findings of the World Development Report on Jobs (World Bank, 2012) and Betcherman (2015), both of which provide more comprehensive reviews of the relevant literature and also consider additional outcome variables.

Wascher (2008) who used individual-level repeated cross-section or panel data with state and time fixed effects and detailed controls for individual-specific characteristics to analyze the effects of the United States' minimum wages on employment as well as Allegretto et al (2011) who introduced additional controls for long-term growth differences among states and heterogeneous economic shocks and Dube et al (2010) who generalized the approach of Card and Krueger (1994) by considering all minimum wage differences across American states.

While over the last 20 years much has been learned about the employment effects of minimum wages in the United States and other developed countries, the literature on developing and emerging countries remains much more limited and focused mainly on Latin America and to a lesser extent South East Asia. Notable contributions include Rama (2001) on Indonesia, Strobl and Walsh (2003) on Trinidad and Tobago, Neumark et al (2006) and Lemos (2009) on Brazil, Gindling and Terrell (2007) on Costa Rica, Alaniz et al (2011) on Nicaragua, and Del Carpio et al (2014) on Thailand. Results from developed countries tend not to be directly applicable to developing and emerging countries as the ways in which they adjust to minimum wage increases may differ. In particular, developing and emerging countries often have large informal sectors that are not covered by the minimum wage policies. Therefore, a higher minimum wage may cause a shift of employment from the formal to the informal sector.

In spite of the profound methodological advances made over the last 20 years and the plethora of studies analyzing the effects of minimum wages on employment and other outcomes, a real consensus has so far not been reestablished. Table 1.1 presents the findings of a comprehensive review of the impacts of minimum wages on select outcome variables that was prepared for the World Bank's World Development Report on Jobs (World Bank, 2012). The findings generally remain valid seven years later. At the same time, it is worth noting that even broad reviews of the minimum wage literature sometimes reach contradictory conclusions. For instance, Neumark and Wascher (2008) concluded that the global evidence points towards minimum wages having negative employment effects, and Neumark (2014) argued that the evidence indicates that increases in actual wages triggered by minimum wage increases are offset by reductions in job numbers. In contrast, reviews and meta-analyses by Doucouliagos and Stanley (2009) and Wolfson and Belman (2014) found no statistically and economically meaningful employment losses, and Kuddo et al (2014) argued that, while there is a negative impact on employment, it is very small.

**Table 1.1 Impact of Minimum Wages on Select Outcome Variables**

| <i>Outcome variable</i>             | <i>Findings</i>  | <i>Comments</i>   |
|-------------------------------------|--|---|
| Aggregate employment                | Either no impact or modest negative impact                                 | Both industrial and developing countries; some studies show positive employment effect    |
| Employment of particular groups     | Negative employment impacts concentrated on youths and low-skilled workers | Some studies show positive employment effect  |
| Wages                               | Positive effect  | Effect strongest around minimum wage; some evidence of positive effect in informal sector |
| Wage distribution                   | Reduces wage inequality  |   |
| Poverty                             | Reduces poverty  | Some studies find no effect   |
| Labor and total factor productivity | No consistent conclusion   | Rarely analyzed   |

*Source: World Bank (2012).*

While the overall employment effects of minimum wages continue to be hotly debated, it is more widely accepted that minimum wage increases will affect the incidence of different employment types, with likely increases in informality and more precarious forms of employment such as self-employment (Lotti et al, 2017). As mentioned by Kalenkoski (2016) and Kuddo (2018), there is also relatively robust evidence that if minimum wages are set excessively high, then they can reduce employment opportunities for and create unemployment among young people. Under these circumstances, workers are also at risk of missing out on on-the-job training opportunities for which they would have been paid lower wages upfront but that would have yielded higher wages later. In addition, the relevant literature concludes that setting the minimum wage at a relatively low level and enforcing it effectively is generally more efficient and equitable than setting the minimum wage at a higher level with weak or selective enforcement (Rutkowski, 2003 and Kuddo, 2018).

An important factor that deserves to be given particular attention when analyzing minimum wages in developing and emerging countries are their effects on household-level and distributional outcomes like income inequality or poverty. These outcomes are the result not only of the direct effects on wages and employment but also on the household context of the minimum wage earners. The most common argument made in favor of a minimum wage is that it helps poor and low-income families, but because it can have some non-employment effects, minimum wages can create both winners and losers. The winners get a higher wage with no reduction in employment (or hours), while the losers bear the burden of the non-employment effect – losing their job, having their hours reduced, or finding it more difficult to get a job. This topic has been taken up by a number of empirical studies, and while their findings have been mixed, they generally find that the minimum wage has

some – limited – potential to improve aggregate distributional outcomes but also creates both winners and losers (Gindling, 2014). This means that, while the distributional effects of minimum wages need to be taken into account when establishing minimum wage levels, minimum wages cannot substitute for other policy instruments better suited to redistributing income and reducing poverty.

To some extent, the lessons arising from the review of the theoretical and empirical evidence on employment protection legislation mirror the lessons learned from the literature on minimum wages. Again, canonical theoretical models of competitive labor markets would indicate that employment protection legislation has an unequivocally negative impact on labor market outcomes. This is because the basic assumption of these models is that any form of employment protection raises employment costs for employers and thus might prevent them from hiring workers in the first place. However, just as the theoretical literature on minimum wages has been amended, in recent years the canonical models on employment protection legislation have been challenged from a theoretical perspective.

For instance, Pissarides (2001) used a model of search and matching to evaluate the effect of employment protection legislation on the performance of the labor market. In his paper, he considered labor market frictions and found that, if chosen optimally, employment protection legislation does not necessarily reduce job creation or negatively influence equilibrium employment. In addition, when market imperfections are fed into the standard models, employment protection legislation appears to have the potential to increase productivity as lower job turnover may incentivize workers and employers to invest in human capital (Addison and Teixeira, 2003). Other theoretical models show that more stringent employment protection legislation might increase employment within a given firm (the firm-intensive margin) but decrease firm entry (the firm-extensive margin) or that it might prevent workers from moving between jobs, resulting in lower productivity gains from labor reallocation to more productive firms.

With regard to the empirical evidence on the effects of employment protection legislation, following pioneering research by Lazear (1990), there have been many relevant studies, particularly of OECD countries. One descriptive finding of this literature is that globally there is only a weak association between the strictness of a country's employment protection legislation and its level of development. This argument was made by World Bank (2012) and similarly by Botero et al (2004), with both studies finding that development is not a significant determinant of the strictness of a country's employment protection legislation.

**Table 1.2 Impact of Employment Protection Legislation on Select Outcome Variables**

| <i>Outcome variable</i>               | <i>Findings</i>   | <i>Comments</i>  |
|---------------------------------------|---|--|
| Aggregate employment and Unemployment | Either no impact or modest negative impact on employment and modest positive impact on unemployment                                     | Evidence for both industrial and developing countries (largely Latin America); results tend not to be robust |
| Employment of particular groups       | Prime-age males favorably affected<br>Youths, women, and low-skilled unfavorably affected   | Partial reforms of two-track labor markets lead to more precarious employment for affected groups            |
| Employment dynamics                   | Longer duration of spells of employment, unemployment, and out of the labor force; smaller flows between different types of work status |  |
| Adjustments to shocks                 | Increases in the negative impact of shocks  | Consensus not strong   |
| Wage distribution                     | Reduces wage dispersion   |  |
| Reallocation of labor                 | Negative effect because of smaller labor flows  |  |

Source: World Bank (2012).

In a similar vein to minimum wages, the econometric studies on the impact of employment protection legislation on different labor market outcomes have also reached some mixed conclusions, but as data and estimation methodologies have improved, some messages have begun to emerge. Some consensus findings from the World Development Report on Jobs are summarized in Table 1.2.

Importantly, while most early studies found an unequivocally negative association between employment protection legislation and employment, more recent studies have tended to find no significant relationship between these two variables (see Betcherman, 2015 for a comprehensive review). Specifically, studies relying on longitudinal data have examined whether changes in the strictness of employment protection legislation have impacted employment, and their results are not conclusive.<sup>6</sup> At the same time, the studies found that stricter employment protection legislation has decreased job churning and increased the prevalence of temporary contracts. This result can be considered to be reliable as it holds both for cross-sectional studies and longitudinal analyses. It has also frequently been argued that stricter employment protection legislation can reduce the ability of economies to deal with economic crises, but no evidence was found by Eichhorst et al (2010) to sustain this argument among G20 countries after the global financial crisis. The evidence on the impact of employment protection legislation on wages, productivity, and inequality is still very scarce (though there is some evidence that stricter employment protection legislation reduces wage dispersion, while

<sup>6</sup> For Latin American countries, see Heckman and Pagés (2004) and Micco and Pagés (2006). For country-specific studies, see Kugler (2004) for Colombia, Saavedra and Torero (2004) for Peru, Petrin and Sivadadan (2006) for Chile, and Mondino and Montoya (2004) for Argentina.



OECD, 2011 argued that it increases inequality).

## **1.2. China-Specific Evidence**

Despite significant methodological and data challenges, some empirical studies have attempted to estimate the impacts of China's minimum wages and employment protection legislation on a range of economic outcome variables. The most noteworthy studies are summarized here, while provides a more comprehensive review of the relevant studies.

China introduced its current nationwide minimum wage policy in 2004. This policy is underpinned by the Minimum Wage Regulations issued by the then-Ministry of Labor and Social Security (now the Ministry of Human Resources and Social Security or MHRSS). Thus, the regulations were issued by the third level of China's legislative system, coming directly from a ministry instead of the National People's Congress as the first legislative level or the State Council as the second level. This has limited the amount of resources that provincial governments are willing to put into the work of setting minimum wage standards, monitoring their implementation, and evaluating their impacts. The regulations do not establish a uniform nationwide minimum wage. Instead, China's Five-Year Plans set general targets and the regulations recognize the right of provincial governments to set their own minimum standards in accordance with local conditions. The regulations also require the provincial governments to periodically revise their minimum wages through tripartite consultations between their representatives and those of employers and workers, after which they submit a proposal for the revision of the minimum wage rate to the MHRSS for approval.

Because of data constraints, empirical studies on the impacts of China's minimum wages have mostly used aggregate or semi-aggregate data and traditional approaches to minimum wage research (Ni et al, 2011 and Wang and Gunderson, 2011 and 2012). However, in recent years, a small number of pioneering studies have used firm-level or individual-level microdata and quasi-experimental empirical methods such as those pioneered by the "New Minimum Wage" literature.

One topic that has received widespread attention from analysts is how statutory minimum wage adjustments affect actual or effective wages. Most relevant empirical studies have found that minimum wage increases have small or insignificant effects on actual wages in China. The difference-in-differences estimations carried out by Wang and Gunderson (2012) indicated that minimum wage increases between 2002 and 2004 had no discernable impact on wages. This result was consistent for various types of workers. Luo and Cong (2009) used province-level panel data from the China Statistical Yearbook for the period 1994 to 2006. Their main finding was that minimum wages had contributed to wage growth but only for employees of high-wage enterprises such as traffic construction enterprises, real estate corporations,

and the finance and insurance industry. Luo and Cong (2009) also found that the effect of statutory minimum wages on actual wages varied across regions and over time. With regard to average wage growth, they found that minimum wages had had a positive effect, but it was insignificant and short-lived.

The second topic that has been widely studied is the impact of minimum wages on employment. Here, existing empirical studies have produced mixed or nuanced results. Most of the studies found that minimum wage increases have had some adverse employment effects but that these adverse effects have not happened across the board. Mayneris et al (2018) exploited the natural experiment created by the introduction of the Minimum Wage Regulations in 2004 and argued that minimum wage growth allows more productive firms to replace the least productive ones. A study by Huang et al (2014) was the first attempt to study the employment effect of minimum wage increases using county-level wage data matched with firm-level data. They found that minimum wage increases have had a significant negative impact on employment, with an estimated elasticity of -0.1. They also found that the effect of the minimum wage on employment depended on the firm's wage level.

Studies by Huang et al (2014), Fang and Lin (2015), and Wang and Gunderson (2011) yielded consistent findings. The study by Fang and Lin (2015) is one of the most careful studies of minimum wages in China. The authors documented three main results. First, they found that minimum wage increases in China have had significant negative effects on employment in the eastern and central regions. Second, minimum wage increases have reduced the employment levels of young adults and low-skilled workers. Third, minimum wage increases have had particularly adverse effects on employment in those provinces that vigorously enforced the relevant regulations (even in environments where average wages were increasing rapidly). In a similar vein, Wang and Gunderson (2011) found that between 2000 and 2007 minimum wage increases had negative effects on the employment of rural-to-urban migrant workers in China's slower-growing and less prosperous central and western regions. However, they found no significant adverse employment effects on migrant workers in the more dynamic eastern region.<sup>7</sup>

Because of data limitations, few papers have tried to empirically investigate the effects of China's minimum wages on individual-level or household-level outcome variables other than wages and employment. A noteworthy exception is a paper by Lin and Yun (2016) that analyzed the link between minimum wages and income inequality in China. Lin and Yun used city-level minimum wage panel data and data from a representative Chinese household survey. They showed that between 2004 and 2009 increases in minimum

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<sup>7</sup> Other studies on the employment effects of China's minimum wages include Luo (2007a), Luo (2007b), Wen (2007), Li and He (2010), Ma et al (2012), and Yang et al (2014).

wages led to a decrease in income inequality. Specifically, minimum wages increases reduced the income gap between those in the median and the bottom deciles, *ceteris paribus*.<sup>8</sup>

Li and Ma (2015) is the only existing empirical analysis that directly addresses the impact of minimum wages on the gender wage gap. The authors used micro survey data from the China Household Income Project (CHIP) for 1995, 2002, and 2007 and focused on urban areas. They found that the gender wage gap was larger in localities with higher minimum wage rates and investigated whether this was because of a causal effect of minimum wages on the gender wage gap or was the result of unobserved heterogeneity or other factors. The authors used a difference-in-differences analysis to show that the correlation that they had observed in the raw data was due to unobserved heterogeneity. According to their findings, the implementation of China's current minimum wage system helped to narrow the gender wage gap in urban China over the long term.

China's employment protection legislation is governed by the Labor Contract Law, which has been in effect since 2008. The law was formulated with the objective to improve the employment contract system, to specify the rights and obligations of the parties to employment contracts, to protect the lawful rights and interests of employees, and to build and develop harmonious and stable labor relationships. Among the law's myriad provisions, at least three stand out. First, it includes tight rules regarding individual and collective dismissals, for instance, requiring firms that are found to have dismissed workers unfairly to rehire them or pay them compensation. Second, the law stipulates specific severance payments, usually amounting to one month's wage for each year of employment. Third, the law sets out detailed regulations governing fixed-term employment contracts and puts some restrictions on the use of such contracts. In particular, it stipulates that fixed-term contracts can only be renewed once, after which they need to be transformed into open-ended contracts.

In recent years, a small but growing strand of the literature has begun to investigate the impacts of employment protection legislation in China, particularly the effects of the Labor Contract Law on workers and firms. Some studies have focused on the law's impact on employment or unemployment, and these have produced mixed findings. Chen and Funke (2009) found that, given China's fast-growing economy, the introduction of the law in 2008 had only a minimal negative impact on employment. In contrast, Gallagher et al (2015) and Liu (2016a) both found that the law decreased overall employment (or at least dampened the increase in overall employment). Gallagher et al (2015) pointed out that, although higher

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<sup>8</sup> Earlier empirical studies on the relationship between minimum wages and distributional outcomes include Wen (2007), Quan and Li (2011), Wang (2010), and Chen (2012).

labor costs may have had a negative impact on the growth of manufacturing employment, they have not led to an overall increase in aggregate unemployment.

Findings about the impact of the Labor Contract Law on wages and working hours have generally been more positive. Cui et al (2013) carried out an empirical analysis using the Annual Surveys of Industrial Production. Their results suggest that the law increased wage and non-wage benefit growth in the manufacturing sector by 21.6 percent and 13.8 percent respectively. According to Gallagher et al (2015), the introduction of the law did not prevent the rapid growth of real wages that happened in 2009 and 2010. Cheng et al (2015) confirmed that the adoption of the law had had significantly positive effects on workers' wages. Liu (2016b) found that the law increased working hours. However, Meng (2017) reached somewhat different conclusions. It pointed out that the implementation of the law has occurred at the same time as a labor shortage. As a result, the author argued that the effects of the law on the labor market are multi-faceted but include some negative effects on wages and working hours.

There is also a literature focusing on the impact of the Labor Contract Law on social insurance coverage. This literature has generally found that the law increased coverage. Gao et al (2012) used pooled cross-sectional survey data for rural-to-urban migrants from the CHIP in 2007 and 2008 and a logistic regression model, and found that an employment contract, especially a long-term contract, considerably increased the probability of migrant workers being covered by social insurance. They also found that moving from a short-term contract or no contract to a long-term contract significantly increased a worker's probability of having social insurance, whereas losing a long-term contract reduced the likelihood of having social insurance.<sup>9</sup>

Studies of the Labor Contract Law's impacts on firms have generally found some negative effects, but some also reach different or more nuanced conclusions. There are three groups of studies. The first group finds that the law has had almost uniformly negative impact on firms. The study by Chen and Funke (2009) already mentioned above simulated the extent to which the law might have affected labor demand. Their results implied that the law on its own would not directly reduce the labor demand of law-abiding firms but that, by outpacing labor productivity growth, induced future wage growth would slow down the growth of labor demand. Cooper et al (2018) examined the labor demand, productivity, and welfare implications of the Law in a general equilibrium framework with labor adjustment costs. They found that the law has dampened growth. If the law had been in place in the decade before 2008, it would have reduced China's annual growth rate by nearly 1

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<sup>9</sup> Cheng et al (2015), Gallagher et al (2015), Freeman and Li (2015), and Meng (2017) all found that the adoption of the Labor Contract Law has had significantly positive effects on workers' social insurance coverage.

percentage point.

The second group of studies including those by Zhang (2009), Cheng and Yang (2010), and Lan et al (2015) produced more ambiguous results. These authors argued that whether firms in China were negatively impacted by the Labor Contract Law has to a large extent depended on the firm's size, ownership type, or other firm-specific characteristics. For example, Zhang (2009) found that the law has had a greater impact on the labor costs of small firms, private firms, and firms in the services and construction sectors. Based on a survey of almost 600 human resources managers, Cheng and Yang (2010) found that the law had significantly increased the incidence of employment contracts, extended the term of contracts, increased the number of open-ended contracts, and led to firms being more cautious about their recruitment and dismissal decisions. This increased labor costs and restricted labor flexibility to some extent, but the effects varied among enterprises of different sizes and ownership. Lan et al (2015) also found that the effects of the law have varied among different types of private firms as well as between private and state-owned enterprises.

A third group of studies has argued that the Labor Contract Law does not impact firms negatively and, on the contrary, may foster economic restructuring. Based on interviews with enterprise managers, Li et al (2009) investigated the effects of the law on the competitiveness of China's labor-intensive industries. They argued that there are no indications that the law has reduced labor demand. Liu (2008) founds that firms had various methods for coping with the implementation of the law, while Huang (2012) argued that, although the law increases firms' firing costs, it might be good for knowledge-intensive industries and might have increased demand for high-skilled workers. Overall, the second group of studies is the largest, and the third group the smallest, which points to a tentative consensus that the stricter employment protection legislation embodied in the Labor Contract Law has had some but not uniformly negative impacts on firms.<sup>10</sup>

#### 4. Overview of Edited Volume

This edited volume explores how the operation of labor market regulations affects labor market outcomes with the aim of providing policymakers in China with suggestion for how best to balance workers' protection and labor market flexibility going forward. The volume focuses on two key labor policies –the Minimum Wage Regulations and the Labor Contract Law. The different chapters each carry out original analyses using various methodologies including quantitative research, legal analyses of

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<sup>10</sup> Other empirical studies of how the Labor Contract Law has affected firms include Zheng (2009), Cui et al (2013), Yan (2015), Ni and Zhu (2016), and Pan and Chen (2017).

laws and regulations, and case studies. They also use a range of different data sources, including macroeconomic data and official statistics as well as micro data at the individual and firm levels. The chapters also review the broader context affecting China's labor markets and labor policies and spell out the implications of their findings for policymaking and further research.

### **1.1. Setting the Stage**

As part of the introductory part of this edited volume, by Shi Li and Chunbing Xing summarizes China's key labor market trends in recent years with an emphasis on employment, the wage structure, and labor productivity. They document how employment in China's agricultural sector has decreased significantly over the last few decades, while it has increased in parallel in the non-agricultural sector. Moreover, in the non-agricultural sector, the industrial and occupational structure has become increasingly polarized because of technological change and globalization. In other words, there seem to be initial signals that the employment share of middle-waged industries and occupations is decreasing. This is consistent with the findings of the World Bank's flagship report on China's economy, *Innovative China: New Drivers of Growth* (World Bank, forthcoming). The authors of the chapter also show that, on the supply side, China's labor force has become increasingly educated. In parallel, rural workers have become increasingly reluctant to travel long distances to work in coastal cities, while in urban areas, the labor force participation rate has declined. Average wages have increased, while wage inequality has remained high, mostly because of high returns to education. Labor costs are still relatively low compared to labor productivity.

Also, in the introductory part of this edited volume, by Yayun Pan and Achim Schmillen provides more detailed background information on the institutional environment of the Minimum Wage Regulations and the Labor Contract Law and the relevant literature. The objective of the chapter is to explore labor market issues and challenges in China since the introduction of the government's opening-up policy and the country's transition to a market-oriented economy. The authors chart the development of minimum wages up to the introduction of the Minimum Wage Regulations as well as afterwards. It also summarizes the relevant literature on the setting and coverage of minimum wages, on compliance issues, and on their labor market effects. The chapter's discussion of the Labor Contract Law consists of four parts: (i) a summary of the main provisions of the law and the general institutional background; (ii) a review of the existing literature on the strictness of China's employment protection legislation; (iii) a summary of research on the law's impact on workers; and (iv) a summary of research on its impact on firms. The authors argue that the available evidence on the impacts of China's minimum wages and employment protection legislation is largely consistent with the impact in other developing and emerging countries.

## 1.2. Minimum Wages

Different aspects of China's Minimum Wage Regulations are investigated in more detail in Chapters 4 to 6. by Chenggang Zhang, Cheng Chang, and Xiaofei Chen uses a case study approach to investigate the implementation of the Minimum Wage Regulations in two Chinese provinces that serve as test cases, Shanghai (a province-level city) and Guangdong Province. Using the case study approach, the chapter describes and analyzes the implementation of the Minimum Wage Regulation up close, including the detailed and multi-layered procedures used for adjusting the minimum wage in both provinces.

The authors discuss how, even the central government established the Minimum Wage Regulations, the provincial governments continue to be in charge of setting and revising minimum wage rates. A tripartite consultation mechanism is a necessary part of the procedure for revising minimum wages but is implemented somewhat differently in Shanghai City than in Guangdong Province. The authors conclude that, while the different levels of government and other relevant stakeholders have basically achieved a consensus on the role that the minimum wages should play, there is room for further improvements and revisions to the minimum wage system. They make some recommendations that include leveraging the flexibility provided by the regulations to reconsider the practices used to set and implement minimum wages without adding any complicated and lengthy legislative procedures.

In chapter 5, authors Achim Schmitten, Michael Stops, and Dewen Wang argue that, while many analysts have studied the effects of minimum wage rates on wages, employment, and other outcome variables, the distribution and determinants of minimum wages have received less attention. To shed some light on these issues, the authors use a highly disaggregated macro panel of county-level minimum wage rates and other highly disaggregated macro variables from 2005 to 2014 to investigate the distribution of minimum wages in China and the processes used to adjust them. They use spatial econometrics techniques to study the roles of both central mechanisms and spatial interaction effects between subnational governments.

Among other findings in Chapter 4, the authors document that, between 2005 and 2015, the average monthly minimum wage rose at a very fast pace, with a brief pause only during the depth of the global financial crisis in 2009. A decomposition of the overall variation of minimum wage rates shows that the majority of this overall variation can be attributed to variation between provinces. Regression results suggest that, when provincial governments adjust local minimum wages in different counties, they tend to consider not only some key indicators of local economic development but also the economic development in other provinces that are either located nearby or are economically similar. There are two possible reasons why they do this. First, the provinces may be competing with each other to be attractive to either workers or investors. Second, the provinces may be attempting to meet

the central government's policy guidelines that aim for all minimum wages to fall within the same relatively narrow range.

Chapter 6 by Sylvie Démurger, Carl Lin, Achim Schmillen, and Dewen Wang tackles another important aspect that has been relatively neglected by the existing research on China's Minimum Wage Regulations: whether and to what extent the introduction of the Regulations in 2004 has affected China's urban poverty rate. Methodologically, the authors use difference-in-differences estimations that make it possible to address the potential of omitted variable bias. Omitted variable bias occurs when a variable that is correlated with both the dependent variable and an explanatory variable in a regression equation is omitted from this regression equation. It is the most severe challenge to the validity of results from empirical minimum wage research.

The results of the analysis show that the introduction of the Minimum Wage Regulations made a significant contribution to reducing poverty, albeit with a relatively modest effect size. These results are qualitatively robust across different subgroups, including both female workers and household heads. In fact, the introduction of the regulations had the greatest impact on reducing poverty among female household heads affected by the policy change. The authors caution that the downward effect of minimum wage increases on poverty identified in the literature may no longer hold today, but the results imply that minimum wages, combined with targeted anti-poverty and social assistance policies like the urban dibao minimum income guarantee program, can be a useful tool for reducing poverty. The authors conclude that there is a need for more detailed studies of the role that minimum wages can play in poverty reduction strategies.

### **1.3. Employment Protection Legislation**

Chapters 7 to 9 analyze China's employment protection legislation, specifically the country's Labor Contract Law. by María-Antonia Remenyi demonstrates the strictness of employment protection regulation in China by analyzing the Employment Protection Legislation Index (EPL Index), a method developed by the OECD to estimate the strictness of employment protection in a comprehensive, standardized, and internally comparable way.

The author finds that China has the highest score in the sample of countries considered in the chapter in terms of the protection of permanent workers against individual and collective dismissal. score Regarding the regulation of temporary forms of employment, the flexibility of China's regulation is about the same as the average for the sample as well as the average for all OECD countries. Despite China's very high score on the protection of permanent workers, the author argues that legal norms by themselves do not provide sufficient evidence of the actual strictness of the Labor Contract Law. If the Law is not enforced in practice or if employers and workers have no confidence that the government will enforce the law,



then even the strictest regulation becomes flexible in practice.

Turning to the Labor Contract Law's implementation details, by Meiyan Wang and Peng Jia studies the impact of the law on the labor market. The authors use quantitative analyses and two detailed micro data sets with precise household and firm-level information, the China Urban Labor Survey (CULS) and China Employer-Employee Survey (CEES). They find that, since the introduction of the law, labor market formality as measured by the employment contract signing rate has increased significantly. At the same time, they draw attention to one worrying fact. According to the Annual Monitoring Survey of Migrant Workers conducted by the National Bureau of Statistics (NBS), while the coverage of rural-to-urban migrant workers by employment contracts slightly increased from 42.8 percent in 2009 to 43.9 percent in 2012, it then decreased to 38.2 percent in 2016.

The authors argue that, in China's ongoing supply-side structural reforms, the government is leaning towards reducing workers' protections in an attempt to lower firms' unit costs. However, firms' unit labor costs may in fact be lowered by increasing the coverage of employment contracts because, according to the chapter's findings, this increases their labor productivity more than their average labor costs. Thus, policies aimed at reducing workers' protection may actually have negative effects on both workers' protection and firm's unit costs. Therefore, the authors recommend a more nuanced approach.

Chapter 9 by Achim Schmitten investigates the interplay between the tightening of employment protection legislation in China through the Labor Contract Law and the earnings gap between covered and uncovered urban workers. This analysis uses four waves of repeated cross-section individual-level data from the CHIP covering the period from 2002 to 2013 and covering many of China's main economic and population centers. The author finds that, throughout the investigation period, the average monthly earnings of urban workers with an employment contract were significantly higher than those of urban workers without a contract.

The author shows how the introduction of the Labor Contract Law went hand in hand with a significant widening of the gap in average monthly earnings between covered and uncovered workers. Moreover, before the introduction of the law, differences in average earnings between covered and uncovered urban workers could entirely be accounted for by differences in their observable characteristics (mostly by differences in their educational attainment). In contrast, the ensuing widening of the average earnings gap was entirely due to the impact of their observable characteristics on their earnings. The author shows that these findings are robust across various empirical specifications, including limiting the sample to either men or women. A similar picture also emerges for rural workers and for rural-to-urban migrants. These findings provide an argument in favor of policies that would smooth differences in the law's treatment of workers with and without an employment contract or making it easier for employers and employees to enter into such a contract.

### **1.4. The Way Forward**

Building on the conceptual framework set out in this chapter as well as the analyses in Chapters 2 to 9, Chapter 10 by Josefina Posadas and Achim Schmillen suggests some possible ways forward for China's labor regulations. Specifically, it considers the changing nature of work and the ensuing implications for the future of the Minimum Wage Regulations and the Labor Contract Law. The authors argue that skills requirements, work environments, and work arrangements are all changing. Demographic change and globalization are the key drivers of these changes, while the digital and computing revolution is also causing big shifts in the world of work. In addition to performing routine cognitive and non-cognitive tasks as at present, machines are being developed that are capable of performing non-routine tasks that even very recently have been reserved to humans and that involve applying logic and information to provide a wide array of goods and services from automated manufacturing and transportation to advanced accounting and making bail decisions. China is at the forefront of this digital and computing revolution, and the resulting changes in the nature of work are already becoming apparent.

According to the authors, this changes what constitutes the plateau where many of the potential negative effects of labor regulations can be avoided. Rapid changes put a premium on flexibility for firms to be able to adjust their workforce but also for those workers who have the skills to benefit from a more dynamic labor market. This means the social cost of protecting jobs instead of workers is increasing. If China is to stay on the plateau, it must be ready to change its labor regulations. In addition, the changing nature of work will require a renewed emphasis on social protection, basic education, lifelong learning, and labor market intermediation services to protect the livelihoods and well-being of China's workers in the future.

## **5. Main Findings and Policy Implications**

This edited volume demonstrates that China has undergone a profound transformation in a short period of time. It has experienced rapid technological change and has become increasingly integrated into the world economy. These processes have fundamentally influenced its labor market, and in turn, changes in China's labor markets have had a major impact on the Chinese economy.

Both the case studies and the quantitative evidence documented in this edited volume show that provincial governments are responsible for setting minimum wage rates. However, before they decide on a minimum wage level, they are supposed to listen carefully to the opinions of the relevant stakeholders and take local economic and social development into account. During these tripartite consultations with representatives of workers and employers, different stakeholders may hold substantially different views, while

the provincial governments are supposed to play a neutral role. Although this system for setting minimum wage rates is already well-developed in Shanghai City and Guangdong Province, it may not be so advanced in other parts of China. The tripartite consultation mechanism is also weakened by the lack of representation of small-scale enterprises, by high administrative costs, by insufficient independence between the three stakeholder organizations, by the imbalances in bargaining power between them, and by the increasingly strong voice of the provincial governments in the negotiations.

When adjusting the local minimum wage rates in different counties, provincial governments tend to consider not only some key indicators of local economic development but also economic development in counties in other provinces that are either located nearby or are economically similar. There are two possible reasons why they do this. First, provincial governments may be competing with each other to be attractive to either workers or investors (although they deny this is what motivates their behavior). Second, provincial governments may be attempting to fulfil the central government's policy guidelines that aim for all minimum wages to fall within the same relatively narrow range.

Overall, this edited volume's findings on the impacts of the Minimum Wage Regulations are broadly in line with the findings of the existing literature. The consensus view is that, over most of the last 15 years, China's minimum wages have not been binding for most workers but that they have been binding for certain groups of low-wage workers. As a result, the wages of these workers may have increased, employment levels may have dropped modestly, and overall inequality and poverty may have fallen slightly.

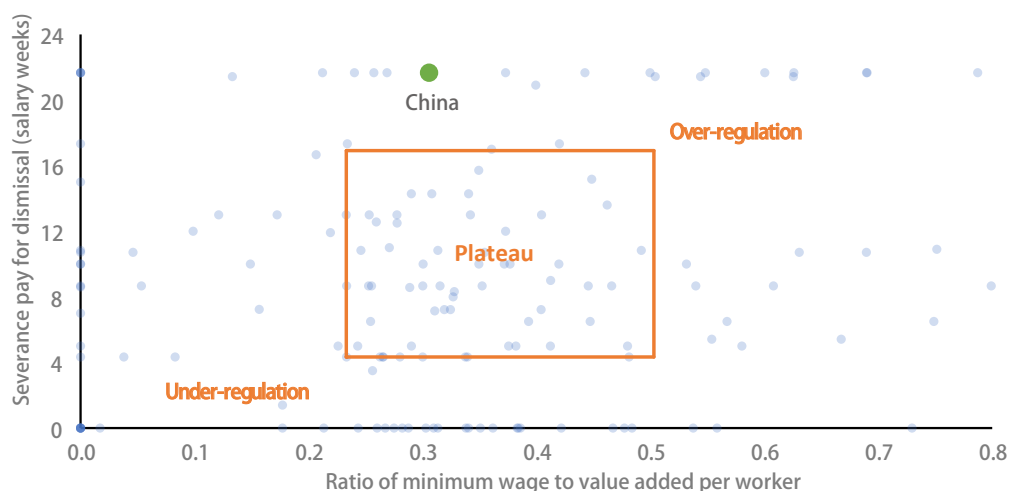
Concerning the Labor Contract Law, this edited volume confirms the conclusions reached by the existing literature that the law has increased the number of workers covered by employment contracts and the proportion of workers covered by social insurance. Also in line with existing evidence, it appears that the law may have had some negative impacts on firms, although these have probably been small so far because the law is not enforced in a uniform and stringent way. This means that, in practice, employment protection legislation in China seems to only moderately stringent. The failure to enforce the law is a result of weak governance. As Baker and McKenzie International (2013) pointed out, non-compliance with the law is "mainly attributable to blatant violations of the law by unscrupulous employers, inconsistent and loose administrative enforcement at the local level, employees' lack of knowledge of their rights, or simple fear of employer retribution if those rights were asserted."

At the same time, according to the most widely used measure of the *de jure* stringency of employment protection legislation, the OECD's Employment Protection Legislation (EPL) Index, China has one of the most protected labor markets in the world, particularly when it comes to permanent workers. In addition to this worrying finding, the edited volume also found that the introduction of the Labor Contract Law went hand-in-hand with a significant widening of the average gap in log monthly earnings

between covered and uncovered workers. This widening could not be attributed to newly emerging differences in observable characteristics. This is consistent with recent theoretical explorations of the interplay between two-tiered earnings structures and labor market reform, including Boeri's (2011) theoretical labor market model according to which a tightening in employment protection legislation will increase the earnings premium for workers covered by this legislation over unprotected workers. Hence, China seems to have established employment protection legislation consistent with what has been called “two-tier” or “two-track” labor markets (Betcherman, 2015).

Figure 1.2 considers whether China is currently on or off the plateau that avoids both over- and under-regulation of labor markets. This is a repeat of Figure 1.1 but using real data for the relative level of minimum wages and employment protection legislation for China and 185 other countries. These two indicators are illustrative but are also two of the most representative ones. The figure draws directly on recent data on labor regulation collected through interviews with more than 1,000 national experts (mostly law firms and labor lawyers) for the World Bank's “Doing Business” report (World Bank, 2018 and also Kuddo, 2018). The relative minimum wage levels for different countries were measured by the ratio of the statutory minimum wage to value added per worker, a widely available proxy for the average wage per worker. The stringency of employment protection legislation is captured by the severance pay for dismissal in salary weeks in case of a redundancy dismissal of a worker with five years of tenure. Severance pay is one of the most widespread forms of employment protection legislation, and its generosity frequently depends on length of tenure.

**Figure 1.2: Plateau and Cliffs of Labor Regulation, China versus Other Countries 2017**



**Source:** Authors' calculations based on Doing Business report (World Bank, 2018) and the conceptual framework set out in Betcherman (2014 and 2015).

**Note:** China represented by Shanghai. Minimum wage refers to a cashier, aged 19, with one year of work experience. Severance pay for redundancy dismissal refers to a worker with five years of tenure. Economies for which 0 is shown

have no minimum wage in the private sector and/or no statutory severance pay for a worker with five years of tenure. The plateau is defined as a range from the first to the third quartile of the distribution. Countries with severance pay for dismissal in excess of 24 weeks and a ratio of minimum wage to value added per worker greater 0.8 are not depicted. Economies where dismissal due to redundancy is not allowed are also excluded.

For illustrative purposes, Figure 1.2 defines the plateau as ranging from the first to the third quartile of the distribution of both the measure of the level of the minimum wage and of the employment protection legislation. This corresponds to a ratio of minimum wage to value added per workers from 0.23 to 0.50 and to severance pay of 4.3 to 16.9 salary weeks.

Figure 1.2 shows that, in China (represented in the figure by Shanghai as the country's most important center of economic activity), the ratio of the minimum wage to value added per worker is 0.37 while severance pay for the redundancy dismissal of a worker with five years of tenure amounts to 21.7 salary weeks (or five months). Consistent with this edited volume's broader findings, this puts China squarely on the plateau as far as the minimum wage is concerned. This means that, in this respect, China has room to exploit trade-offs between efficiency and the distributional effects of minimum wage adjustments without running the risk of having any dramatic negative impact either on labor market flexibility or worker protection.

At the same time, Figure 1.2 raises concerns about the strictness of China's employment protection legislation. At least *de jure*, this appears very stringent; the figure clearly places China among the group of countries where labor markets are over-regulated as far as employment protection legislation is concerned. Confirming this edited volume's broader findings, China seems to have established employment protection legislation consistent with "two-tier" labor markets.

Figure 1.2 does not use rigorous econometric methods to determine if China's labor regulation put the country on the plateau but simply illustrates this edited volume's findings. Nevertheless, the basic finding of its analysis of the *de jure* level of China's minimum wages and stringency of its employment protection legislation is consistent with other analysis that has used different measures and comparison groups. For example, World Bank (2014) compared the ratio of minimum wages to average wages for eight East Asian countries. It found that China ranked seventh, with only Lao PDR having a lower ratio of minimum wages to average wages. In contrast, as detailed more thoroughly in Chapter 7 and as mentioned above, China has one of the most protected labor markets in the world. According to the OECD's EPL Index, China ranks as the second most regulated country out of 72 with regard to the protection of permanent workers. Its index value is 3.2, while the average for the other countries in the sample is 2.2. For other categories of workers, China's employment protection regulations are strict, but are more in line with those of other middle- and high-income countries. In fact, for temporary workers, China's employment protection legislation is relatively lenient. Its rating on the EPL Index for temporary workers is 1.9, while the average for all 72 countries is 2.2.

In terms of policy implications, this edited volume's findings indicate that China would probably benefit if it continued its policy of moderate, sustained, and systematic minimum wage adjustments. China's current minimum wages appear to be neither particularly high nor particularly low, which leaves room for policymakers to exploit trade-offs between labor market flexibility and workers' protection. This conclusion is in line with the policy guidance of the Eleventh Five-Year Plan (which advocated convergence in living standards) rather than that of the Twelfth Five-Year Plan (with its emphasis on moderate minimum wage hikes to take account of the "New Normal"). Overall, if minimum wage policies are implemented along with targeted anti-poverty and social-assistance policies like the dibao minimum income guarantee program, they have the potential to be a useful tool for reducing poverty and income inequality as long as they do not exceed labor productivity growth. In addition, the government might consider extending the role played by the tripartite consultation mechanism in setting the minimum wage rates to increase awareness and compliance on the ground, to be more transparent, consistent, and systematic when adjusting minimum wages, and to work on elevating the legislative level of the Minimum Wage Regulations.

Regarding employment protection legislation, the government might consider on the one hand reducing the *de jure* strictness of the Labor Contract Law and on the other hand increasing *de facto* compliance with its provisions. As far as the law's basic stringency is concerned, policymakers should focus on scaling back the protections for permanent workers, which is much stricter than the international norm. Reducing the dismissal costs for permanent employees would make it easier for both employers and employees to enter into employment contracts. At the same time, it is recommended that making contracts more flexible should go hand-in-hand with other policies aimed at reducing informality and increasing labor productivity. In particular, it is recommended that the government further strengthen enforcement by enhancing job inspectors' schemes and imposing effective sanctions for violations. Enforcement could also be strengthened by educating workers about their rights. Finally, as at least some non-compliance with the law can be expected to persist for the foreseeable future, it is worth considering policies that would smooth out any differences in how the law treats workers with and without employment contracts.

Broader policy recommendations stemming from the analysis in this volume include reforming the educational system to meet the demand for skills. The system of primary and secondary education should be elastic enough to supply the rising demand for education in urban areas, especially for the children of rural-to-urban migrants, and higher education should be further expanded. The evidence related to job polarization also suggests that efforts should be made to increase students' ability to perform non-routine tasks (for example, by developing their communication and critical thinking skills). In addition, more and more evidence suggest that large cities

provide more job opportunities and higher wages and that rural-to-urban migrants prefer working in large cities (Lu, 2016 and Xing and Zhang, 2017). However, the hukou system in large cities is more restrictive. Therefore, to facilitate continued rural-to-urban migration and exploit the resulting productivity gains, the hukou household registration system should be reformed to reduce discrimination against migrant workers in the workplace and improve the delivery of public services.

Finally, while this edited volume aims to help to close crucial knowledge gaps about labor regulations in China, some important gaps remain. For example, there is a need for a more detailed analysis of the impacts of minimum wages on rural workers and rural-to-urban migrants. Partly because of data restrictions, many of the existing studies and also some of the analyses in this edited volume have not included these groups of workers. Existing studies also tend to focus on the period around the introduction of the Minimum Wage Regulations. While minimum wages grew very rapidly during this period, average wages did so as well, whereas more recently, wage increases have plateaued. Also, there is a lack of detailed analysis of the mechanisms underlying the trade-off between protecting workers covered by the Labor Contract Law and limiting the earnings gap between covered and uncovered workers. Knowledge gaps also persist regarding the resulting implications for overall inequality, poverty, and welfare. Investigations aimed at filling these knowledge gaps would constitute worthwhile follow-up work to this study.

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# Key Labor Market Trends

Shi Li and Chunbing Xing

## 1. Introduction

In the past three to four decades, China has achieved rapid economic growth and experienced dramatic changes in its economic and employment structure. Total employment increased significantly, by 13.8 percent, between 1995 and 2015, and China's employment structure has changed even more dramatically. As a result of massive migration of labor from rural to urban areas, urban employment as a share of total employment grew from less than 28 percent in 1995 to 52 percent in 2015. Employment in China's secondary and tertiary sectors—mainly the manufacturing and service industries—has also grown. These sectors constituted less than 48 percent of total employment in 1995, but by 2015, they accounted for 72 percent. In parallel, more jobs have been created in the private sector, while employment in state-owned enterprises and the public sector has declined considerably.

Despite high jobs growth in the past, the labor market itself will present a number of major challenges to China's sustainable growth in the future. China's economy is in transition from a planned economy to a more market-based economy, and this will also change the nature of the labor market. However, several barriers are preventing the labor market from making this transition including segmentation and discrimination against some disadvantaged groups such as migrant workers in terms of employment opportunities, wage determination, and access to social security programs. On the labor demand side, several factors have increased the demand for labor in urban areas, particularly China's burgeoning private economy, the country's increased exports after its entry into the World Trade Organization (WTO) in 2001, and growing investments in physical capital. Millions of rural migrant workers are employed in urban enterprises, but they cannot easily access social services and face discrimination in the labor market because of the hukou household registration system, which prevents migrants from benefiting from social services outside their community of origin. Although the system has been reformed to a degree, it is still a significant hurdle for

these workers, particularly in large cities.

China's employment growth will be constrained by the slowdown of migration from rural to urban areas and the rapid aging of the society. In recent years, economists have hotly debated whether China has reached the "Lewis turning point," which is when the surplus labor from rural areas runs out (Cai, 2010; Cai and Du, 2011; Knight et al, 2011; and Zhang et al, 2011).<sup>11</sup> Even when overall employment has increased in the past decades, labor force participation has declined. Data from the China Household Income Project (CHIP) indicates that the labor force participation rate of the working age population in urban China was close to 90 percent at the end of the 1980s but had declined to less than 73 percent by 2013.<sup>12</sup> Notably, the labor force participation rate for women fell more than the rate for men (the female labor force participation rate fell by more than 20 percentage points between 1988 and 2013 compared with 11 percent for men) (Xu and Li, 2019). Part of this decrease has stemmed from positive changes such as increased education achievement for women, but another part has been driven by the fact that it has become more difficult for female workers to find good jobs than for their male counterparts, which is reflected in the increased gender wage gap in urban China since the mid-1990s (Li et al, 2014). While many studies have noticed the decreased labor force participation phenomenon, no consensus has been reached regarding the underlying causes (Feng et al, 2015; Li et al, 2014, Yan, 2016; Fu et al, 2016; and Xu and Li, 2019).

Along with these changes in the employment structure, labor market institutions have also changed. The number of workers covered by social protection programs, particularly social insurance, has been significantly extended since 2008, when the New Labor Contract Law was passed (see Chapters 7 to 9). Nonetheless, social protection coverage is markedly different for different types of workers, particularly between workers in urban areas with a local hukou and workers who have migrated from the countryside without a local hukou. Also, minimum wages have been raised more frequently since 2004, and compliance with them has been monitored more strictly (Xing and Xu 2016 and Chapters 4 to 6 of this report) Research also shows that trade unions have been playing a more important role in shaping workers' welfare and protection (Yao and Zhong, 2013).

The average wages of Chinese urban workers have grown at almost the same rate as the country's gross domestic product (GDP) over the last two decades. These increasing labor costs give rise to the possibility that China will lose its comparative advantage in the global market.

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<sup>11</sup> As a sufficient supply of rural-to-urban migrants is often seen as critical for China's sustainable growth, Section 3.2 examines the current situation of rural-to-urban migration in more detail.

<sup>12</sup> According to more recent data from the National Bureau of Statistics, the labor force participation rate was 70 percent in 2015.

Another prominent concern is China's widening wage inequality. Wage inequality can be manifested in various ways such as education, gender, age, industry (especially between monopolistic and non-monopolistic industries), and unobservable characteristics (the so-called “residual wage inequality” as referred to by academics). Previous studies have suggested that wage inequality is growing mainly because the wages of well-educated and skilled workers have grown faster than those of less-educated and unskilled workers because, in response to changing technology and trade patterns, the returns to skilled labor have increased. In turn, the Chinese labor market has been seeking more and more skilled workers. In response to this demand, the number of higher education institutions has increased significantly, as has the share of highly educated workers in the workforce, especially among younger cohorts. However, some studies have shown that the expansion of higher education institutions has in fact led to an increase in the unemployment rate of recent college graduates (Knight et al, 2017 and Li et al, 2014). As China's education has expanded sharply over the last two decades and the nature of work is changing with increased globalization and automation, the question is whether the role played by education in shaping wage inequality will also change. Research shows that, as a result rapid increase, minimum wages have had some negative effect on employment and reduced wage inequality (Lin and Yun, 2016 and Fang and Lin, 2015).

This chapter documents trends in China's current labor market, discusses challenges that have emerged in the last 10 years, and lays out some policy implications. Section 2 introduces the data that were used in this chapter. Section 3 documents trends in employment growth and labor force participation and discusses their underlying drivers, paying special attention to technological change and globalization. Section 4 documents the patterns of labor mobility across regions (particular rural-to-urban migration) and how they have evolved over time and discusses the related challenges created by the hukou system. Section 5 focuses on the wage structure. In this section, we use data from CHIP 2002 and 2013 to investigate how wages in urban China have changed over the last two decades. Section 6 discusses labor costs and labor productivity, while Section 7 summarizes the main findings of the chapter and offers a number of policy suggestions.

## 2. Data

We have used several data sources to document China's labor market trends. First, we relied extensively on small, random samples from census data for 1990 and 2000 and on the 1-percent-of-population survey (or mini-census) for 2005. Second, we used household survey data from the Chinese Household Income Project (CHIP) from 1995, 2002, 2007, and 2013. Finally, we supplemented these sources with statistics from various yearbooks from the National Bureau of Statistics (NBS).

Census data provide a nationally representative picture of the labor

market. With appropriate weighted adjustments, this is the only data source that covers all of China. In addition to information on personal and household characteristics, the censuses contain detailed data that enabled us to examine changes in the occupational and industrial structure. However, we had to compensate for a few shortcomings in these data. Because the occupation and industry classifications have changed significantly over the years (especially between 1990 and 2000), we had to recode the occupations and industries to make them consistent across different years. Another shortcoming of these data was that, except for the mini-census data for 2005, they do not contain any information on labor earnings. This made it difficult for us to link occupations with earnings. To incorporate more recent information, we also used statistics from the 2010 census that have been released by the NBS. These statistics have been disaggregated sufficiently to enable us detect changes in the structure of earnings at the industry level. However, they are not disaggregated enough to allow us to examine any changes in the structure of earnings by occupations within specific industries.

The household survey data provided us with a more granular description of the characteristics of the working age population. It allowed us to document in detail how the labor market has changed over the first 15 years of the 21st century. The first two rounds of the CHIP survey were conducted by China's Academy of Social Science (CASS) in cooperation with the NBS. The other two were conducted by the China Institute for Income Distribution (CIID) and the NBS. The geographical coverage of CHIP has expanded over time,<sup>13</sup> but we have not included any provinces added after 1995 in our analysis (with the exception of Chongqing). Since our focus was on the labor market, particularly wages, our final sample included only employed people between 16 and 60 years old who were receiving positive wages. Throughout this chapter, we focus on the annual wages of full-time workers, adjusting prices by the annual national CPI and city-level PPP. The key labor market indicators that we estimated using CHIP data differed from those reported by the NBS, with our CHIP results showing lower levels of urban employment for both men and women.

The CHIP data cover three important periods in China's transition. In the first period, 1995 to 2002, China initiated a major reform of its state-owned enterprises (SOEs) in the late 1990s, which increased the flexibility and efficiency of the economy but also caused a large number of workers to be laid off and to become unemployed. In the second period, between 2002 and 2007, China joined the WTO, which sped up its integration into

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<sup>13</sup> The 1995 survey covers 11 provinces: Beijing, Shanxi, Liaoning, Jiangsu, Anhui, Henan, Hubei, Guangdong, Sichuan, Yunnan, and Gansu. Chongqing was included in the 1995 survey as a city of Sichuan. It was separated from Sichuan and became a directly administered municipality in 1997 and was included in the 2002 survey. Four additional provinces (Shanghai, Zhejiang, Fujian, and Hunan) were included in the survey in 2007, and Shandong and Hunan were added in 2013.



the world economy. Because the different parts of China varied in terms of their exposure to trade and government policies that gave preference to some regions over others, this period was also characterized by large and growing regional imbalances. In the third period, after 2007, several major changes had a profound impact on the Chinese labor market. Perhaps most importantly, China's exports declined sharply as a result of the global financial crisis, forcing a structural change on the Chinese economy. Many observers believe that by 2013, after three decades of high growth, China had significantly lower growth potential than in the past (Li and Zhang, 2015 and Jin, 2015). This new growth trajectory has frequently been described as the "New Normal." Between 2007 and 2013, significant supply-side changes also happened, including a large increase in young college graduates and a dwindling surplus rural labor, as mentioned above.

We also made use of other aggregate statistics from various editions of the China Statistical Yearbooks, such as provincial GDP and population numbers. Also, since rural-to-urban migrants constitute a major component of the labor supply in urban China, we used information from annual surveys of migrant workers conducted by the NBS from 2008 onwards to describe the changes that have affected this important part of the labor force over time.

### **3. Labor Force Participation and Employment**

In this section, we describe the big-picture developments that have happened in the Chinese labor market between 1990 and 2010 (see Table 2.1 for summary statistics about China's entire labor force).

The census and mini-census data showed that labor force participation (LFP) rate declined from 85 percent in 1990 to 77 percent in 2010. More than 60 percent of the decline happened between 2000 and 2005 (from 83 percent to 78 percent). Despite this decline in the LFP, the number of individuals who were active in the labor force increased by 10 percent between 1990 and 2010, from 650 million to 712 million, because of population growth. Throughout this period, the labor force participation rate for women was lower than that for men and declined faster, from 80 percent in 1990 to 70 percent in 2010. For women, around 70 percent of the decline happened between 2000 and 2005. However, the CHIP data indicated that there was a sharper decline in labor force participation in urban China, from 71.4 percent in 1995 to 58.9 percent in 2010. Employment-to-population rates were also lower in urban areas, and urban areas experienced a sharper decline in employment rate since the mid-1990s. For men, the employment rate expressed as a percentage of the male adult urban population declined from 74 percent in 1995 to 61 percent in 2010. For women, the decline was from 65.2 percent to 48 percent during the same period.

There is no consensus on what caused the sharp decline in the female labor force participation rate in China, but several possible factors have been identified. First, the economic transition in urban China, especially the

change to private ownership of many SOEs in the late 1990s and early 2000s, caused a large number of women to withdraw from the labor market (Feng et al, 2015). Second, more young women than young men went to college as a result of the expansion of education opportunities, and adults in college are considered to be out of the labor force (Li et al, 2014 and Yan, 2016). Third, as household income and wealth increased, more households were able to afford to have one family member remain outside the labor market, usually the wife of the male household head (Fu et al, 2016).

**Table 2.1 Summary Statistics**

|   | 1990   | 2000   | 2005   | 2010   |
|---|--------|--------|--------|--------|
| Total labor force (million)             | 650.0  | 667.1  | 694.0  | 711.7  |
| Labor force participation rate          | 0.8500 | 0.8344 | 0.7800 | 0.7737 |
| Labor force participation rate (female) | 0.8000 | 0.7758 | 0.7100 | 0.7030 |
| Employment (million)                    | 644.0  | 643.0  | 672.0  | 690.7  |
| Share of labor force employed           | 0.9900 | 0.9640 | 0.9700 | 0.9705 |
| Employment to population rate           | 0.8484 | 0.8075 | 0.7510 | 0.7088 |
| Unemployment rate                       | 0.0100 | 0.0360 | 0.0300 | 0.0295 |
| Share educated in labor force           |        |        |        |        |
| No school                               | 0.1776 | 0.0725 | 0.0706 | 0.0334 |
| Primary                                 | 0.3542 | 0.3039 | 0.2581 | 0.2344 |
| Middle school (9 yrs)                   | 0.3249 | 0.4161 | 0.4243 | 0.4866 |
| High school (12 yrs)                    | 0.0983 | 0.1094 | 0.1669 | 0.1428 |
| Technical school (11/12 yrs)            | 0.0226 | 0.0456 |        | 0.0456 |
| College & above                         | 0.0224 | 0.0525 | 0.0799 | 0.1027 |
| Share employed by economic sector       |        |        |        |        |
| Agriculture                             | 0.7113 | 0.6438 | 0.5494 | 0.4834 |
| Manufacturing                           | 0.1177 | 0.1246 | 0.1436 | 0.1685 |
| Other industry                          | 0.0384 | 0.0435 | 0.0566 | 0.0730 |
| Share employed by occupation            |        |        |        |        |
| Managerial                              |        | 0.0167 | 0.0173 | 0.0177 |
| Professional/technical                  |        | 0.0622 | 0.0725 | 0.0741 |
| Mid-skilled (repetitive)                |        | 0.1762 | 0.2161 | 0.2498 |
| Mid-skilled (non-repetitive)            |        | 0.1000 | 0.1340 | 0.1600 |
| Low-skilled                             |        | 0.6500 | 0.5600 | 0.5000 |

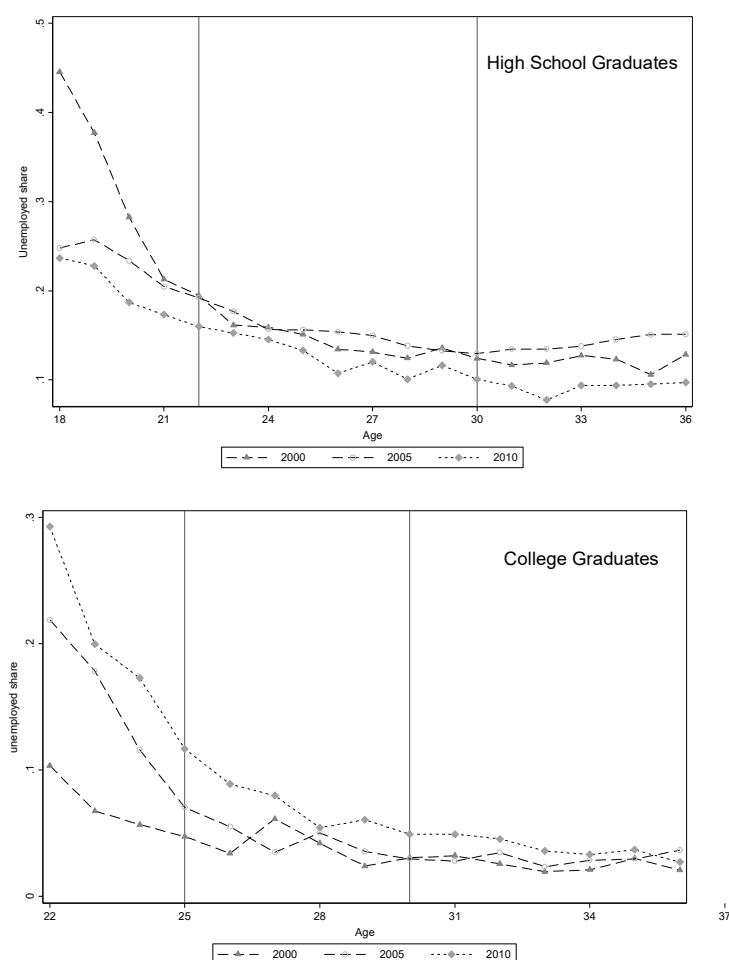
*Source:* Authors' calculations using census data for 1990, 2000, and 2005. The statistics for 2010 were calculated using the aggregate information from National Bureau of Statistics. Individuals aged between 16 and 64 are considered.

According to our estimates, the unemployment rate between 1990 and 2010 was low and stable. In other words, employment as a share of LFP was high and stable, declining only slightly (from 99 percent to 97 percent) between 1990 and 2010. These estimates are close to the results presented in Yan (2016), who also used the same CHIP data to calculate labor force

participation and employment rates, including separate calculations for rural and urban areas.

We found that unemployment rates varied very little across education and age groups, especially compared to the wide variations generally found in high-income countries. Figure 2.1 presents unemployment rates by age for workers with different educational levels estimated using random samples of the census data for 2000 and 2010 and the mini-census data of 2005. We found that, throughout this period, unemployment rates for educated workers were lower than for less-educated workers and that inexperienced workers had higher unemployment rates than experienced workers. It is worth noting that unemployment rates for young college graduates in 2005 and 2010 were significantly higher than in 2000, probably due to the rapid expansion of higher education. However, while unemployment rates were higher for young people than older workers, there was also evidence suggesting that these rates declined sharply after these individuals had been on the labor market for a few years.

**Figure 2.1: Unemployment Rates by Age and Education, 2000-2010**



**Source:** Authors' calculations based on random samples of the 2000, 2010 census data and the one percent population survey in 2005.

The Chinese labor force has become increasingly well-educated. In 1990, over half of all individuals in the labor force had only a primary school education or were illiterate. By 2010, this share had declined to 26 percent of the workforce. In the meantime, the share of individuals in the labor force with secondary or tertiary degrees increased significantly. The share of college graduates, for example, increased from 2 percent in 1990 to around 10 percent in 2010. Among the population aged 20 to 24, the share of college graduates was barely 9 percent in 2000 but had reached 25 percent by 2010.

The distribution of employment across economic activities and occupations changed significantly between 1990 and 2010. In 1990, over 70 percent of the labor force was in the agricultural sector, but by 2010, this had declined to 48 percent.<sup>14</sup> This decline happened in parallel with increasing employment in the manufacturing industry, from 12 percent of the workforce in 1990 to 17 percent in 2010. In terms of occupations, the share of workers employed in low-skilled occupations (particularly those related to farming) declined sharply during this period, while the share of those employed in mid-level occupations increased. Some analysts have claimed that the Chinese labor market has reached the stage of what has been called occupational polarization in which jobs that require a median level of skills disappear while both high-skilled and low-skilled jobs have grown. Instead, we found that China's occupational structure has not become polarized but that, on the contrary, the urbanization process has increased the number of mid-level occupations as a new urban middle class has emerged. This is consistent with World Bank (2016), which also found that China has not experienced polarization but, instead, non-routine manual jobs have declined as a result of the mechanization of agriculture.

As already pointed out, the rapid rate of urbanization is one of the most important factors influencing the Chinese labor market, but the movement from farms to factories and businesses can sometimes hide other structural trends in urban labor markets. Therefore, in the following analysis, we focus on what happened in the agricultural sector compared with the rest of the economy and also on occupational trends within the non-agricultural sector.

#### **4. Changing Occupational Structures and Demands for Skills**

For the analysis in this section, we used census data for 1990, 2000, and 2005 to document changes in the industrial and occupational structure, supplemented by the aggregate data for 2010 from the NBS when we analyzed changes in the industrial structure. Since determining the tasks done by workers in

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<sup>14</sup> These numbers are based on census data. Some other data sources showed an even lower share of employment in agriculture in those years. For instance, according the Statistical Yearbook, the share was only 36.7 percent in 2010.

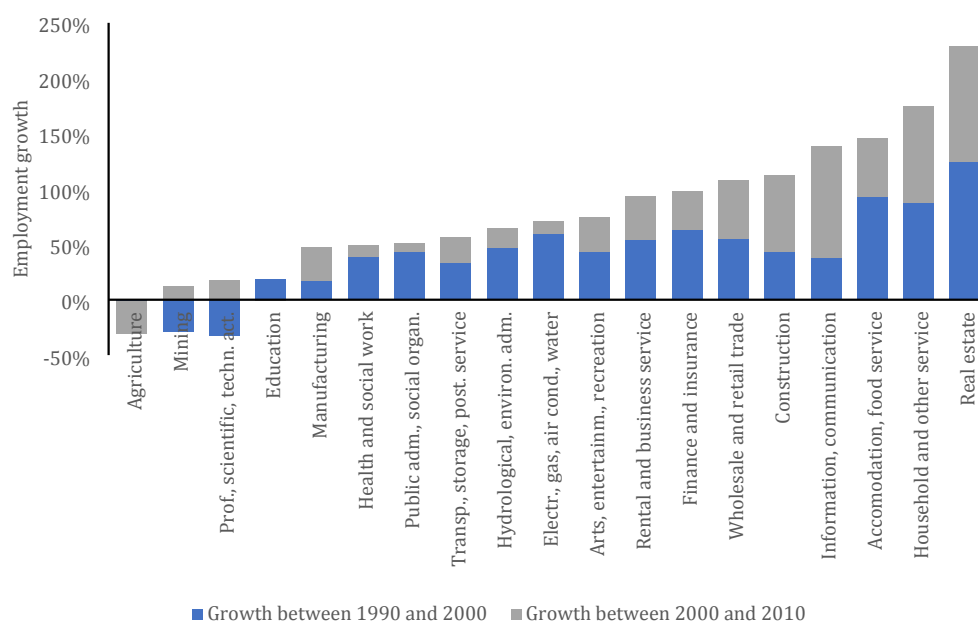
any given job is dependent on both their industry and occupation, we first consider them separately and then consider occupational changes within industries.

## Employment Growth in Different Industries

We first looked at employment growth by industry between 1990 and 2010. We calculated the number of jobs in each industry in 1990, 2000, and 2010 and then used changes in the log of industrial employment to proxy industry-specific employment growth rates. Using codebooks for the industry classifications for 1988 and 2005, we harmonized the classification of the industries for different years. We considered the two-digit level classification of 19 industries, excluding the category for “international organization” because of its limited number of observations.

We found that employment growth rates differed considerably across industries (Figure 2.2). Over the two decades, employment in the agricultural sector declined by around 30 percent, while it increased significantly in real estate, household and other services, accommodation and food services, information and communication, and construction. Employment in the real estate sector increased almost tenfold in the 20 years (which equals a 2.3 log point difference). In fact, employment in most two-digit sectors increased except for mining, professional, scientific, and technical activities, and agriculture.

**Figure 2.2: Employment Growth by Industry, 1990-2010**



Source: Authors' calculations.

A big puzzle is the decline of employment in professional, scientific, and technical services during a period of rapid technological change and globalization. One possible explanation is that there were large-scale layoffs of workers from former SOEs, which employed many professionals, during that time. This explanation is plausible because most of the decline happened between 1990 and 2000, a period of rapid restructuring. In the following decade, employment in these sectors actually grew.

Two important patterns emerged when we compared sectoral employment growth during the 1990s and during the 2000s. First, the employment growth rates in most industries differed considerably between these two decades. For example, in the information and communication industry, employment growth was much higher between 2000 and 2010 than it had been in the previous decade. The reverse was true for other industries such as the utility industry. Second, despite these noteworthy differences, the industries that grew fastest in the earlier decade continued to do so in the next one.<sup>15</sup>

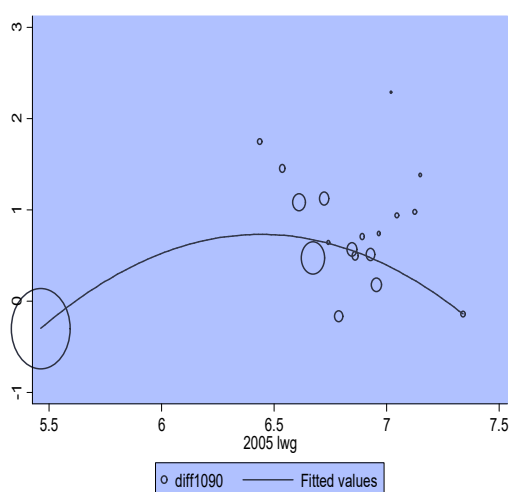
Next, we looked at earnings in each industry in the 2005 census data. Ideally, we would have used data on average industry-specific earnings for 1990 for this exercise, but these data were unfortunately unavailable. Under the plausible assumption that the ordering of average earnings by industry does not change significantly over time, we believed that our results would be robust to the choice of year.<sup>16</sup> Figure 2.3 shows this ordering for all industries, including observations for both rural and urban China and using the size of each bubble to show the size of the related industry. In the figure, a fitted quadratic line indicates an inverted U-shape between industrial employment growth and earnings. The relationship between employment growth and earnings is driven by one predominant development, which is that, over the observation period, the employment share of the agricultural sector declined significantly and average earnings in the sector were significantly lower than those in other industries. Thus, the declining importance of agriculture is the key change that happened during the observation period and is, therefore, a crucial factor for understanding the performance of the Chinese economy during that period.

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<sup>15</sup> Running a regression of industry-specific employment growths in the 2000s on those in 1990s produced a coefficient of 0.57, the standard error being 0.17. The R-squared of this simple regression was around 40 percent, which means that 40 percent of the variation in industry-specific employment growth rates from 2000 to 2010 can be explained by industry-specific employment growth rates from 1990 to 2000.

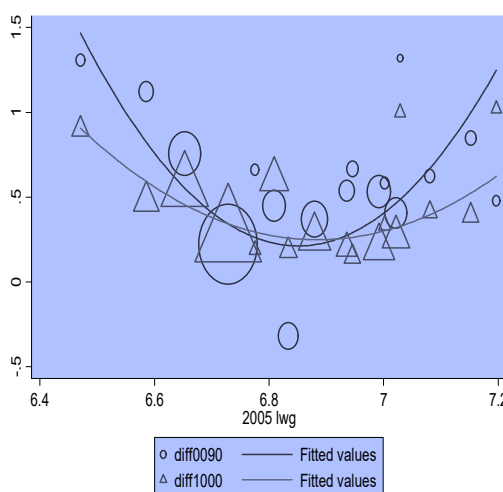
<sup>16</sup> Using data from the China Statistical Yearbook published in 2015 and 2004, we calculate the correlation between mean earnings by industry in 2014 and in 2003 which is 0.89. This suggests that the ordering of industry mean earnings does not change much over time. In addition, we drew a scatter plot that showed that any changes in ordering in wage levels between 2003 and 2014 happened mainly in neighboring (in terms of wage levels) industries. These patterns suggested to us that using 2005 wages rather than those of the initial year would not change our conclusion.

**Figure 2.3: Industry Employment Growth by IncomeLevel, 1990-2010**



Source: Authors' calculations.

**Figure 2.4: Industry Employment Growth by Income Level, 1990-2000 and 2000-2010**



Source: Authors' calculations. Note: Urban, agricultural, and professional industries excluded

As more and more of the workers moved out of the agricultural sector, the differences in employment growth between the non-agricultural industries increased. Therefore, we redrew the graph, this time focusing on urban areas and excluding agriculture, and calculated employment growth for each industry and each decade (1990 to 2000 and 2000 to 2010). Now a clear U-shaped relationship between employment growth and earnings could be observed (Figure 2.4). Within the non-agricultural sectors, middle-wage industries (that is, industries concentrated in the middle of the industrial wage distribution, such as manufacturing) experienced the lowest employment growth during the observation period, while the highest paying sectors (such as the IT and finance industries) and the lowest paying industries (such as household services) grew faster. When comparing the results for the 1990s with those for the 2000s in Figure 2.4, the U-shape pattern seems more pronounced in the 1990s. This may have been caused by the radical reforms of the mid- and late-1990s when many workers were laid off from inefficient SOEs.

It is worth mentioning that, although some middle-wage industries grew slowly, they contributed in a major way to China's employment growth by absorbing new workers. Because manufacturing and other median-wage industries accounted for large percentages of employment, even low growth in those industries meant the creation of a significant number of new jobs. In contrast, fast-growing industries such as IT, services, and finance created a relatively small number of new jobs because they started small. It is also worth mentioning that our results here are consistent with World Bank (2016). Although that report did not observe any polarization across the entire economy, it did suggest that China's non-agricultural sector has been polarizing and that the increase in routine labor can be explained by the

mechanization of agriculture.

### Changes in Occupational Structure

We harmonized occupational classifications before proceeding with the analysis. China's occupational classification scheme allows disaggregation at the three-digit level but only for the 1990 and 2000 census data. The 2005 mini-census data only allowed us to break down the occupational classification to the two-digit level. Because a new national standard of occupational coding was released in 1999 (GB/T 6565-1999, replacing GB/T 6565-1986), the coding of occupations is different between the two censuses data sets for 1990 and 2000. Therefore, in order to investigate changes in the occupational structure over time, we first harmonized the coding of occupations at the three-digit level. Next, for each occupation, we calculated the change in the log of employment between 1990 and 2000. Then we plotted occupation-specific employment changes against the average educational level of workers in each occupation. We used the average educational level by occupation to represent the "quality" of an occupation because educational level is highly correlated with earnings, but information on earnings was not available at the three-digit occupational level.

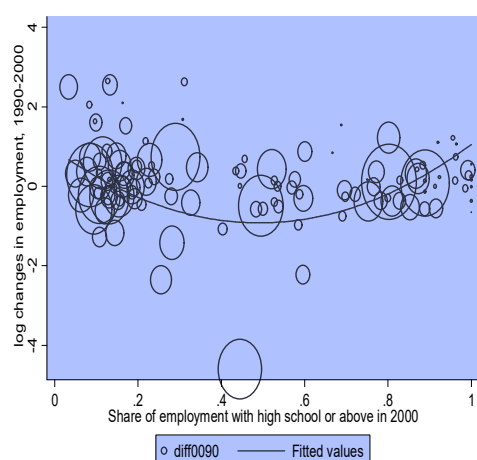
We found another U-shaped relationship when examining occupations and education by occupation. Figure 2.5 shows the changes in employment in each occupation against the changes in education in each occupation between 1990 and 2000 for occupations defined at three-digit level. The average educational level of each occupation was represented by the share of workers who were high school graduates or even had some tertiary education among all workers in any given occupation.<sup>17</sup> At both the upper and lower ends of the occupation spectrum, employment growth tended to be positive, whereas average employment growth in mid-skilled occupations was negative. This pattern is consistent with the occupational polarization hypothesis in which jobs that require a median level of skills disappear, while both high-skilled and low-skilled jobs grow. It has been observed in the United States and a number of other developed economies (Autor et al, 2006; Goos and Manning 2007; and Goos et al, 2014).<sup>18</sup> The occupational polarization pattern is more evident in Figure 2.6, where we grouped the occupations into 10 categories according to the share of workers with at least a high school degree in each and calculated the average employment growth for each group.

<sup>17</sup> In an alternative specification not reported here, we used the share of college graduates to reflect the human capital level of each occupation and observed a similar pattern.

<sup>18</sup> In contrast with most studies on the topic of polarization, we ranked the different occupations according to the education levels of workers instead of their earnings.

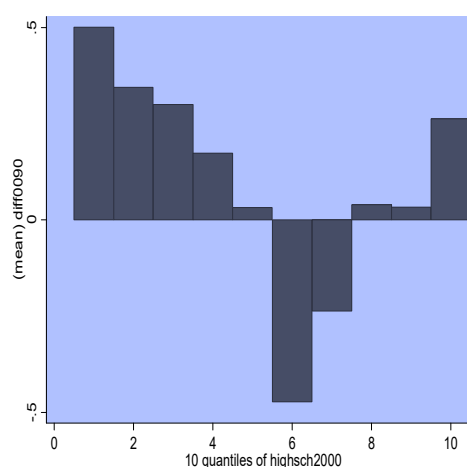


**Figure 2.5: Three-digit Occupational Growth by Human Capital Level, 1990-2000**



Source: Authors' calculations.

**Figure 2.6: Distribution of Employment Growth by Human Capital Level, 1990-2000**



Source: Authors' calculations based on the (mini) census data for 1990 and 2000.

We reached similar results for urban China, but in rural China, the polarization pattern was less obvious. In rural areas, employment declined more than in urban areas in occupations with a large number of well-educated workers. Considering the fact that there are very few college graduates in rural areas, even the most education-intensive occupations in those areas might only be comparable with mid-skill jobs in urban areas.

Finally, when we considered the two-digit occupational categories, we examined the structural changes in the occupation-specific employment structure between 1990 and 2005 and ranked occupations according to their average earnings. Again, we observed occupational polarization, though it was more pronounced between 1990 and 2000 than from 2000 to 2005 for two reasons.<sup>19</sup> First, the earlier period consisted of 10 years whereas the later period consisted of only five years. Second, as mentioned above, there was dramatic restructuring of SOEs during the earlier period, causing many SOE workers to have to move to other occupations.

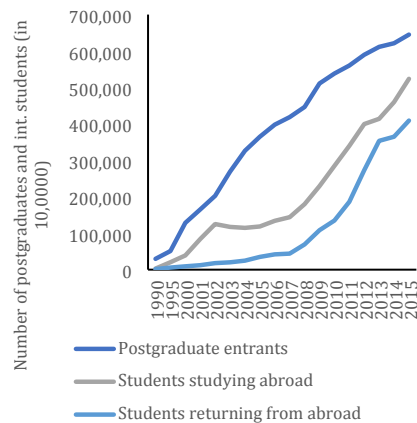
## The Growing Supply of Educated Labor

In response to a rising demand for skilled labor, the labor supply of educated workers has also increased. From 1990 to 2015, China's GDP grew at an annual rate of 10 percent, and private and public expenditures on education grew even more rapidly. In the mid-1990s, government expenditures on education amounted to less than 2.5 percent of GDP, but by 2011, they had

<sup>19</sup> These results are not reported here because of a lack of space.

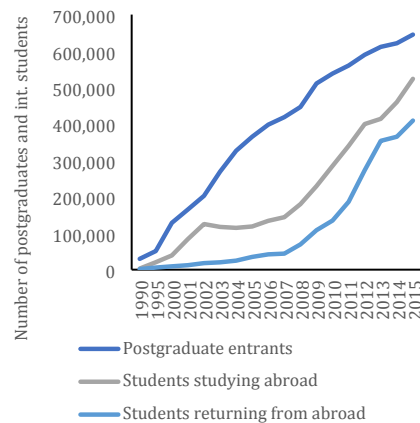
reached 4 percent of GDP. Figure 2.7 shows the number of graduates of the various educational levels for all years between 1990 and 2015. During this period and especially in the most recent decade, the number of graduates with secondary and tertiary degrees has increased tremendously. In 1990, 0.6 million students graduated from higher education institutions (HEIs), but by 2015, the number of HEI graduates had reached 6.8 million. The increase in the number of high school graduates was also dramatic, from 2.3 million in 1990 to 8.4 million in 2008, but the number leveled out after 2008. There are no available statistics for the number of graduates from secondary vocational schools before 2005, but the data for more recent years suggest that the number of vocational school graduates increased significantly as well, at least until around 2013.

**Figure 2.7: Number of Graduates for Different Levels of Education**



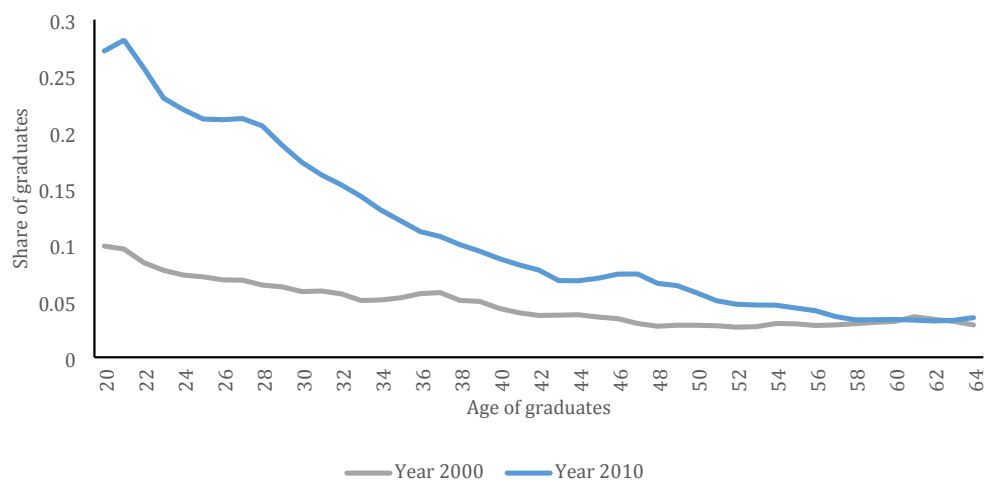
*Source:* Authors' calculations based on China Statistical Yearbook, 2016.  
*Note:* For regular HEIs, undergraduates only.

**Figure 2.8: Number of Postgraduates and Students Studying Abroad, 1990-2015**

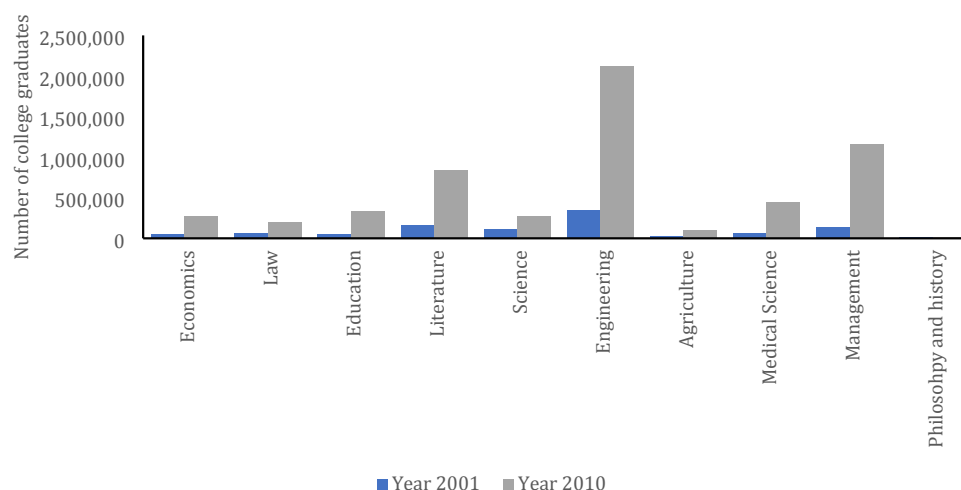


*Source:* Authors' calculations based on China Statistical Yearbook, 2016.

More individuals are going beyond college education and embarking on graduate studies. There was a tremendous expansion in postgraduate education after 2000 in China (Figure 2.8). The number of new graduate students was around 30,000 in 1990, but the number had increased to around 130,000 in 2000 and to 650,000 in 2015. The number of Chinese students seeking to study abroad also increased. Interestingly, the number of graduates returning from abroad also increased significantly after 2007, possibly due to the global financial crisis. Figure 2.9 shows the share of college-educated graduates in the labor force by age groups in both 2000 and 2010. In both years, younger generations attained higher educational levels than older cohorts. In 2000, for example, around 3 percent of those aged 60 to 64 had a college degree compared with around 10 percent of those aged 20 to 24. The educational level of the population was significantly higher by 2010, and the average difference in educational attainment between generations was even more pronounced. According to data from the 2010 census, in that year 30 percent of people aged 20 to 24 had a college degree.

**Figure 2.9: Share of Tertiary Education Graduates by Age, 2000 and 2010**

Source: Authors' calculations based on census data for 2000 and 2010 from the National Bureau of Statistics.

**Figure 2.10: Number of College Graduates by Field of Study, 2001-2010**

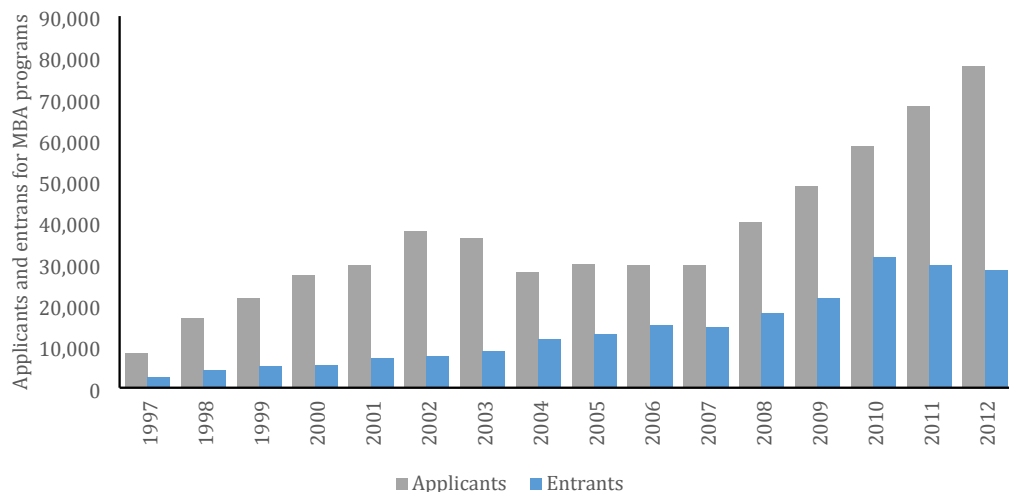
Source: Authors' calculations based on the China Statistical Yearbook, 2002 and 2011.

Among college graduates, the number of graduates in every major increased between 2000 and 2010, and the distribution of graduates across fields changed significantly (Figure 2.10). Engineering, management, and language were the top three majors in terms of growth in numbers of graduates. The large increase in the number of engineering graduates was probably caused by the increased demand for workers able to operate complicated machines. The significant increase in the number of graduates in literature may reflect the fact that demand for foreign language experts increased after China entered the WTO. The increase in the number of management graduates is consistent with the hypothesis that technological change tends to increase demand for managerial jobs.

To further illustrate the increased number of management graduates,

we examined the number of students in Masters of Business Administration (MBA) programs. Figure 2.11 shows the number of applicants for MBA programs and the number of new entrants into MBA programs between 1997 and 2010. Despite annual fluctuations, the numbers of both applicants and entrants increased significantly over that time period. In 1997, there were 2,500 newly admitted MBA students, but by 2010, this number had reached 31,500. This may have been caused by the increasing demand for managerial jobs as the Chinese economy grew or it might have been an illustration of how technological change induces changes in occupation-specific labor demand. The skills taught in MBA programs tend to be non-routine cognitive skills, such as interpersonal communication, strategic decision-making, and problem solving, which are exactly the skills that have been more in demand as computers have been increasingly able to perform routine tasks.

**Figure 2.11: Numbers of Applications for and Entrants to MBA Education, 1997-2012**



Source: Authors' calculations based on <https://club.1688.com/article/36814472.htm>.

### Rural-to-Urban Migration and Labor Mobility across Regions

As stated earlier, the large number of migrants within China, especially those who have moved from rural to urban areas in the form of “surplus” labor, have often been seen as one of the major contributors to China’s high economic growth. By 2008, the number of rural migrant workers had reached 225 million, and by 2015, this number had increased steadily to 277 million. However, as early as 2003, concern was growing among economists that China might be running out of surplus labor and that this would threaten the competitiveness of the country’s export sector and the sustainability of its high economic growth (Knight et al, 2011 and Zhang et al, 2011). This continued concern has stemmed from an observed slowdown in the growth rate of the number of migrant workers, changing migration patterns, a

compositional change in the migrant workforce, and sharp wage increases for migrant workers. In the analysis in the rest of this section, we used data from the NBS's Migrant Monitoring Survey to measure these recent trends.

Migration from rural to urban areas continued to be substantial during the 2000s (Table 2.2). In 2008, the number of migrant workers increased by 1.9 percent and in 2009 by 5.4 percent. In subsequent years, these rates slowed, falling to 1.3 percent in 2015. We considered two separate groups of migrants—those who moved outside townships and those who moved within them (see Figure 2.12). Between 2014 and 2015, the growth rate in the number of out-of-township migrants was only 0.5 percent. Correspondingly, the share of inter-provincial migrants (those who moved to a province other than the province of their hukou registration) declined from 51 percent in 2009 to 46 percent in 2015. The largest declines in the share of people leaving their province of origin were in the central provinces (8 percentage points) followed by the western provinces. This evidence indicates that rural-to-urban migrant workers in inland cities had become reluctant to move to coastal cities.

**Table 2.2: Summary Statistics for Migrant Workers, 2005-2015**

|                                      | 2005 | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  |
|--------------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Number of migrant workers (millions) |      | 225.4 | 229.8 | 242.2 | 252.8 | 262.6 | 268.9 | 274.0 | 277.5 |
| Inter-provincial: Total (%)          |      |       | 51.2  |       |       |       |       |       | 45.9  |
| Eastern                              |      |       | 20.4  |       |       |       |       |       | 17.3  |
| Central                              |      |       | 69.4  |       |       |       |       |       | 61.1  |
| Western                              |      |       | 59.1  |       |       |       |       |       | 53.5  |
| Age group (%)                        |      |       |       |       |       |       |       |       |       |
| 16-20                                |      | 10.7  | 8.5   | 6.5   | 6.3   | 4.9   | 4.7   | 3.5   | 3.7   |
| 21-30                                |      | 35.3  | 35.8  | 35.9  | 32.7  | 31.9  | 30.8  | 30.2  | 29.2  |
| 31-40                                |      | 24    | 23.6  | 23.5  | 22.7  | 22.5  | 22.9  | 22.8  | 22.3  |
| 41-50                                |      | 18.6  | 19.9  | 21.2  | 24    | 25.6  | 26.4  | 26.4  | 26.9  |
| above 50                             |      | 11.4  | 12.2  | 12.9  | 14.3  | 15.1  | 15.2  | 17.1  | 17.9  |
| Education levels (%)                 |      |       |       |       |       |       |       |       |       |
| Primary & below                      | 19.6 |       |       |       |       | 15.8  |       | 15.9  | 15.1  |
| Middle school                        | 62.5 |       |       |       |       | 60.5  |       | 60.3  | 59.7  |
| High school                          | 15.9 |       |       |       |       | 13.3  |       | 16.5  | 16.9  |
| Technical school                     |      |       |       |       |       | 4.7   |       |       |       |
| College & above                      | 1.9  |       |       |       |       | 5.7   |       | 7.3   | 8.3   |

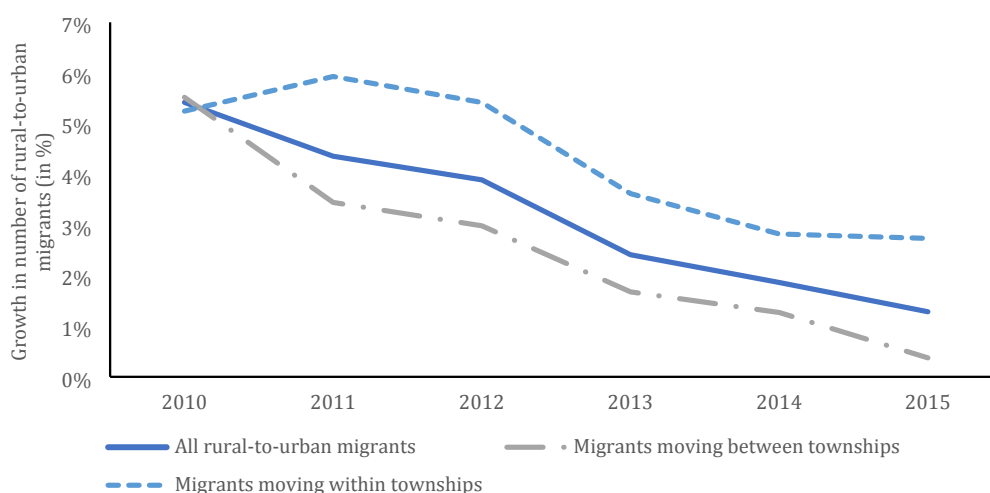
*Source:* Authors' calculations based on statistics from the monitoring survey of migrant workers released by the National Bureau of Statistics.

Between 2008 and 2015, the typical demographic profile of migrant workers also changed significantly. The age of the average migrant worker increased, from 34 in 2008 to 38.6 in 2015. Over the same period, the share

of migrant workers aged 16 to 20 decreased from 11 percent to 4 percent, and the share of those aged over 40 increased from 30 percent to 44 percent. As of 2015, migrant workers were still generally less educated than the urban labor force, but their education levels had increased rapidly. By 2015, one quarter of rural-to-urban migrants had at least a high school degree, and 8.3 percent of them had a college degree.

The wages of migrant workers had increased significantly as well (see Table 2.3). From 2009 to 2014, the wages of migrant workers in the manufacturing industry increased by 82 percent. Meanwhile, the wages of non-migrant workers in the same industry had grown by only 64 percent. Migrants in other sectors also experienced higher wage growth than their non-migrant counterparts in the same industries. This may have been due to the fact that migrants' wages were initially extremely low.

**Figure 2.12: Growth in the Number of Rural-to-Urban Migrants, 2010-2015**



*Source:* Authors' calculations based on the NBS report on the national monitoring survey on rural migrants.

**Table 2.3: Monthly Earnings of Migrant Workers in Selected Industries, 2009-2015**

|                                | 2009  | 2014  | 2015  |
|--------------------------------|-------|-------|-------|
| Transportation                 | 1,671 | 2,824 | 2,991 |
| Mining                         | 1,640 |       |       |
| Construction                   | 1,625 | 2,816 | 2,950 |
| Accommodation and food service | 1,264 | 2,195 | 2,292 |
| Household service              | 1,276 | 2,166 | 2,261 |
| Manufacturing                  | 1,331 | 2,423 | 2,500 |

*Source:* Authors' calculations based on statistics from the monitoring survey of migrant workers released by the National Bureau of Statistics. Note: All earnings in 2009 prices.

Although growth in the number of rural-to-urban migrants had almost levelled off by 2015, it continues to be of the utmost importance for analysts

and policymakers to understand the factors that influenced that massive and unprecedented migration flow. The literature identifies several major underlying reasons, including the widening gap between rural and urban income (which was mainly caused by the booming export-led economy in coastal areas) and the easing of migration restrictions (Wang, 2005 and Cai, 2000). Some have speculated that rural-to-urban migration also might have been fueled by the huge regional gaps in the availability of public services, particularly in education and health care (Li and Luo, 2007). However, little systematic research has been done on how such gaps might have affected the decision of rural residents to migrate.

In the 1990s, workers from rural areas who migrated to find work in urban centers usually left their children behind, often in the care of their own parents, because they knew the hukou registration system would make it difficult for them to access healthcare, education, and other services in urban areas. This led to the widely discussed phenomenon of “left-behind children.” While this phenomenon continues to exist, a growing share of migrant workers have been accompanied by their children. According to Duan and Yang (2008), in 2005 there were 40 million left-behind children aged 15 or under, while approximately 18 million children of the same ages accompanied their migrant parents to the cities. Using a migrant survey conducted in 15 cities in 2008, Meng and Yamauchi (2015) found that around 57 percent of children under 15 were left behind in rural villages, while the remaining 43 percent accompanied their parents to cities. More recent research has shown that the number of children under 15 who migrated with their parents had risen to approximately 25 million by 2010, and among them approximately 15 million were at the age of compulsory schooling (6 to 14 years old) (All-China Women’s Federation, 2013).<sup>20</sup> As more and more rural children relocate with their parents, it is important to consider the non-monetary factors that influence the decisions made by rural residents whether or not to migrate, such as the educational opportunities and health of their children.

Despite the continuing though slowing flow of migration to urban areas, China is still a developing country, with nearly half of its population residing in rural areas. If China continues to grow until 80 percent of its population lives in urban areas as is the case in developed countries, over 300 million people who are still rural residents today will have moved to urban areas permanently. Meanwhile, the vast majority of those who have already migrated to cities are not well integrated into urban society because China’s household registration system means that they cannot benefit from

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<sup>20</sup> Wu and Zhang (2015) also documented an increasing number of children migrating with their parents. The authors showed that, in 1990, only 1.22 percent of all children were migrants, but this rose to 2.19 percent in 2000 and 3.64 percent in 2005. Children from rural areas accounted for the majority of migrant children. Similarly, focusing on a nationally representative survey conducted in 2010, Ren and Treiman (2016) found that 7.3 percent of children aged 10 to 15 were migrants.

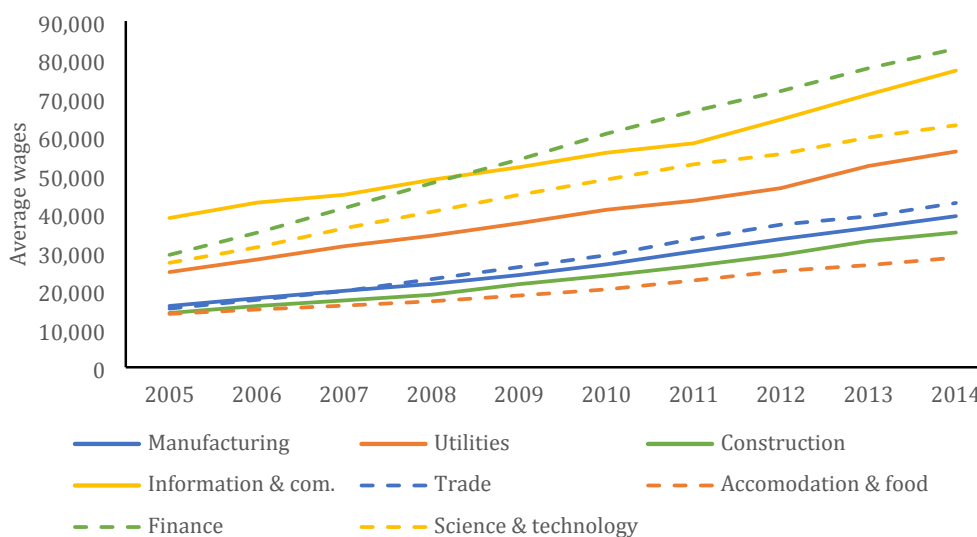
social services in their new communities. However, it is hard to speculate about future migration rates because the pace of rural-to-urban migration will depend heavily on what policies the government adopts that might influence rural migrants, ranging from the regulation of the labor market to the provision of public services (like education) and affordable housing.

## 5. Wage Growth and Wage Inequality

Between 2005 and 2014, the living standards of practically all workers in China increased as wages rose dramatically across the board.

Figure 2.13 shows annual wages in selected industries between those two years. Wage levels increased significantly in all industries, but growth rates in various industries differed considerably. Wage growth was highest in the finance industry, which resulted in finance surpassing the IT and telecommunications industries as the industry with the highest average wage from 2009 onwards. By 2014, the telecommunications industry ranked second followed by science and technology services. On the other end of the spectrum, workers in the construction and service industries had the lowest wages. In this section, we document changing wage levels between 1995 and 2013 in more detail using CHIP data, focusing mainly on the urban samples as most wage-paying jobs were in urban areas.

**Figure 2.13: Average Wages in Selected Industries, 2005-2014**



Source: Authors' calculations based on data from the National Bureau of Statistics.

### 2.1. Wage Growth

Wage levels increased significantly after 1995 at rates averaging around 9 percent annually but declined after 2007 (Table 2.4). To provide more detail



and context, Table 2.5 presents wage growth for each decile of the wage distribution and shows that the patterns vary significantly among the deciles. In the period 1995 to 2002, wage growth was much higher in the higher deciles than in the lower deciles, but in the following years, the differences between deciles shrank considerably, especially after 2007.

We also observed differential patterns in wage growth for groups of workers with different characteristics. For instance, younger workers generally had higher wage growth than older workers (although workers aged 16 to 25 were an exception). This led to a reduction in the wage gap between workers of different ages. With regard to education, better educated workers experienced higher wage growth than less educated workers during all three sub-periods that we analyzed here (1995 to 2002, 2002 to 2007, and 2007 to 2013). The difference in wage growth rates between better educated and less educated workers was much larger between 1995 and 2002 than it was later. However, even between 2007 and 2013 when many young college graduates entered the labor market, college-educated workers as a whole experienced higher wage growth than non-college-educated workers.

**Table 2.4: Wages and Wage Growth for Different Groups, 1995-2013**

|  | <i>Wages</i> |             |             |             | <i>Annual Growth</i> |                      |                      |                      |
|--|--------------|-------------|-------------|-------------|----------------------|----------------------|----------------------|----------------------|
|  | <i>1990</i>  | <i>2002</i> | <i>2007</i> | <i>2013</i> | <i>1995<br/>2002</i> | <i>2002<br/>2007</i> | <i>2007<br/>2013</i> | <i>2002<br/>2013</i> |
| Total  | 9,055        | 16,578      | 26,965      | 43,125      | 9.02                 | 10.22                | 8.14                 | 9.08                 |
| Common people  | 8,528        | 14,819      |             | 38,971      | 8.21                 |                      |                      | 9.19                 |
| Party members  | 10,641       | 20,726      |             | 57,558      | 9.99                 |                      |                      | 9.73                 |
| 16-25  | 6,102        | 11,456      | 18,081      | 28,335      | 9.42                 | 9.56                 | 7.78                 | 8.58                 |
| 26-35  | 8,024        | 15,369      | 25,972      | 43,624      | 9.73                 | 11.06                | 9.03                 | 9.95                 |
| 36-45  | 9,567        | 16,872      | 27,498      | 45,744      | 8.44                 | 10.26                | 8.85                 | 9.49                 |
| 46-55  | 10,542       | 18,037      | 28,608      | 44,124      | 7.98                 | 9.66                 | 7.49                 | 8.47                 |
| 56-60  | 11,716       | 19,010      | 28,673      | 40,383      | 7.16                 | 8.57                 | 5.87                 | 7.09                 |
| Elementary school or below                           | 7,825        | 11,277      | 16,721      | 23,715      | 5.36                 | 8.20                 | 6.00                 | 6.99                 |
| Junior middle school                                 | 8,496        | 12,461      | 18,962      | 29,659      | 5.62                 | 8.76                 | 7.74                 | 8.20                 |
| Senior middle school                                 | 8,883        | 15,494      | 23,134      | 36,489      | 8.27                 | 8.35                 | 7.89                 | 8.10                 |
| Polytechnic college                                  | 9,883        | 19,288      | 29,852      | 47,142      | 10.02                | 9.13                 | 7.91                 | 8.46                 |
| Undergraduate or above                               | 11,260       | 24,762      | 39,391      | 64,980      | 11.92                | 9.73                 | 8.70                 | 9.17                 |
| Eastern Region                                       | 10,969       | 18,930      | 35,587      | 50,824      | 8.11                 | 13.46                | 6.12                 | 9.39                 |
| Middle Region  | 7,499        | 13,919      | 22,589      | 36,281      | 9.24                 | 10.17                | 8.22                 | 9.10                 |
| Western Region                                       | 8,422        | 15,090      | 21,582      | 34,986      | 8.69                 | 7.42                 | 8.38                 | 7.94                 |
| Agriculture, forestry, animal husbandry, and fishery | 9,898        | 16,574      | 24,794      | 36,854      | 7.64                 | 8.39                 | 6.83                 | 7.54                 |
| Mining (geological survey and prospecting)           | 9,440        | 12,496      | 28,921      | 48,602      | 4.09                 | 18.27                | 9.04                 | 13.14                |
| Manufacturing(industry)                              | 8,640        | 14,320      | 23,506      | 38,407      | 7.49                 | 10.42                | 8.53                 | 9.38                 |

|  | <i>Wages</i> |             |             |             | <i>Annual Growth</i> |                      |                      |                      |
|--|--------------|-------------|-------------|-------------|----------------------|----------------------|----------------------|----------------------|
|  | <i>1990</i>  | <i>2002</i> | <i>2007</i> | <i>2013</i> | <i>1995<br/>2002</i> | <i>2002<br/>2007</i> | <i>2007<br/>2013</i> | <i>2002<br/>2013</i> |
| Construction   | 9,687        | 17,125      | 25,958      | 40,075      | 8.48                 | 8.67                 | 7.51                 | 8.04                 |
| Transportation, storage and post                               | 9,642        | 17,464      | 26,828      | 46,531      | 8.86                 | 8.97                 | 9.61                 | 9.32                 |
| Finance, insurance   | 10,605       | 20,802      | 31,414      | 66,980      | 10.10                | 8.59                 | 13.45                | 11.22                |
| Real estate  |              | 23,503      | 30,655      | 47,046      |                      | 5.46                 | 7.40                 | 6.51                 |
| Scientific research and technical services                     | 9,754        | 12,147      | 38,258      | 63,047      | 3.18                 | 25.79                | 8.68                 | 16.15                |
| Education  | 9,747        | 21,886      | 33,195      | 52,597      | 12.25                | 8.69                 | 7.97                 | 8.30                 |
| Health, social work, culture, sports, and entertainment        | 9,238        | 20,598      | 29,127      | 46,164      | 12.14                | 7.17                 | 7.98                 | 7.61                 |
| Public management, social securities, and social organizations | 10,999       | 19,847      | 32,366      | 53,228      | 8.80                 | 10.28                | 8.64                 | 9.38                 |
| Government, public institutions, and state holding enterprises | 9,317        | 16,262      | 29,633      | 52,510      | 8.28                 | 12.75                | 10.00                | 11.24                |
| Collective enterprises   | 7,447        | 11,544      | 21,622      | 34,539      | 6.46                 | 13.37                | 8.12                 | 10.48                |
| Sino-foreign joint venture                                     | 12,386       | 19,874      | 26,026      | 61,060      | 6.99                 | 5.54                 | 15.27                | 10.74                |
| Individual or private enterprises                              | 9,456        | 11,642      | 17,410      | 33,521      | 3.02                 | 8.38                 | 11.54                | 10.09                |
| Others   | 8,269        | 18,665      |             | 28,087      | 12.33                |                      |                      | 3.78                 |
| Head of institution or institution                             | 11,071       | 23,468      | 37,872      | 58,423      | 11.33                | 10.04                | 7.49                 | 8.64                 |
| Professional or technical worker                               | 10,083       | 20,585      | 33,401      | 56,533      | 10.73                | 10.16                | 9.17                 | 9.62                 |
| Staff and related personnel                                    | 8,669        | 17,164      | 28,503      | 48,648      | 10.25                | 10.68                | 9.32                 | 9.93                 |
| Skilled worker   | 8,855        | 14,964      | 21,628      | 36,955      | 7.78                 | 7.65                 | 9.34                 | 8.57                 |
| Unskilled worker   | 7,554        | 11,196      | 18,100      | 31,545      | 5.78                 | 10.08                | 9.70                 | 9.87                 |
| Others   | 7,378        | 11,556      | 21,729      | 36,617      | 6.62                 | 13.46                | 9.09                 | 11.05                |
| Permanent staff  | 9,400        | 18,865      |             | 57,301      | 10.46                |                      |                      | 10.63                |
| Long-term contract   | 8,078        | 16,128      |             | 48,938      | 10.38                |                      |                      | 10.62                |
| Short-term or temporary contract                               | 7,061        | 13,807      |             | 30,950      | 10.05                |                      |                      | 7.61                 |
| Without contract or others                                     | 8,690        | 11,203      |             | 27,067      | 3.69                 |                      |                      | 8.35                 |

*Source:* Authors' calculations based on CHIP 1995, 2002, 2007, and 2013.

*Note:* The wages have been adjusted by spatial prices and are based on 2013.

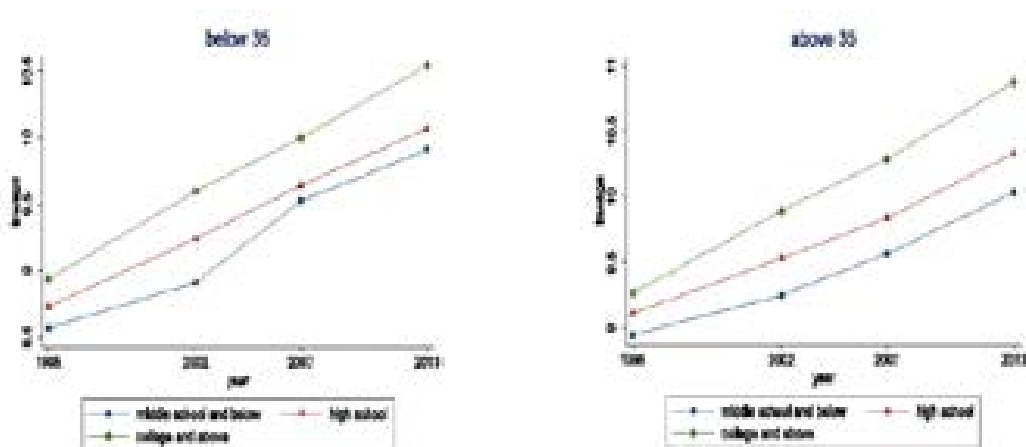
**Table 2.5: Wages and Wage Growth by Wage Distribution Deciles, 1995-2013**

| Decile | Wages  |        |        |         | Annual Growth |               |               |               |
|--------|--------|--------|--------|---------|---------------|---------------|---------------|---------------|
|        | 1995   | 2002   | 2007   | 2013    | 1995<br>-2002 | 2002<br>-2007 | 2007<br>-2013 | 2002<br>-2013 |
| 0-10   | 2,764  | 3,891  | 6,481  | 7,789   | 5.01          | 10.74         | 3.11          | 6.51          |
| 10-20  | 4,699  | 6,996  | 10,628 | 16,363  | 5.85          | 8.72          | 7.46          | 8.03          |
| 20-30  | 5,812  | 9,005  | 13,713 | 21,639  | 6.46          | 8.78          | 7.90          | 8.30          |
| 30-40  | 6,789  | 11,081 | 17,017 | 26,625  | 7.25          | 8.96          | 7.75          | 8.30          |
| 40-50  | 7,645  | 13,138 | 20,368 | 31,763  | 8.04          | 9.16          | 7.69          | 8.36          |
| 50-60  | 8,564  | 15,434 | 23,847 | 37,827  | 8.78          | 9.09          | 7.99          | 8.49          |
| 60-70  | 9,644  | 17,825 | 28,199 | 45,270  | 9.17          | 9.61          | 8.21          | 8.84          |
| 70-80  | 10,960 | 20,919 | 33,811 | 55,305  | 9.67          | 10.08         | 8.55          | 9.24          |
| 80-90  | 12,949 | 25,789 | 42,977 | 71,257  | 10.34         | 10.75         | 8.79          | 9.68          |
| 90-100 | 20,743 | 41,773 | 72,653 | 117,514 | 10.52         | 11.70         | 8.34          | 9.86          |

Source: Authors' calculations based on CHIP 1995, 2002, 2007, and 2013.

Note: The wages have been adjusted by spatial prices and are based on 2013.

Wage growth also changed over time and across regions. From 2002 to 2007, coastal regions experienced annual wage growth of 13.5 percent, while wages in western regions only grew at a rate of 7.4 percent annually. This was probably the result of the increased export activity in coastal cities after China entered the WTO and the inability of the labor force to move easily between regions (in spite of the massive influx of migrant workers to coastal cities that had taken place in the first years of the new millennium). From 2007 to 2013, a reverse pattern was evident in that wage levels grew by only 6 percent annually in the eastern regions, 2 percent less than in the middle and western regions. Understanding the evolution of regional wage gaps is crucial to understanding the changes in the overall wage structure during recent years and deserves to be analyzed in more detail in the future.

**Figure 2.14: Wage Growth by Education and Age Group, 1995-2013**

Source: Authors' calculations based on CHIP 1995, 2002, 2007, and 2013.

The evolution of wages by region reflected the structural changes that were happening in the Chinese economy between 1995 and 2013. This in turn was reflected in the industrial composition of the work force and the differences in wage growth by industry. As stated earlier, the data clearly showed that in recent years jobs with advanced skill requirements (such as those in the finance sector) have higher wage growth than other jobs. As labor-intensive industries have moved from coastal to inland regions, lagging areas have been catching up and showing faster GDP growth in recent years, which might be one explanation for the accelerating wage growth in the middle and western regions during the most recent period.

We looked first at the evolution of wages by educational levels for different age groups (Figure 2.14). For workers over 35, the wage gap between different educational levels increased between 1995 and 2007, after which the wage gap between educational levels grew more slowly but remained high. When we looked only at workers aged 35 and younger, the wage gap between different educational levels increased between 1995 and 2002. After 2002, the wage gaps between middle school graduates and high school graduates declined, but the wages of college graduates relative to high school graduates did not change much. As education plays an important role in determining wages, we will revisit the returns to education in section 6.3.

When we looked at the wage gaps between regions for different educational levels, another interesting pattern emerged (see Figure 2.15). For low-educated workers, the wage gap between regions declined significantly after the late 1990s, especially in the eastern and central provinces. However, for better-educated workers (high school and college graduates), the wage gap between the eastern and central regions widened considerably after 2002 and remained high even after 2007. This finding is consistent with the evidence provided by Whalley and Xing (2014), who showed that the returns to education increased significantly in coastal cities after 2002. It also is consistent with the finding of Luo and Xing (2016) that less educated workers tend to be more responsive to local shifts in demand than better educated workers.

To document how different factors contributed to China's rapid wage growth, we used the Oaxaca decomposition statistical method to distinguish between the proportion of wage growth accounted for by differences in the level of workers' endowments (the so-called "endowment effect") and those accounted for by differences in the returns to these endowments (the "coefficients effect"). reports the results of this analysis and shows that education has played an important role in wage growth in China. First, increases in educational levels explained 4 to 6 percent of the wage growth in two out of three periods that we studied. Second, increased returns to education explained 24 percent of the wage growth in the first period, more than 66 percent in the second, and 28 percent in the third. These results suggest that education has been a major contributor to China's sharply increased wage levels.

**Table 2.6: Oaxaca Decomposition of Wage Growth, 1995-2013**

| <i>1995-2002</i> | <i>Endowments</i> | <i>Percent</i> | <i>Coefficients</i> | <i>Percent (%)</i> |
|------------------|-------------------|----------------|---------------------|--------------------|
| Education        | 0.032             | 5.66           | 0.135               | 24.02              |
| Male             | 0.003             | 0.62           | 0.034               | 6.10               |
| Experience       | 0.022             | 3.87           | -0.134              | -23.72             |
| Province         | 0.037             | 6.56           | 0.081               | 14.34              |
| Ownership        | 0.208             | 36.92          | -0.222              | -39.32             |
| Industry         | 0.006             | 1.11           | 0.046               | 8.08               |
| Occupation       | -0.004            | -0.66          | -0.041              | -7.33              |
| Constant         |                   |                | 0.359               | 63.75              |
| Total            | 0.305             | 54.08          | 0.259               | 45.92              |

| <i>2002-2007</i> | <i>Endowments</i> | <i>Percent</i> | <i>Coefficients</i> | <i>Percent (%)</i> |
|------------------|-------------------|----------------|---------------------|--------------------|
| Education        | 0.117             | 25.47          | 0.304               | 66.48              |
| Male             | 0.002             | 0.54           | 0.039               | 8.58               |
| Experience       | -0.009            | -1.87          | -0.032              | -6.92              |
| Province         | -0.009            | -1.92          | -0.239              | -52.32             |
| Ownership        | 0.004             | 0.78           | -0.036              | -7.92              |
| Industry         | 0.007             | 1.64           | -0.049              | -10.77             |
| Occupation       | 0.010             | 2.21           | -0.008              | -1.76              |
| Constant         |                   |                | 0.356               | 77.78              |
| Total            | 0.123             | 26.85          | 0.335               | 73.15              |

| <i>2007-2013</i> | <i>Endowments</i> | <i>Percent</i> | <i>Coefficients</i> | <i>Percent (%)</i> |
|------------------|-------------------|----------------|---------------------|--------------------|
| Education        | -0.054            | -12.83         | 0.121               | 28.91              |
| Male             | -0.001            | -0.25          | 0.014               | 3.29               |
| Experience       | -0.018            | -4.38          | 0.218               | 52.22              |
| Province         | 0.086             | 20.67          | 0.018               | 4.42               |
| Ownership        | 0.006             | 1.33           | -0.001              | -0.13              |
| Industry         | -0.004            | -0.97          | -0.032              | -7.72              |
| Occupation       | -0.005            | -1.15          | -0.025              | -6.06              |
| Constant         |                   |                | 0.095               | 22.63              |
| Total            | 0.010             | 2.43           | 0.408               | 97.57              |

*Source:* Authors' calculations based on CHIP 1995, 2002, 2007, and 2013.

*Note:* The wages have been adjusted by spatial prices and are based on 2013.

## 2.2. Wage Inequality

The Gini coefficients for wage inequality increased throughout the sample period (Table 2.7). The Gini coefficient increased from 0.29 in 1995 to 0.34 in 2002 and to 0.38 in 2013. We observed this increase in wage inequality within all of the subgroups that we considered, and the magnitude of the changes for subgroups were similar to those for the entire sample. This suggests that the increase in residual wage inequality (inequality within

specific groups defined by observable characteristics) was a major contributor to overall wage inequality during the study period.

**Table 2.7: Gini Coefficients of Wage Inequality, 1995-2013**

|                  |       | 1995  | 2002  | 2013  |
|------------------|-------|-------|-------|-------|
| Total            |       | 0.29  | 0.337 | 0.377 |
| By Group:        |       |       |       |       |
| Male             |       | 0.285 | 0.321 | 0.368 |
| Female           |       | 0.289 | 0.351 | 0.379 |
| Minority         |       | 0.291 | 0.338 | 0.376 |
| Non-minority     |       | 0.263 | 0.328 | 0.398 |
| Party member     |       | 0.300 | 0.339 | 0.375 |
| Non-party member |       | 0.242 | 0.305 | 0.341 |
| Age group        | 16-25 | 0.338 | 0.341 | 0.376 |
|                  | 26-35 | 0.281 | 0.337 | 0.36  |
|                  | 26-45 | 0.264 | 0.322 | 0.351 |
|                  | 46-55 | 0.268 | 0.334 | 0.392 |
|                  | 56-65 | 0.246 | 0.378 | 0.463 |

*Source:* Authors' calculations based on CHIP 1995, 2002, and 2013.

*Note:* The wages have been adjusted by spatial prices and are based on 2013.

We also explored that extent to which education played a role in explaining wage inequality. We used a decomposition method proposed by Morduch and Sicular (2002) to assess the relative importance of different factors in shaping wage inequality. Table 2.8 shows that, in 1995, education alone explained less than 5 percent of total wage inequality, whereas by 2013, it explained nearly 10 percent of the Gini coefficient. Another variable that plays an increasingly important role in determining wage inequality is the employment sector.

**Table 2.8: Decomposition of Gini Coefficients of Wage Inequality, 1995-2013**

|                                      | 1995   | Percent | 2002   | Percent | 2007   | Percent | 2013   | Percent |
|--------------------------------------|--------|---------|--------|---------|--------|---------|--------|---------|
| A:Gini coefficient                   | 0.2904 |         | 0.3309 |         | 0.3672 |         | 0.378  |         |
| B: Murdoch and Sicular decomposition |        |         |        |         |        |         |        |         |
| Education                            | 0.0142 | 4.90    | 0.0246 | 7.44    | 0.0397 | 10.81   | 0.0528 | 13.97   |
| Male                                 | 0.0050 | 1.71    | 0.0065 | 1.97    | 0.0120 | 3.26    | 0.0131 | 3.48    |
| Experience                           | 0.0322 | 11.09   | 0.0089 | 2.68    | 0.0049 | 1.34    | 0.0077 | 2.02    |
| Province                             | 0.0497 | 17.12   | 0.0331 | 10.01   | 0.0642 | 17.48   | 0.0296 | 7.83    |
| Ownership                            | 0.0065 | 2.25    | 0.0087 | 2.64    | 0.0116 | 3.15    | 0.0245 | 6.49    |
| Industry                             | 0.0030 | 1.03    | 0.0197 | 5.97    | 0.0106 | 2.89    | 0.0107 | 2.83    |
| Occupation                           | 0.0024 | 0.84    | 0.0295 | 8.93    | 0.0141 | 3.83    | 0.0169 | 4.48    |
| Residual                             | 0.1774 | 61.07   | 0.1998 | 60.36   | 0.2102 | 57.24   | 0.2227 | 58.91   |
| C: Shorrocks decomposition           |        |         |        |         |        |         |        |         |

|            | 1995   | Percent | 2002   | Percent | 2007   | Percent | 2013   | Percent |
|------------|--------|---------|--------|---------|--------|---------|--------|---------|
| Education  | 0.0198 | 6.82    | 0.0266 | 8.04    | 0.0378 | 10.28   | 0.0468 | 12.39   |
| Male       | 0.0066 | 2.28    | 0.0079 | 2.39    | 0.0143 | 3.89    | 0.0147 | 3.90    |
| Experience | 0.0607 | 20.90   | 0.0461 | 13.93   | 0.0419 | 11.41   | 0.0556 | 14.72   |
| Province   | 0.0451 | 15.52   | 0.0363 | 10.98   | 0.0620 | 16.89   | 0.0326 | 8.63    |
| Ownership  | 0.0067 | 2.31    | 0.0083 | 2.52    | 0.0116 | 3.15    | 0.0226 | 5.99    |
| Industry   | 0.0067 | 2.29    | 0.0198 | 5.98    | 0.0119 | 3.23    | 0.0127 | 3.35    |
| Occupation | 0.0040 | 1.38    | 0.0277 | 8.37    | 0.0144 | 3.92    | 0.0171 | 4.51    |
| Residual   | 0.1409 | 48.50   | 0.1582 | 47.80   | 0.1734 | 47.22   | 0.1758 | 46.50   |

*Source:* Authors' calculations based on CHIP 1995, 2002, 2007, and 2013.

*Note:* The wages have been adjusted by spatial prices and are based on 2013.

### 2.3. Returns to Education

Since education is a major form of human capital, all over the world better educated workers earn more on average than less educated ones. The returns to education (that is, the wage increases associated with a certain number of years of schooling such as four years of college education) depend on circumstances such as a country's infrastructure, economic structure, and population. In particular, industrial upgrading of the economy and occupational changes both tend to increase returns to education.

#### Returns to Education in Rural and Urban Areas

We estimated returns to education separately for rural and urban China using the rural and urban data from the CHIP surveys for 1995, 2002, 2007, and 2013. We ran OLS regressions of wages (in log form) on years of schooling and other standard controls including gender, experience, experience squared, and regional dummies. We did not attempt to address the omitted-ability bias issue in estimating returns to education, nor did we try to account for any changes in educational quality. While these are valid concerns, a full discussion is beyond the scope of this chapter. Our results (Panel A of Table 2.9) indicated that returns to education were significantly higher in urban areas than in rural areas and that the size of this gap grew after the 1990s. In the mid-1990s, for example, the return on one additional year of education was around 5 percent in urban China, while in rural parts of the country it was 2 percent. By 2013, returns to education had increased to 11 percent in urban areas while remaining at a relatively low 4.3 percent in rural areas. The gap in the returns to education between urban and rural areas was also large in 2005 – 13 percent versus 4 percent for an additional year of education.<sup>21</sup>

<sup>21</sup> The results for 2005 are not reported. For that year, we used data from the 1-percent-of-population survey and the Heckit model to correct for selection bias and arrived at similar results. Results from another dataset (the China Health and Nutrition Survey (CHNS)) showed similar patterns of rural and urban returns to education.

**Table 2.9: Returns to Education, 1995-2013**

|  | (1)<br>1995                                | (2)<br>2002         | (3)<br>2007         | (4)<br>2013         |
|--|--|---------------------|---------------------|---------------------|
| A: Urban                                     | 0.048***<br>(0.002)                        | 0.091***<br>(0.003) | 0.109***<br>(0.003) | 0.109***<br>(0.004) |
| Rural  | 0.020*<br>(0.010)                          | 0.034***<br>(0.004) | 0.027***<br>(0.004) | 0.043***<br>(0.003) |
| B: Urban                                     | Occupation & industry being controlled for |                     |                     |                     |
|  | 0.029***<br>(0.002)                        | 0.044***<br>(0.003) | 0.074***<br>(0.003) | 0.079***<br>(0.004) |
| C: Urban                                     |  |                     |                     |                     |
| Education levels (primary and below omitted) |  |                     |                     |                     |
| Middle school                                | 0.281***<br>(0.025)                        | 0.172***<br>(0.044) | 0.138**<br>(0.059)  | 0.281***<br>(0.054) |
| High school                                  | 0.283***<br>(0.025)                        | 0.389***<br>(0.044) | 0.269***<br>(0.058) | 0.450***<br>(0.054) |
| Technical school                             | 0.434***<br>(0.026)                        | 0.583***<br>(0.046) | 0.526***<br>(0.060) | 0.604***<br>(0.058) |
| Professional college                         | 0.485***<br>(0.026)                        | 0.749***<br>(0.044) | 0.709***<br>(0.058) | 0.863***<br>(0.056) |
| College and above                            | 0.597***<br>(0.030)                        | 0.995***<br>(0.047) | 0.985***<br>(0.059) | 1.207***<br>(0.057) |

*Source:* Authors' calculations based on CHIP data for 1995, 2002, 2007 and 2013.

*Note:* (1) Depicted are coefficients on years of schooling in wage equations. (2) We controlled for experience, experience squared, gender, and provincial dummies in our OLS regressions. (3) The sample is restricted to those aged 22 to 54 who were able to work and were not in school. (4) \*, \*\*, and \*\*\* are significance levels at 10 percent, 5 percent, and 1 percent respectively. (5) Standard errors are in parentheses. The dependent variable is a log of hourly wages, except for the 2007 data, for which we used the annual wage.

There are several important (and inter-related) points to be mentioned. First, this estimate of the returns to education in rural areas does not take into consideration the fact that education is the main factor driving migration from rural to urban areas. Studies have shown that the probability of having a non-farm job is significantly higher for well-educated workers than for less-educated workers (Chen and Xing, 2006). More importantly, going to college is an important factor in helping a rural resident to obtain urban hukou status. Second, controlling for occupation and industry differentials (Panel B of Table 2.9) accounted for 25 to 45 percent of the earnings differentials between individuals with different years of schooling. This means that the differences that we observed in the returns to years of schooling were at least partly a reflection of the increased earning differentials between various occupations and industries, as already mentioned above.

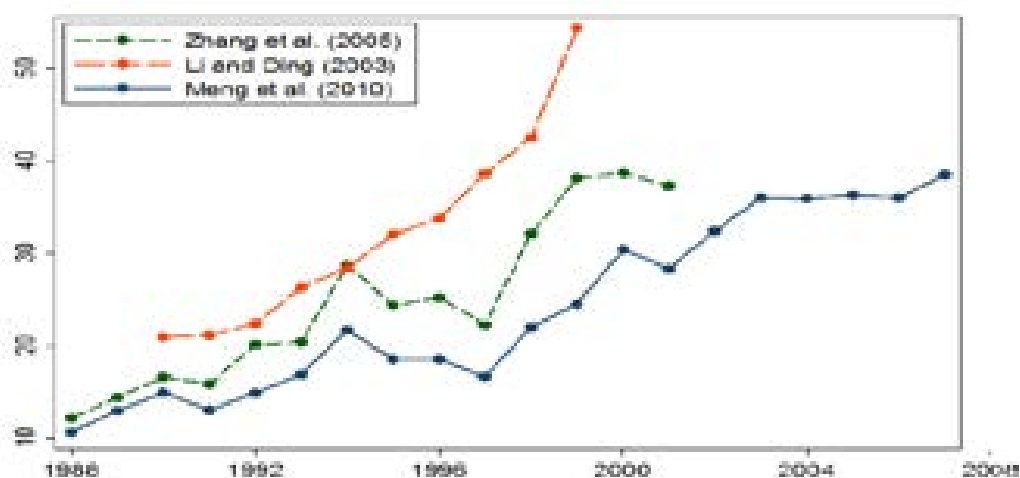


## The Returns to Different Levels of Education

The returns to college education (relative to a high school education) increased throughout the entire study period, while the returns to high school and technical school education (relative to a middle school education) increased between 1995 and 2002 but declined between 2002 to 2007. This suggests that demand for college graduates continuously increased, while that for the mid-level skills acquired by technical or high school graduates has declined in recent years. Although the coefficient on the dummy for college and other tertiary education was significantly higher in 2013 (1.207) than in 2002 (0.995) and 2007 (0.985), the implied college premium did not increase a lot between 2007 and 2013 because the coefficient on the high school dummy also was significantly higher in 2013 than in early years.

Our findings on the college premium are consistent with those reached by a number of other studies. Figure 2.16, which summarizes results from several studies, shows that the college earnings premium increased dramatically in the early 1990s, reaching 30 to 50 percent by the end of that decade. At the start of the 21st century, the returns kept rising but seemed to plateau after the mid-2000s (Zhang et al, 2005; Li and Ding, 2003; and Meng et al, 2010). These results have one particularly significant implication: although China has expanded access to higher education tremendously, the increasing demand for college graduates in the labor market has kept the college premium high. Even assuming an unemployment rate of 20 percent for college graduates, the expected returns from college education could still be as high as 30 percent. In fact, research shows that the unemployment rate for those with a college education has been much lower than the rate for workers with lower levels of education. Overall, especially within urban areas, a college education continues to yield ample rewards.

**Figure 2.15: Returns to College Education, 1988-2008**



*Source:* Authors' calculations based on Zhang et al (2005), Li and Ding (2003), and Meng et al (2010).

*Note:* The reference group is high school graduates.

## The Returns to Education by Region

We found that returns to education evolved unevenly across Chinese provinces, with larger premiums in the more developed coastal region. Using CHIP's urban samples, we estimated Mincerian wage equations for different provinces to determine how the returns to years of schooling varied across regions (see Table 2.10). Our results suggest that returns to education increased significantly in coastal provinces between 2002 and 2007. A regression analysis by Whalley and Xing (2014) showed that the increase in the returns to education was closely related to growth in exports, and our evidence confirmed that growth in exports increased the demand for educated workers.

**Table 2.10: Returns to Education by Province, 1995-2013**

|            | 1995     | 2002     | 2007     | 2013     |
|------------|----------|----------|----------|----------|
| Beijing*   | 0.039*** | 0.077*** | 0.116*** | 0.142*** |
| Shanxi     | 0.052*** | 0.071*** | 0.085*** | 0.065*** |
| Liaoning*  | 0.051*** | 0.088*** | 0.098*** | 0.103*** |
| Jiangsu*   | 0.055*** | 0.099*** | 0.148*** | 0.103*** |
| Anhui      | 0.045*** | 0.106*** | 0.070*** | 0.098*** |
| Henan      | 0.064*** | 0.084*** | 0.084*** | 0.093*** |
| Hubei      | 0.044*** | 0.078*** | 0.084*** | 0.103*** |
| Guangdong* | 0.036*** | 0.100*** | 0.145*** | 0.149*** |
| Chongqing  |          | 0.083*** | 0.075*** | 0.059*** |
| Sichuan    | 0.047*** | 0.090*** | 0.121*** | 0.105*** |
| Yunnan     | 0.043*** | 0.079*** | 0.120*** | 0.136*** |
| Gansu      | 0.068*** | 0.144*** | 0.114*** | 0.147*** |

*Source:* Authors' calculations based on data from CHIP 1995, 2002, 2007, and 2013.

*Note:* Urban China only. For each province, we ran an OLS regression to get the returns to years of schooling. We also controlled for experience, experience squared, gender, industry, and ownership dummies. Coastal provinces are marked with an asterisk. \*\*\* represent statistical significance level of 1%.

## 6. Labor Costs and Labor Productivity

The other side of the coin to the increased wages of workers is the increased cost of labor for employers. Wage levels for migrant workers have increased dramatically in recent years, which has raised concerns that China might be losing its competitiveness in the global economy. In the previous section, we showed that the main factor behind these wage increases was an increase in educational levels as well as in the returns to education. In this section, we address the concern about China's competitiveness by comparing productivity growth and wage growth, drawing heavily on a recent report on labor costs by the China Institute of Income Distribution (CIID, 2016).

The CIID report on labor costs used data from the Chinese Industrial Enterprise Survey to calculate the cost per unit of labor (AW) and the marginal product of labor (MPL). MPL can be regarded as the contribution

of labor to total output and AW as the wage paid by employers. Therefore, the ratio of AW to MPL is one measure of the relative cost of labor. The report calculated AW by dividing total wages by the total number of workers and calculated MPL by estimating a production function with capital and labor. As manufacturing is the largest non-agricultural sector in the Chinese economy and the Chinese Industrial Enterprise Survey covers all state-owned and other enterprises with output above 5 million Chinese yuan, the results of the study reflected the labor cost situation in broad swathes of the Chinese labor market between 2000 and 2012 (Table 2.11).

**Table 2.11: Labor Costs and Labor Productivity, 2000-2012**

|      | AW<br>(1,000RMB) | MPL<br>(1,000RMB) | Unit labor<br>cost<br>(AW/MPL) | Non-labor intensive                         |   |                                | Labor intensive                             |   |                                |
|------|------------------|-------------------|--------------------------------|---|---|--------------------------------|---|---|--------------------------------|
|      |                  |                   |                                | Average<br>annual wage<br>(AW,<br>1,000RMB) | Marginal<br>Product of<br>Labor<br>(MPL,<br>1,000RMB) | Unit labor<br>cost<br>(AW/MPL) | Average<br>annual wage<br>(AW,<br>1,000RMB) | Marginal<br>Product of<br>Labor<br>(MPL,<br>1,000RMB) | Unit labor<br>cost<br>(AW/MPL) |
| 2000 | 9.11             | 12.76             | 0.714                          | 8.8   | 11.49   | 0.766                          | 9.61  | 14.34   | 0.67                           |
| 2001 | 10.27            | 14.86             | 0.691                          | 10.28                                       | 13.51   | 0.761                          | 10.24                                       | 16.45   | 0.622                          |
| 2002 | 11.04            | 17.22             | 0.641                          | 10.73                                       | 15.8  | 0.679                          | 11.49                                       | 18.79   | 0.611                          |
| 2003 | 11.97            | 20.51             | 0.584                          | 11.72                                       | 19.33   | 0.606                          | 12.32                                       | 21.56   | 0.571                          |
| 2004 | 13.31            | 23.82             | 0.559                          | 13.2  | 23.76   | 0.556                          | 13.43                                       | 23.25   | 0.578                          |
| 2005 | 14.71            | 25.81             | 0.57                           | 14.65                                       | 26.11   | 0.561                          | 14.78                                       | 24.77   | 0.596                          |
| 2006 | 16.85            | 29.75             | 0.567                          | 16.53                                       | 30.6  | 0.54                           | 17.22                                       | 28.02   | 0.615                          |
| 2007 | 19.5             | 34.35             | 0.568                          | 19  | 36.46   | 0.521                          | 20.05                                       | 31.13   | 0.644                          |
| 2008 | 22.29            | 35.74             | 0.624                          | 21.89                                       | 39.19   | 0.559                          | 22.69                                       | 31.26   | 0.726                          |
| 2009 |                  | 41.3              |                                |   | 44.75   |                                |   | 36.67   |                                |
| 2012 | 28.48            | 49.08             | 0.58                           | 29.12                                       | 53.88   | 0.54                           | 27.79                                       | 42.13   | 0.659                          |

*Source:* Authors' calculations based on Tables 3-1 and 3-2 in CIID (2016) that were estimated using data from the Chinese Manufacturing Enterprises Survey 2000-2012.

*Notes:* AW is the average annual wage, and MPL is the marginal product of labor.

As is evident from Table 2.11, between 2000 and 2012, the average annual wage in China increased from Yuan 9,110 to Yuan 28,480 and the MPL increased from Yuan 12,800 to Yuan 49,100. While both variables increased significantly, labor productivity grew faster than labor costs. In other words, wage increases lagged behind workers' contributions to total output. In 2000, the average wage was 70 percent of the MPL, and by 2012, it was 58 percent. The CIID report also divided enterprises into labor-intensive and non-labor-intensive industries and found that the labor-intensive sector had higher labor cost growth than the non-labor-intensive sector, and therefore had undergone a structural transformation.

To put the findings of the CIID report into a global perspective, it showed that labor costs per hour of work in China are still low compared to these costs in many other countries. For example, the average labor cost in mainland China in 2013 was US\$3.88 per hour, which was significantly lower than in Mexico, Brazil, and Taiwan. When calculated per unit of output, China's labor costs are low compared with these costs in developed countries as well as many middle-income countries. The report did not compare China with low-income countries.

## **7. Labor Market Trends and Key Unanswered Questions**

This chapter has discussed the key labor market trends in China over the last three to four decades. These trends reflect the massive structural transformation that has taken place in China's economy during this period, which has completely changed the way in which the Chinese live. In this section, we summarize our most salient findings and present a few key answered questions.

Over the study period, China's labor force participation rate declined, with the rate for women decreasing more than the rate for men. However, unemployment has remained low, never exceeding 3 percent. The Chinese labor force has become increasingly educated, with the share of workers with tertiary degrees increasing significantly due to the government's higher education expansion policy that was initiated in the late 1990s. Meanwhile, the number of rural Chinese moving to urban areas has declined in recent years. Today, rural workers from inland China are more reluctant to migrate long distances to coastal regions and demand higher wages for doing so than before.

The distribution of employment across industries and occupations changed drastically as a large percentage of workers moved out of the agricultural sector. Within the non-agricultural sectors, both high-end (such as IT and finance) and low-end (such as manual service) industries experienced higher growth than the middle industries (such as manufacturing). Occupational polarization has also been observed. These patterns suggest that non-agricultural labor demand has become increasingly biased in favor of skilled workers who perform non-routine tasks.

These trends have influenced the wage structure. Wage levels and wage inequality have both increased significantly in urban China. Wage gaps by education, age, and gender have also all increased, as well as within group (or residual) wage inequalities of similar observable characteristics such as education, age, and gender. Over the last few decades, regional wage gaps had increased but then declined in recent years. Our decomposition exercises showed that rising returns to education have played a major role in increasing wage inequality.

By the same token, higher wages have translated into higher costs for labor employers, but we found that labor productivity has grown faster than labor

costs. This has allowed China to maintain its competitiveness in the global economy, at least in those industries that are not too labor-intensive.

More analysis will be needed to fully understand the Chinese labor market and to produce an evidence base for policymaking. Research on the following topics will be particularly worthwhile:

- Why did labor force participation decline in urban China? What factors caused the sharp decline in the labor force participation rate for women? How can we reconcile the mixed evidence?
- How will the recently introduced changes to the hukou system influence rural-to-urban migration?
- What determines returns to education? What are the roles played by supply and demand?
- How do education premiums affect migration?
- What are the (un)employment dynamics of new college graduates?

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# Background on Labor Policies

Yayun Pan and Achim Schmillen

## 1. Introduction

This chapter discusses the institutional environment for and the relevant literature on two key labor policies in China – the Minimum Wage Regulations and the Labor Contract Law. In addition, the chapter briefly summarizes the global evidence on how labor regulations affect labor market outcomes. The objective of the chapter is to enhance the reader's understanding of the labor market issues and challenges that have existed since the beginning of China's opening-up policy and its transition to a market-oriented economy and to put them into an international perspective.<sup>22</sup>

Before China's economy was opened to the world market, it had no place for minimum wages, employment protection legislation or other labor policies commonly found in market-oriented economies. At that point in time China's most important labor policy was the *hukou* household registration system, which was first implemented in the 1950s by the government to control internal migration from rural to urban areas. In its first two decades of existence, the system was strictly enforced; rural *hukou* holders could only perform agricultural work and were not allowed to move freely to urban areas. For urban *hukou* holders, cross-regional movement was highly restricted, and most workers were employed by the state or state-owned enterprises. Jobs were permanent, and conditions of employment were set directly by the government, thus rendering any dedicated employment protection legislation and minimum wages redundant.

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<sup>22</sup> The discussion in this chapter is based on a qualitative review of the relevant global and China-specific literature on minimum wages and employment protection. Given the growing number of empirical studies on the Minimum Wage Regulations and the Labor Contract Law, conducting a China-specific quantitative meta-analysis – like that of Doucouliagos and Stanley (2009) on the global impact of minimum wages – would be a worthwhile avenue for future research.

After China began its transition to a market-oriented economy in the late 1970s, private firms started to sprout, and the urban population was unable to meet the increasing demand for unskilled labor, particularly in the fast-growing manufacturing industry. Around the same time, the government also *began* to loosen its control of the *hukou* system. These developments resulted in significant rural-to-urban migration, more private sector employment, and an increasingly segmented urban labor market. To regulate this newly emerging labor market, in 1995 China enacted its Labor Law, followed by the introduction of a series of more specific laws and regulations, including the Minimum Wage Regulations in 2004 and the Labor Contract Law in 2008.

The rest of this chapter is structured as follows: Section 2 contains a brief, non-exhaustive description of the existing global evidence of the impact of labor regulations on labor market outcomes. Section 3 focuses on China's minimum wages and charts their development up to the introduction of the Minimum Wage Regulations as well as recent trends. It also summarizes the relevant China-specific literature on the coverage, compliance, and setting of the minimum wages as well as on their economic effects. A discussion of China's employment protection legislation follows in Section 4. This section consists of four parts: (i) a summary of the main provisions of the Labor Contract Law and the general institutional background; (ii) a review of the existing literature on the strictness of China's employment protection legislation; (iii) a summary of studies on the Law's impact on workers; and (iv) a discussion of the studies of its impact on firms. Section 5 concludes.

## 2. International Evidence

Across the world, minimum wages and employment protection legislation have been an important yet controversial topic for both economists and policymakers.<sup>23</sup> In the textbook model of a perfectly competitive labor market, minimum wages will either be completely ineffective or will have an unambiguously negative impact on some labor market outcomes, particularly employment. In this model, raising minimum wages above the market equilibrium wage increases the wages of workers who remain employed and decreases employment. Despite an early theoretical contribution by Stigler (1946) that showed potentially positive effects of minimum wages through productivity gains, until the mid-1990s, the dominant view in the economics profession was that the simple textbook model represented a suitable approximation of reality. However, more recently, models of imperfect or monopsonistic competition on the labor market and other models that are

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<sup>23</sup> This section summarizes the international evidence on the impact of minimum wages and employment protection legislation on key labor market and distributional outcomes. It does not aspire to be comprehensive and partly draws on the messages coming from the World Development Report 2013: Jobs (World Bank, 2012) and Betcherman (2015) which provide broader reviews of the relevant literature and also consider additional outcome variables.

less unequivocal in predicting that moderate minimum wage rises have negative employment effects have gained prominence (Albrecht and Axell, 1984; Manning, 2003; Van den Berg, 2003; Burdett and Mortensen, 1998; and Flinn, 2011). The findings of the theoretical literature on the employment effects of minimum wages are ambiguous, and empirical studies are needed. In fact, the discussion in the theoretical literature has been influenced by and has in turn influenced the existing empirical studies on the economic role played by minimum wages.

Until the early 1990s, the consensus of studies that used disaggregated macro cross-sectional and panel data was that minimum wage increases had significant disemployment effects (Brown et al, 1982, and Neumark and Wascher, 1992). In a seminal contribution, Card and Krueger (1994) used a difference-in-difference approach and micro data on the fast food industry in New Jersey and neighboring Pennsylvania and found no indication that an increase in New Jersey's minimum wage had reduced employment in the state. This study gave rise to the "New Minimum Wage" literature, which has used micro data and/or quasi-experimental empirical methods to evaluate the economic effects of minimum wages. Important contributions to this literature include Neumark and Wascher (2008) and Neumark (2011) who relied on individual-level repeated cross-section or panel data with state and time fixed effects and detailed controls for individual-specific characteristics to analyze the effects of the United States' minimum wages on employment. Also, Allegretto et al (2011) introduced additional controls for long-term growth differences among states and heterogeneous economic shocks, while Dube et al (2010) generalized the approach of Card and Krueger (1994) by considering all differences in the minimum wages across contiguous county-pairs in the United States that straddle a state border.

While over the last 20 years much has been learned about the employment effects of minimum wages in the United States and other developed countries, the literature on developing and emerging countries remains much more limited and focused on Latin America and, to a lesser extent, South East Asia. Notable contributions to the literature include Rama (2001) for Indonesia, Strobl and Walsh (2003) for Trinidad and Tobago, Neumark et al (2006) and Lemos (2009) for Brazil, Gindling and Terrell (2007) for Costa Rica, Alaniz et al (2011) for Nicaragua, and Del Carpio et al (2019) for Thailand. Results from developed countries are generally not directly applicable to developing and emerging countries as the ways in which developing countries adjust to minimum wage increases may not be the same. In particular, developing and emerging countries often have large informal sectors, which are not covered by the minimum wage policies. Therefore, raising the minimum wage may cause workers to move from the formal to the informal sector.

Despite the profound methodological advances made over the last 20 years and the plethora of studies analyzing the effects of minimum wages on employment and other outcomes, a real consensus has so far not been

reestablished. Table 3.1 presents a summary of the findings of the World Bank's *World Development Report 2013: Jobs* (World Bank, 2012) on the effects of minimum wages on various labor market outcomes. The WDR found that minimum wages have either no impact or a modest negative impact on aggregate employment, that any negative employment impact is concentrated on youth and low-skilled workers, and that minimum wages can reduce wage inequality, among other findings. These findings generally remain valid seven years later. At the same time, it is worth noting that even broad reviews of the minimum wage literature sometimes reach contradictory conclusions. For instance, Neumark and Wascher (2008) concluded that the global evidence points towards minimum wages having negative employment effects and Neumark (2014) argued that the evidence indicates that any increases in actual wages triggered by minimum wage increases are offset by job destruction. In contrast, reviews and meta-analyses by Doucouliagos and Stanley (2009) and Wolfson and Belman (2014) found no statistically or economically meaningful employment losses, and Kuddo et al (2014) argued that, while there is a negative impact on employment, it is very small and can therefore to some extent be discounted.

**Table 3.1: Impact of Minimum Wages on Selected Outcome Variables**

| <i>Outcome variable</i>             | <i>Findings</i>  | <i>Comments</i>   |
|-------------------------------------|--|---|
| Aggregate employment                | Either no impact or modest negative impact                       | Both industrial and developing countries; some studies show a positive employment effect    |
| Employment for particular groups    | Negative employment impact concentrated on youth and low-skilled | Some studies show a positive employment effect  |
| Wages                               | Positive effect  | Effect strongest around minimum wage; some evidence of a positive effect in informal sector |
| Wage distribution                   | Reduces wage inequality  |   |
| Poverty                             | Reduces poverty  | Some studies find no effect   |
| Labor and total factor productivity | No consistent conclusion   | Rarely analyzed   |

*Source:* Authors based on World Development Report 2013: Jobs (World Bank, 2012).

While the employment effects of minimum wages continue to be hotly debated, it is more widely agreed that minimum wage increases affect the incidence of different employment types, specifically by increasing informality and precarious forms of employment such as self-employment (Lotti et al, 2017). As discussed by Kalenkoski (2016) and Kuddo (2018), there is also relatively robust evidence that if the minimum wage is set excessively high, this can reduce the number of employment opportunities available to young workers and create unemployment for this particular group of workers. Also, this can result in employers reducing the amount of on-the-job training opportunities that they provide for their employees that would enable them to eventually command higher wages for their increased skills. The literature concludes that setting the minimum wage at a low level and enforcing it

effectively is generally more efficient and equitable than setting the minimum wage at a high level with weak or selective enforcement (Rutkowski, 2003 and Kuddo, 2018).

An important factor that deserves to be given particular attention when analyzing minimum wages in developing and emerging countries are their effects on household-level and distributional outcomes like income inequality or poverty. These effects depends not only on the direct effect of the minimum wage on wages and employment but also on the household situation of minimum wage earners. The argument most frequently made in favor of a minimum wage is that it helps poor and low-income families, but because it can have some nonemployment effects, the minimum wage can create both winners and losers. The winners get a higher wage with no reduction in employment (or hours), while the losers bear the burden of the nonemployment effect by losing their job, having their hours reduced, or finding it more difficult to get a job. A number of empirical studies have analyzed this issue. Their findings have been mixed but generally point towards the minimum wage having some limited potential to improve aggregate distributional outcomes but also creating both winners and losers (Gindling, 2014). This means that, while the distributional effects of minimum wages need to be taken into account when establishing minimum wage levels, minimum wages cannot substitute for other policy instruments better suited to redistributing income and reducing poverty.

To some extent, the lessons arising from the theoretical and empirical evidence on employment protection legislation mirror the lessons about the minimum wage. Again, canonical theoretical models of competitive labor markets would indicate that employment protection legislation has an unequivocally negative impact on labor market outcomes. This is because these models make a basic assumption that any form of employment protection raises employment costs for employers and thus might prevent them from hiring workers in the first place. However, similarly to how the theoretical literature on minimum wages has been amended, in recent years the canonical models on employment protection legislation have been challenged from a theoretical perspective.

For instance, Pissarides (2001) used a model of search and matching to evaluate how employment protection legislation affects labor market performance. In his paper, the author considered labor market frictions and found that employment protection legislation does not necessarily reduce job creation or negatively influence equilibrium employment, if chosen optimally. In addition, when market imperfections are fed into the standard models, employment protection legislation may potentially increase productivity as lower job turnover may incentivize workers and employers to invest in human capital (Addison and Teixeira, 2003). Other theoretical models have shown that more stringent employment protection legislation might increase employment within a given firm (the firm-intensive margin) but decrease firm entry (the firm-extensive margin) or that it might prevent job-to-job

transitions, resulting in lower productivity gains from labor reallocation to more productive firms.

With regard to empirical evidence on the effects of employment protection legislation, following pioneering research by Lazear (1990), there have been many relevant studies, in particular for Organisation for Economic Co-operation and Development (OECD) countries. In general, this literature has found only a weak association between the strictness of a country's employment protection legislation and its level of development. This argument was made by World Bank (2012) and also by Botero et al (2004) who found that development is not a significant determinant of employment protection legislation.

In a similar vein to minimum wages, the econometric studies of the impact of employment protection legislation on different labor market outcomes have also reached mixed conclusions, but as data and estimation methodologies have improved, some messages have begun to arise. Some consensus findings from the *World Development Report 2013: Jobs* are summarized in Table 3.2.

**Table 3.2: Impact of Employment Protection Legislation on Selected Outcome Variables**

| <i>Outcome variable</i>               | <i>Findings</i>   | <i>Comments</i>   |
|---------------------------------------|---|---|
| Aggregate employment and unemployment | Either no impact or modest negative impact on employment / positive impact on unemployment                                    | Evidence on both industrial and developing countries (largely Latin America); results tend not to be robust |
| Employment for particular groups      | Prime-age males favorably affected but young people, women, and the low-skilled unfavorably affected                          | Partial reforms for two-track labor markets lead to more precarious employment for affected groups          |
| Employment dynamics                   | Longer durations of employment, unemployment, and being out of the labor force; smaller flows between different types of work |   |
| Adjustments to shocks                 | Increases in the negative impact of shocks  | Consensus not strong  |
| Wage distribution                     | Reduces wage dispersion   |   |
| Reallocation of labor                 | Negative effect because of the smaller labor flows between different types of work  |   |

*Source:* Authors based on World Bank (2012).

Importantly, while most early studies found an unequivocally negative association between employment protection legislation and employment, more recent studies have tended to find no significant relationship between these two variables (see Betcherman, 2015 for a comprehensive review). Specifically, studies using longitudinal data have examined whether changes in the strictness of employment protection legislation have impacted employment, and their results have not been conclusive.<sup>24</sup> However, they

<sup>24</sup> For Latin American countries, see Heckman and Pages (2004) and Micco and Pages (2006), and for country-specific studies, see Kugler (2004) for Colombia, Saavedra and Torero (2004) for Peru, Petrin and Sivadadan (2006) for Chile, and Mondino and Montoya (2004) for Argentina.

found that stricter employment protection legislation decreases job churning and increases the prevalence of workers being employed with temporary contracts. This result holds both for cross-sectional studies and longitudinal analyses, making it reliable. It has also frequently been argued that stricter employment protection legislation can reduce the ability of economies to deal with economic crises, but Eichhorst et al (2010) found no evidence to sustain this argument among G20 countries after the global financial crisis. Evidence of the impact of employment protection legislation on wages, productivity, and inequality is still very scarce. Although there is some evidence that stricter employment protection legislation reduces wage dispersion, OECD (2013) argued that it increases inequality.

### **3. China's Minimum Wages**

#### **Early Developments**

Starting in 1978, in conjunction with its opening-up policy and transition to a market-oriented economy, the Chinese government began to consider developing a minimum wage system.<sup>25</sup> In 1984, China formally acknowledged the 1928 Minimum Wage Treaty of the International Labour Organization (ILO), but this acknowledgment entailed no binding legal requirements (Su 1993). In the late 1980s, a small number of localities began to implement local minimum wage regulations, with Zhuhai, a prefecture-level city in Guangdong Province, being the first municipality to do so in 1989. In the same year, it was followed by three other cities in Guangdong Province: Shenzhen, Guangzhou, and Jiangmen.

A national policy on minimum wages was put in place when the central government issued the Regulations Concerning Minimum Wages in Enterprises (or Enterprise Minimum Wage Regulations) on November 24, 1993. These regulations became effective in July 1994 and were incorporated into the 1995 Labor Law. Article 48 of this law stated that the standard minimum wages must be set by the governments of provinces, autonomous regions, and those municipalities directly under the guidance of the central Ministry of Labor and that they must be reported to the State Council for the record. The same article also required that firms' payments to workers must be above the local minimum wage. Article 49 of the Labor Law stated that the factors to be taken into account when setting the level of the minimum wage should include the minimum living expenses of workers and the average expenses of their families, average local wage levels, labor productivity, the employment situation, and differences in economic development between regions.

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<sup>25</sup> The development of the minimum wage policy in China has also been documented in several recent studies (Fang and Lin, 2015, Wang and Gunderson, 2011, 2012, and 2015, and Xing and Xu, 2016).

Following the introduction of the Enterprise Minimum Wage Regulations, seven out of 31 provinces had set their own minimum wages by December 1994. Very quickly, a number of challenges became apparent. Under the Enterprise Minimum Wage Regulations, local governments had considerable flexibility to set the level of their minimum wage based on local conditions. The only specific guidance that the regulations gave them was that they could only adjust the minimum wage once every year at most. As a result, different minimum wage levels quickly began to emerge in different municipalities both between and within provinces. Many provincial governments in Central and Western China and even beyond hardly ever adjusted their minimum wages; for example, in 1998 during the Asian financial crisis, only one-fifth of all counties adjusted their minimum wages (Huang et al, 2014). In addition, the regulations covered only full-time employees of specific urban enterprises. Also, the regulations were not sufficiently enforced in practice as there were only lax provisions for enforcement (Du and Pan, 2009). One consequence of these myriad challenges was that minimum wages were often not a binding constraint to firms' wage setting.

With China's continued opening-up policy and transition to a market-oriented economy and in particular its entrance into the World Trade Organization (WTO) in 2001, the Enterprise Minimum Wage Regulations were more and more regarded as inadequate and in need of change (Huang et al, 2014). In addition, in the 1990s and early 2000s, there was also a large influx of rural migrants into China's cities. Most of these migrants worked in low-paying jobs that usually were not covered by the Enterprise Minimum Wage Regulations. All of these issues prompted the central government to reconsider the regulation of minimum wages.<sup>26</sup>

In 2004, China's minimum wage regime became much more structured and stringent when the Enterprise Minimum Wage Regulations were replaced by the Minimum Wage Regulations, which were issued by the Ministry of Labor and Social Security, the predecessor of the current Ministry of Human Resources and Social Security (MHRSS). They are also known as Order No. 21 of the Ministry of Labor and Social Security in 2004. The Minimum Wage

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<sup>26</sup> Precise estimates vary, but all studies show that the number of people who migrate from rural to urban areas in China is high, with most looking for jobs and a higher standard of living. Hu (2012) conducted a comprehensive analysis of the reasons why young people migrate from rural areas to urban areas and found that in 2009 there were 145 million rural-to-urban migrants in China, about 11 percent of the total population. Since 2002, migrant workers have accounted for more than 40 percent of urban employment. Meng and Yamauchi (2017) estimated that between 2000 and 2015, about 160 million workers migrated to cities. According to the National Bureau of Statistics, the total number of migrant workers within China reached 277 million in 2015. Despite their importance to the Chinese economy, migrant workers were for a long time not entitled to many labor rights and did not have access to urban social benefits because of their rural hukou status. Even today, they face a



Regulations differed from the articles on the minimum wage set out in the 1995 Labor Law in the following key ways:

- The coverage of the minimum wages was expanded dramatically from only employees working in private companies to every employee of nonprofit enterprises, home-based enterprises, government agencies, public institutions, and social organizations irrespective of the precise employment relationship between the employee and his or her firm. Coverage was also extended to workers in towns and villages rather than just those in cities.
- Hourly minimum wages were introduced for the first time. According to the Minimum Wage Regulations, monthly minimum wages apply to full-time workers and hourly minimum wages to part-time employees. For full-time workers, minimum wages are generally based on their monthly base wages, in other words, their wages not including any fringe benefits or overtime bonuses (Lin and Yun, 2016 and Ye et al, 2015).
- The penalties for non-compliance by employers were increased substantially, from a previous range of 20 to 100 percent of the wages owed to workers to a new range of 100 to 500 percent (Fang and Lin, 2015).
- The new Minimum Wage Regulations mandated for minimum wage adjustments to be made more frequently and systematically. Provincial governments are now required to adjust their local minimum wage at least once every two years based on specific criteria related to local economic development, employment, average wages, consumer prices, minimum living standards, and workers' contributions to social insurance and housing provident funds.

The promulgation of the Minimum Wage Regulations set the foundation for the current minimum wage system in the Chinese labor market. Table 3.3 shows a brief history of statutory minimum wages in China up to 2014, after which both the central government and local governments started to closely monitor the labor market with a view to setting appropriate minimum wages (Du and Pan, 2009). However, it must be noted that the development of China's minimum wage system is not yet over. The Minimum Wage Regulations were issued by the third level of China's legislative system, coming directly from a ministry instead of the National People's Congress as the first legislative level or the State Council as the second level. This has limited the amount of resources that provincial governments are willing to put into the work of setting minimum wage levels, monitoring their implementation, or evaluating their impact.

**Table 3.3: History of Minimum Wage Regulations in China**

| <i>Year</i> | <i>National level</i>  | <i>Provincial level</i>   | <i>City level</i>   |
|-------------|--|---|---|
| 1989        |  |   | Zhuhai of Guangdong Province implemented the first local minimum wage regulations, followed by Shenzhen, Guangzhou, and Jiangmen. |
| 1993        | The MHRSS issued the Enterprise Minimum Wage Regulations.  |   |   |
| 1994        | In July, the Enterprise Minimum Wage Regulations were included in China's new Labor Law.                     | By December, seven out of 31 provinces had set their own minimum wages.     |   |
| 1995        |  | By the end of 1995, 24 out of 31 provinces had set their own minimum wages. |   |
| 2003        | In December, the MHRSS passed the new Minimum Wage Regulations.  |   |   |
| 2004        | The Minimum Wage Regulations became effective on March 1, replacing the Enterprise Minimum Wage Regulations. |   |   |

*Source:* Authors based on policy documents.

## Recent Trends

During the period of the Twelfth Five-Year Plan (from 2011 to 2015), China's minimum wage system was mainly used to narrow disparities in income distribution. The most relevant policy document was titled the Several Opinions on Deepening Reform of the Income Distribution System. This document was issued by the National Development and Reform Commission and other agencies in 2013. According to the Several Opinions, during the Twelfth Five-Year Plan, provincial governments would: (i) adjust the local minimum wage in a timely fashion based on the state of local economic development, price changes, and other factors; (ii) adjust the local minimum wage level by 2015 to equal at least 40 percent of the average wages of local urban workers in the vast majority of provinces; and (iii) conduct research and issue special minimum wages for certain industries. The Several Opinions gave a compelling new force to the minimum wage agenda. During the first years after that document had been issued, minimum wage levels grew considerably in several provinces.

In recent years, as the economic growth rate in China has slowed down, many companies have complained that fast-rising labor costs have become untenable. In these circumstances, the government has gradually suspended its previously stated intention of using minimum wage increases as a tool to narrow income disparities. Instead, the focus of public policies has shifted

to reducing enterprises' labor cost burdens. Consequently, minimum wage growth rates have slowed down across much of China, and the government has changed its guidance to provinces regarding minimum wage adjustments in a subtle and significant way. In 2016, the MHRSS revised the minimum frequency of adjustments from at least once every two years to at least once every three years. Partly as a result of this revised guidance from the central government, Guangdong Province did not revise its new minimum wage levels in 2017 and in fact had not done so between 2015 and 2017 either.

The mechanism for evaluating the minimum wages has also undergone a change. In 2017, the MHRSS required provincial governments to evaluate the effects of their minimum wages on their local labor markets. Although most provinces have not yet announced any specific plans to develop an evaluation mechanism, some of them have run initial evaluations of the effects of their minimum wage on the local labor market to see if their policy goals were achieved. Guangdong Province has been at the forefront of such efforts. The Guangzhou City Thirteenth Five-Year Plan for the Development of Human Resources and Social Security issued in 2017 indicated that, over the following three years, Guangzhou City would establish a mechanism for evaluating the impact of the minimum wage on the city's labor market.

Another recent development has been a 2016 requirement by the MHRSS that all provincial governments should release new minimum wage levels on July 1 every year and implement them two months later. Before 2016, different provinces had published their new standards on different dates within any given year. Many observers expect that standardizing the timing of the minimum wage announcements and revisions across the country will help enterprises to be able to plan and budget better.

These recent development show that the minimum wage system in China is still in development. Although a relatively mature minimum wage system began to be implemented after the 2004 promulgation of the Minimum Wage Regulations, it has several shortcomings. The fact that the regulations were promulgated by a relatively low level of government has prevented the system from being fully implemented. Moreover, the minimum wage system does not yet include an active monitoring and evaluation mechanism, nor does it have a legally enforceable punishment mechanism to ensure that local governments comply with the general policy guidance from the central government.

### **Coverage, Compliance, and Setting**

According to the Minimum Wage Regulations, the current minimum wage system is supposed to cover all workers who have formed a labor relationship with their employing entities, including enterprises, private nonprofit enterprises, and individual home-based enterprises that employ outside workers. However, the Minimum Wage Regulations only cover "normal" labor, a detail that has been widely overlooked in the literature. Under Article 3

of the Regulations, “normal” labor is defined as labor provided during usual working hours or working hours agreed to in a signed, legal labor contract. Additional payments or compensation for overtime work or work undertaken in harsh environments – such as in high temperatures, underground, or at dangerous heights – is excluded from the wage calculation for “normal” labor.

As already mentioned, both monthly and hourly minimum wage levels are implemented in China. In practice, though, monthly minimum wages play a much more important economic role than hourly minimum wages. There are three reasons for this. First, the hourly minimum wage level can only be applied to part-time workers. In most employing entities, only a small share of the workforce works part-time. Second, monthly minimum wages are more widely publicized and are given more widespread attention by employers than hourly minimum wages. In fact, monthly minimum wages are even treated as reference wage by many employers that generally pay wages that are much higher than the mandated monthly minimum wage. For example, in some manufacturing plants in southern China, workers’ total wages are much higher than the local minimum wage level, even though their base pay is almost equal to that level. This is because a large portion of the workers’ total wages consists of merit pay and overtime pay, which is calculated by multiplying the monthly minimum wage level by a coefficient. Third, because companies usually employ only a few part-time workers, any “lighthouse effects” from monthly minimum wages are more significant than those from hourly minimum wages.<sup>28</sup>

In general, existing studies suggest relatively high rates of compliance with the Minimum Wage Regulations in China, especially as far as monthly minimum wages are concerned, particularly compared to other developing countries that often have very high rates of non-compliance. Fang and Lin (2015) using data from the annual Urban Household Survey (UHS) from 2002 to 2009, found that only 5.6 percent of civilian employees (excluding the self-employed and students) had a total monthly wage that was below the prevailing minimum wage. Similarly, Yang et al (2014) used a survey of internal migrants from 2011 and 2012 to estimate that approximately 5 percent of migrants have earnings lower than the monthly minimum wage.<sup>29</sup>

When hours of work are taken into account in addition to monthly earnings, empirical evidence emerges of possible non-compliance or at least evasive behavior by employers and employees. For example, Xie (2010) surveyed 485 rural migrant workers in three cities in Jiangsu Province in 2009. Although he found that only 3.9 percent of migrant workers were

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<sup>28</sup> “Lighthouse effects” are spillover effects from minimum wage increases on workers in semi-formal or informal jobs where their employers might not necessarily adhere to the letter of the law but often still try to keep their wages in line with prevailing levels in the formal sector.

<sup>29</sup> Rawski (2003) and Li (2007) and some other studies argue that compliance with minimum wages in China is rather low, but these studies’ claims largely rely on anecdotal evidence.

paid less than the monthly minimum wage, many worked more than the legally mandated 40 hours per week for full-time workers. Subsequently, Xie considered workers' hourly wages and compared them to implicit hourly minimum wages calculated by dividing monthly minimum wages by the standard number of hours worked by a full-time worker in a month. He found that, on an hourly basis, more than 25 percent of workers in his sample earned less than the hourly minimum wage. When he took into account the fact that workers by law should be paid at least 1.5 times the regular minimum wage for overtime (and two times the regular minimum wage for weekend hours), the share of workers who earned less than this implicit minimum wage increased to more than 60 percent.

Sun and Shu (2011) also focused on implicit hourly minimum wages. They surveyed rural migrant workers in nine cities in Guangdong Province in 2006, 2008, 2009, and 2010. According to the survey, the proportions of workers paid less than the monthly minimum wage in those four years were 9.0, 7.7, 4.0, and 4.2 percent respectively. However, when the authors compared hourly earnings with an implicit hourly minimum wage calculated along similar lines as Xie, the proportion of workers not in compliance with the Minimum Wage Regulations climbed to 45.3, 33.3, 28.1, and 23.8 percent respectively. In a similar vein, Du and Wang (2008) using city-level data for Shanghai, Wuhan, Shenyang, Fuzhou, and Xi'an for 2001 and 2005 found that only 11.2 percent of workers earned less than the monthly minimum wage but that 52.2 percent of workers were paid less than the implicit hourly minimum wage.

It is important to note, however, that no matter how compliance is measured and despite the gap in findings with regard to monthly earnings and hourly wages, there is a consensus in the literature that the percentage of workers paid less than the monthly and the – implicit – hourly minimum wage has been declining over the last 15 years (Table 3.4).

**Table 3.4: Share of Workers Paid Less than the Minimum Wage**

| <i>Year</i>   | <i>Geographical coverage</i>                        | <i>Workers paid less than the monthly minimum wage</i> | <i>Workers paid less than the implicit hourly minimum wage</i> | <i>Reference</i>   |
|---------------|---|--|--|--------------------|
| 2001 and 2005 | Shanghai, Wuhan, Shenyang, Fuzhou, and Xi'an Cities | 11.2%  | 52.2%  | Du and Wang (2008) |
| 2006          | Nine cities in Guangdong Province                   | 9.0%   | 45.3%  | Sun and Shu (2011) |
| 2008          | Nine cities in Guangdong Province                   | 7.7%   | 33.3%  | Sun and Shu (2011) |
| 2009          | Nine cities in Guangdong Province                   | 4.0%   | 28.1%  | Sun and Shu (2011) |
| 2009          | Jiangsu Province                                    | 3.9%   | 25%  | Xie (2010)         |
| 2010          | Nine cities in Guangdong Province                   | 4.2%   | 23.8%  | Sun and Shu (2011) |

*Source:* Authors based on cited literature.

According to the Minimum Wage Regulations, the following factors should be considered by provincial governments in setting minimum wage rates: (i) the CPI in urban areas; (ii) the average wage level; (iii) the level of social pension contributions and housing provident fund contributions by workers; (iv) the local employment situation; (v) the level of economic development; and (vi) the minimum living expenses of local workers and their dependents. Huang et al (2014) and, later, Xing and Xu (2016) documented the subnational variations in Chinese minimum wages and attempted to explain this variation. Huang et al (2014) found that when the Enterprise Minimum Wage Regulations were in force between 1994 and 2003, economic variables like average wages, GDP growth, or investment were not significantly associated with minimum wages. In contrast, after the introduction of the Minimum Wage Regulations, the minimum wage rates and some of these economic factors were correlated. This was confirmed by Xing and Xu (2016) who found that economic factors such as the GDP level, a locality's economic structure, and its consumption level have been important explanatory factors for the variation in minimum wages across China. The authors also presented tentative evidence that non-economic factors such as competition between localities also play a role in how minimum wages are determined. Hu (2017) found that the cost of living for local workers and their dependents, the average wage of the employees, and per capita GDP among different provinces were the main factors influencing differences in minimum wage levels.

Dreger et al (2017) and Kanbur et al (forthcoming) both used spatial econometrics techniques to investigate the determinants of China's minimum wages at the subnational level. Dreger et al (2017) showed that the impact of economic variables on minimum wage levels declines once spatial spillovers are considered. Similarly, Kanbur et al. (forthcoming) found evidence of minimum wage competition between localities. However, neither study made full use of county-level data, even though – as detailed above – China's minimum wages in fact differ on this level. This may have biased their estimates, or at least this leaves room for further analyses making use of the full variation of minimum wages at the county level.

### **Economic Impacts of China's Minimum Wages**

Any analysts aiming to estimate the labor market effects of China's Minimum Wage Regulations face at least three methodological challenges. First, because provinces and municipalities in China have considerable flexibility in setting their minimum wages, there are often at least three or four county-level minimum wage levels in most provinces. This means that very detailed county- or city-level data are needed on the dates and the extent of minimum wage increases. These data are not easily available. Second, omitted variables and endogeneity issues (unknown factors that influence both the decisions to adjust minimum wage levels and labor market outcomes) make it difficult

to separate causal effects from effects due to unobserved confounding factors. Third, it is difficult to find micro data that can plausibly represent the population that is affected by minimum wage increases. An additional challenge is that some provinces, such as Beijing and Shanghai, do not take social security payments and housing provident funds into consideration when calculating their minimum wages. This makes their actual minimum wages higher than those reported in many data sets and means that minimum wage levels are not always readily comparable across all provinces.

Despite these challenges, several empirical studies have attempted to estimate how China's minimum wages affect a range of economic outcomes. Because of data constraints, they have mostly had to use aggregate or semi-aggregate data and traditional rather than experimental approaches to minimum wage research (Ni et al, 2011 and Wang and Gunderson, 2011 and 2012). In recent years, a small number of pioneering studies have used firm-level or individual-level microdata and quasi-experimental empirical methods like the ones pioneered by the "New Minimum Wage" literature mentioned above.

One topic that has received widespread attention among labor market economists is the question of how statutory minimum wage adjustments affect actual or effective wages. Most relevant empirical studies have found that minimum wage increases in China have had small or insignificant effects on actual wages. Wang and Gunderson (2012) examined the effects of minimum wage changes in and around 2003 when some provinces in China increased their minimum wages by a substantial amount ("treatment provinces") whereas others did not ("control provinces.") The authors used aggregate data from published statistics and reports including the China Statistical Year Book, the China Labor Statistical Year Book, and the China Population Statistical Year Book, as well as from official government web sites such as that of the MHRSS to come up with difference-in-differences estimates of the impact of minimum wage increases on actual wage growth between 2002 and 2004. Overall, they found that the minimum wage increases between 2002 and 2004 had had no discernable impact on wages, and this result was consistent for various types of workers.

Luo and Cong (2009) used province-level panel data from the China Statistical Yearbook for the period 1994 to 2006 and a fixed-effects model with varying intercepts to study the effects of statutory minimum wages on actual wages in China. Their main finding was that minimum wages contributed to wage growth only for employees of high-wage enterprises such as traffic construction enterprises, real estate corporations, and those in the finance and insurance industry. The authors also found that the effect of statutory minimum wages on actual wages varied across regions and over time and that minimum wages had had a positive effect on average wage growth, but this was insignificant and short-lived.

A second topic that has received widespread attention from analysts has been the impact of minimum wages on employment. Here, existing

empirical studies have yielded somewhat mixed or nuanced results. Most studies agree with each other that minimum wage increases have had some adverse employment effects but that these adverse effects have not happened across the board. For instance, the employment of migrant workers has not been affected because firms have strategically extended working hours to compensate for the increased labor costs brought about by minimum wage increases.

Mayneris et al (2018) exploited the natural experiment created by the introduction of the Minimum Wage Regulations in 2004 to analyze how the minimum wages affect a broad range of variables related to firm performance, including survival, average wage, employment, and productivity. Using firm-level data, they found that minimum wage growth allows more productive firms to replace the less productive ones and forces incumbent firms to become more competitive.<sup>30</sup> They also found that the overall effect of firm-level adjustments to minimum wage increases on employment was zero, with new workers canceling out workers who lost their jobs. Ma et al (2012) also used firm-level data but for a longer period (from 1998 to 2007) to examine the heterogeneous effects of minimum wage increases. They found that raising minimum wages significantly contributed to overall wage increases but that the employment effects varied between firms.

A study by Huang et al (2014) was the first attempt to study the employment effect of minimum wage increases using county-level wage data matched with firm-level data. In their model, the authors adopted a dynamic panel (difference GMM) estimator and used a “neighbor-pairs-approach” to control for unobserved heterogeneity common to “border counties” that are subject to different minimum wage changes. Their results showed that minimum wage increases have a significant negative impact on employment, with an estimated elasticity of -0.1. In other words, a 1 percent increase in the minimum wage reduces employment by 0.1 percent. They also found the effect of the minimum wage on employment depends on the firm’s wage level.

These results are consistent with findings by Fang and Lin (2015) and Wang and Gunderson (2011). The study by Fang and Lin (2015) is one of the most careful studies on minimum wages in China. The authors documented their three main results. First, minimum wage increases in China have had significant negative effects on employment in the eastern and central regions. Second, minimum wage increases have reduced the employment levels of young adults and low-skilled workers. Third, minimum wage increases have had particularly adverse effects on employment in those provinces where the regulations are vigorously enforced (even in places where average wages

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<sup>30</sup> Other studies that have evaluated the impacts of China’s minimum wages on firm performance or behavior include Gan et al (2016), Hau et al (2016), Long and Yang (2016), and Fan et al (2018).



increased rapidly). In a similar vein, Wang and Gunderson (2011) found that minimum wage increases had had negative employment effects on rural migrant workers between 2000 and 2007 in China's slower-growing and less prosperous central and western regions. However, they found no significant adverse employment effects on migrant workers in the more dynamic eastern region. These conclusions are consistent with the findings by Fang and Lin (2015).

Wang and Gunderson (2012) used a difference-in-differences approach to analyze the impact of minimum wage increases in 2003 on three groups: (i) all workers; (ii) rural migrants in urban areas; and (iii) female workers. As they did in their earlier paper in 2011, they compared differences in employment and wages between 2002 and 2004 in "treatment" provinces where the minimum wages were increased versus "control" provinces where they were not. In line with their 2011 findings, their 2012 results suggest that minimum wage increases in China did not have a statistically or economically significant impact on employment in the eastern region.

Contrary to common belief, some empirical studies have argued that the Minimum Wage Regulations have not adversely affected the employment levels of migrant workers. This is likely to be because the increases in minimum wages have often been offset by longer working hours. Yang et al (2014) investigated the impact of minimum wage increases on migrant workers' wages, employment, and working hours. They found that at the national level minimum wages have had little negative impact on migrants' employment and hourly wages for migrant workers have been unaffected because employers simply increase work hours to offset their rising labor costs due to higher minimum wages.

Using regional data, Li and He (2010) actually found a positive effect of minimum wage increases on the employment of rural-to-urban migrant workers in the Yangtze River Delta between 1995 and 2007. Similarly, Wen (2007) used provincial-level pooled cross-sectional data from 2004 to 2006 published by the Research Center for Rural Economy, the China Statistical Yearbook, and the China Rural Household Survey Yearbook. Using a general equilibrium framework, the author found that minimum wage increases had had a positive effect on employment and income distribution among rural migrant workers in those years. However, the connection between Wen's structural model and his econometric analysis appears somewhat tenuous.

Finally, Luo (2007b) documented a positive effect of minimum wage increases on rural workers' employment in the eastern and western regions between 1994 and 2005 but a negative effect in the central region. Consistent with these findings, in another study, the same author (Luo, 2007a) used local data for Shanghai from 1993 to 2005 and found a positive effect of minimum wage increases on rural workers' employment in this particular eastern province-level city.

In many settings, the introduction or increase of the statutory minimum wage is expected to increase the wages of low-wage groups (or at least those

low-wage workers who keep their jobs after the minimum wage has been introduced or increased). In turn, this tends to reduce earnings and income inequality. As female workers often make up a significant share of low-wage workers, the creation or increase of a minimum wage may also reduce the gender wage gap.

Because of data limitations, there have been very few papers that have tried to empirically investigate the effects of China's minimum wages on individual-level or household-level outcome variables other than wages and employment. One noteworthy exception is a paper by Lin and Yun (2016) that investigated the contribution of minimum wages to the well-documented rise in earnings inequality in China over the period from 2004 to 2009 using city-level minimum wage panel data and a representative Chinese household survey. They demonstrated that, over the period of analysis, increases in minimum wages reduced income inequality, particularly in terms of reducing the income gap between the median and the bottom deciles, *ceteris paribus*.

An earlier empirical study, Wen (2007), used pooled cross-sectional data at the provincial level to estimate the effect of minimum wages on employment and the income distribution of rural migrant workers between 2004 and 2006. The author found that increases in minimum wages had a positive effect on the employment levels of rural migrant workers over this period. In addition, it led to a narrowing of the income distribution for rural migrant workers. Wen's result was subsequently confirmed by two slightly more speculative studies by Wang (2011) and Wang (2013). Wang (2011) argued that minimum wages can have beneficial distributional effects in China by reducing income inequality between workers. Wang (2013) used simulations to show that increases in minimum wages can potentially reduce income inequality. Furthermore, the author's simulations indicated that the more stringent the enforcement mechanisms were, the greater the effect on income inequality. Using local time-series data from Chongqing City, Chen (2012) also found that increases in minimum wages could potentially mitigate the growing income gap between China's urban and rural areas.

While most studies have found that minimum wage increases in China have led to a decline in income inequality or at least have the potential to do so, Quan and Li (2011) reached a different conclusion. Using local data from Shanghai, they found the minimum wage has had a very limited effect on the income distribution. They argued that raising the minimum wage does not help to decrease the Gini coefficient, a commonly used measure of income inequality. It should be mentioned that their results have invited some criticism. For example, Lin and Yun (2016) pointed out that Quan and Li's analytical approach has some drawbacks including a small sample, simplistic assumptions, and unreliable model calibration.

A paper by Li and Ma (2015) is also noteworthy as it is currently the only empirical analysis that directly addresses the impact of minimum wages on the gender wage gap. The authors used micro survey data from the China Household Income Project (CHIP) for 1995, 2002, and 2007 and focused on

urban areas. They adopted the model used by Robinson (2002 and 2005) and found that the gender wage gap was wider in regions with higher levels of minimum wages. They then investigated whether this was because of a causal effect of minimum wages on the gender wage gap or because of unobserved heterogeneity or other factors. They used a difference-in-differences analysis to show that the correlation observed in the raw data was due to unobserved heterogeneity. According to their findings, at least in the long run, the implementation of China's current minimum wage system is helping to narrow the gender wage gap in urban China.

In terms of more detailed analysis, Li and Ma (2015) also decomposed the gender wage gap into a component attributable to different earnings-generating characteristics such as education or access to specific jobs (the "characteristics effect") and a component attributable to the returns to these characteristics (the "coefficients effect"). Their decomposition analysis showed that changing the minimum wage affects the returns to characteristics more than it affects the distribution of characteristics. The authors argued that this indicates that the minimum wage is a more effective tool for narrowing the gender wage gap than directly providing women with earnings-generating characteristics such as education or access to specific jobs.

## **4. China's Employment Protection Legislation**

### **Institutional Background**

As mentioned above, China's first ever important piece of employment protection legislation was the Labor Law of 1994. Compared to the Labor Law's regulations on other aspects of the labor market – such as promoting employment and setting wages – its regulations on labor contracts in its third chapter were very detailed. For example, they included detailed regulations regarding the formation of labor contracts, overtime, severance payments, and advance notices of dismissal. Other relevant regulations concerned the contents of labor contracts, categories of labor contract terms, and specific clauses for collective contracts.

However, as in the area of minimum wages, the Labor Law did not specify sufficient penalties for firms that did not comply with the employment protection regulations. By the late 1990s, China's urban labor market had become extremely vibrant, fueled by rural-to-urban migrant workers doing low-skilled and low-pay work. Despite the Labor Law's statutory protections, there was a widespread sense that these workers' rights were frequently abused by their employers. Many rural-to-urban migrants continued to work in informal jobs where employees were rarely given a signed labor contract and often were subject to and poor working conditions such as delayed wages, unhealthy working environments, and poor treatment by employers. They also had little access to the urban social insurance system. In addition, with the radical reform of China's state-owned enterprises (SOEs) starting

in around 1998, many workers were laid off or became unemployed. Most of these workers were poorly educated and found it hard to find new jobs so found it necessary to enter the informal sector.<sup>31</sup>

In the mid-2000s, as China's rapid economic development continued and the population's age structure continued to change, labor shortages began to emerge. This new situation combined with the continued revelations of widespread abuses of workers' rights created the circumstance for the enactment of a series of laws meant to improve worker protection, including the Employment Promotion Law and the Labor Mediation and Arbitration Law. The Employment Promotion Law took effect on January 1, 2008, and the Labor Mediation and Arbitration Law on May 1, 2008. These laws were, in effect, revisions and refinements of the Labor Law.

Most importantly, to address the increasing number of reported labor abuses and growing concerns over social unrest, the National People's Congress passed the Labor Contract Law, which was adopted by the 28<sup>th</sup> session of the Standing Committee of the 10<sup>th</sup> National People's Congress on June 29, 2007 and took effect on January 1, 2008. The Labor Contract Law was formulated to improve the labor contract system, to specify the rights and obligations of the parties to labor contracts, to protect the lawful rights and interests of employees, and to build and develop harmonious and stable labor relationships. The Law kept the basic framework of the Labor Law of 1994 but made substantial additions with the aim of improving the protection of workers' rights. According to the Law's proponents, this brought China's labor regulations more in line with international standards.<sup>32</sup>

Among the Labor Contract Law's myriad provisions, at least three stand out for their importance in terms of tightening employment protection for covered workers. First, the Law clarified and tightened rules regarding individual and collective dismissals, for instance, requiring firms that are found to have dismissed workers unfairly to rehire them or pay them compensation. Other key changes concerning dismissals included new reporting and consultation requirements in the case of mass layoffs, an explicit right for employees to terminate a labor contract with just cause, and a prohibition against employers terminating the contracts of employees who have been working continuously for 15 years and have less than five years before they reach the legal retirement age. Second, the Law stipulated specific severance payments, usually amounting to one month's wage for each year of employment. Third, the Law formulated more detailed regulations on

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<sup>31</sup> Examples of coverage of reported labor abuses in the international media include "In Chinese Factories, Lost Fingers and Low Pay," *The New York Times*, January 8, 2008; "U.S. Group Accuses Chinese Toy Factories of Labor Abuses," *The New York Times*, August 22, 2007; and "Reports of Forced Labor Unsettle China," *The New York Times*, June 16, 2007.

<sup>32</sup> See Cooney et al (2007) for an overview of the main provisions of the Labor Contract Law and the policy debate preceding and accompanying its adoption.

fixed-term employment contracts and placed some restrictions on the use of such contracts. In particular, it stipulated that fixed-term contracts could only be renewed once and would then need to be transformed into open-ended contracts.

The discussion of open-ended and fixed-term contracts in the Labor Law of 1994 and the Labor Contract Law of 2007 illustrates how the Labor Contract Law generally tightened employment protection legislation and at the same time provided more detailed and arguably enforceable provisions. According to the Labor Law of 1994:

*In case an employee has worked for an employer for ten years or more and the parties involved agree to extend the term of the labor contract, an open-ended labor contract shall be concluded between them if the employee requests.*

In contrast, according to the Labor Contract Law of 2008:

*An employer and an employee may conclude an open-ended labor contract upon reaching a negotiated consensus. If an employee proposes or agrees to renew his labor contract or to conclude a labor contract in any of the following circumstances, an open-ended labor contract shall be concluded, unless the employee requests the conclusion of a fixed-term labor contract: (1) The employee has been working for the employer for a consecutive period of not less than ten years; (2) when his employer introduces the labor contract system or the state-owned enterprise that employs him re-concludes its labor contracts as a result of restructuring, the employee has been working for the employer for a consecutive period of not less than ten years and is less than ten years away from his legal retirement age; or (3) prior to the renewal, a fixed-term labor contract was concluded on two consecutive occasions and the employee is not characterized by any of the circumstances set forth in Article 39 and items (1) and (2) of Article 40 of the Law. If an employer fails to conclude a written labor contract with an employee within one year from the date on which it starts hiring the employee, the employer and the employee shall be deemed to have concluded an open-ended labor contract.*

The Labor Contract Law included specific penalties for employers who fail to sign formal contracts with their employees. It required written contracts for all workers at the commencement of any labor relationship or within one month thereafter. The law specified that failing to give an employee a signed contract would require an employer to pay a penalty of double the wage paid to the employee by the employer. Compared with the Labor Law, the Labor Contract Law contained greater protections for employees in terms of health care, social insurance, and working hours. There were also more detailed regulations on the conclusion, performance, and amendment of labor contracts, on the termination and ending of labor contracts, on collective contracts, and on monitoring inspections and legal liabilities. In addition, regulations on competition restrictions were included in the law in order to protect the trade secrets of employers, to promote innovation, and to promote

fair competition.

For the first time in Chinese law, the Labor Contract Law also explicitly regulated part-time employment and employment through temporary work agencies, also known as labor dispatch agencies. Initially, the law placed few restrictions on these nonstandard forms of employment. However, soon after the introduction of the Labor Contract Law, concerns mounted regarding the increasingly important role played by temporary work agencies, which were widely seen as undermining some of the Law's provisions. The use of temporary work agencies appeared to be widespread and not confined to foreign investment companies. Estimates are necessarily imprecise, but in 2011 it was estimated that such agencies arranged work for some 37 to 60 million workers. According to the Labor Contract Law, these workers were supposed to enjoy the same pay as full-time employees of the company doing the same job, as well as the same statutory benefits and the same severance pay in case of termination. Nonetheless, there was a significant number of complaints that workers who had been hired through these agencies were being abused (Dezan Shira and Associates, 2013).

Consequently, the Labor Contract Law was revised in 2012 to limit employers' use of temporary work agencies, to better protect workers, and to promote the principle of equal pay for equal work. The Decision on Revising the Labor Contract Law was adopted at the 30<sup>th</sup> Meeting of the Standing Committee of the 11<sup>th</sup> National People's Congress on December 28, 2012 and took effect on July 1, 2013. The revisions made in 2012 were mainly related to the regulation of temporary work agencies. For example, Article 57 of the original Labor Contract Law states that:

*Labor dispatch firms shall be established in accordance with the relevant provisions of the Company Law and have registered capital of not less than 500,000 yuan (RMB).*

In the revisions of 2012, the amount of registered capital was raised to 2 million yuan (RMB), and labor dispatch firms were required to have fixed operation sites and facilities. In addition, Article 63 of the original Labor Contract Law states that:

*Labor dispatched employees shall have the right to receive the same pay as that received by employees of the employing unit for the same work. If an employing unit has no employee in the same position, the labor compensation shall be determined with reference to the labor compensation paid in the place where the employing unit is located or with reference to the labor compensation paid to employees in a similar position.*

Since the revisions of 2012, the law now specifies more detailed regulations defining "equal pay for equal work." Moreover, the revisions limited the share of workers that a company could hire through temporary work agencies and aimed to organize and formalize these agencies with the aim of raising their standards. The intention of the 2012 revisions was to

strengthen enforcement and accountability by making agencies' registration mandatory and by imposing stricter penalties for violations of the law.

In its original 2007 form, the Labor Contract Law stated that dispatch workers could “generally” only be hired for three types of positions – temporary, auxiliary, and substitute positions. To tighten loopholes on this type of work, the word “generally” was deleted in the revisions, meaning that dispatch workers can now only be hired for these three specific types of positions. The revisions explicitly defined temporary employment as positions that last no longer than six months, substitute employment as a replacement for a permanent employee who is away for vacation, study, health-related issues, or other reasons, and auxiliary work as providing services that are auxiliary to the core business of the company (Dezan Shira and Associates, 2013).

The most recent regulations in the realm of employment protection legislation are the Temporary Provisions on Labor Dispatch, which were issued by the MHRSS in January 2014. They included even more detailed provisions concerning some aspects of temporary work agencies, such as the scope of work to be performed by labor-dispatched employees, the proportion of such employees allowed per firm, the conclusion and performance of labor contracts and labor dispatch agreements, the termination and ending of labor contracts, and coverage by social insurance. For example, concerning the proportion of labor-dispatched employees, the 2012 revisions to the Labor Contract Law stated that, “The employing units shall strictly control the number of labor dispatched employees and shall not exceed a certain proportion of the total amount of labor employed.” However, the 2014 Temporary Provisions on Labor Dispatch contained markedly more restrictive regulations: “The employing units shall strictly control the number of labor dispatched employees and shall not exceed 10 percent of the total amount of labor employed.”

### **Strictness in Principle and Practice**

Several analyses have shown that, following the adoption of China's Labor Contract Law, employment protection became significantly more restrictive in comparison with the norm in most other countries – at least in terms of the letter of the law. Using the Employment Protection Legislation Index, a measure developed by the OECD (OECD, 2017), Gallagher et al (2015) found that, since the implementation of the Labor Contract Law, China ranks third among all OECD countries in terms of the strictness of their employment protection legislation. Using a similar methodology, Chen and Funke (2009) demonstrated that the costs mandated by the Labor Contract Law for firing an employee are higher in China than in many other developing countries.

In a similar vein, World Bank (2014) estimated that the passage of the

Labor Contract Law almost doubled China's score on the Employment Protection Legislation Index from 1.36 in the early 2000s to 2.71, which showed the government's interest in providing workers with more employment protection. Among the law's most significant changes as measured by the index was the requirement that employers give employees an open-ended employment contract after two consecutive fixed-term contracts or ten years of service. Another key provision of the law was to require employers to provide severance pay even to workers on fixed-term contracts if a contract expires and is not renewed. Finally, China's score on the index was also significantly impacted by the law's general restrictions on the use of labor dispatch agencies to find workers to fill temporary, auxiliary, and substitute positions.

As mentioned in Chapter 1, since employment protection legislation directly increases the costs of hiring or firing employees, standard economic theories usually predict that these stricter standards will restrict labor reallocation and increase labor market rigidities (Hopenhayn and Rogerson, 1993). Such concerns also apply to the Labor Contract Law, and many scholars have argued that the law may have worsened the business environment and increased labor costs, especially given the global economic crisis in 2008 to 2009 and the ensuing slowdown of economic growth towards a "New Normal."

There are also reports that firms in China have responded strategically to minimize the impact of the Labor Contract Law. As mentioned above, a key provision of the law is that, after a worker completes two fixed-term contracts or ten years of employment, his or her employment contract must become open-ended. In addition, employees with open-ended contracts can only be terminated for cause. Before the introduction of the Labor Contract Law, many employers in China employed workers under a series of fixed-term contracts in order to be able to terminate their employment without cause. While this option has no longer been on the table since the law took effect, there have been reports of firms firing and then rehiring the same workers to prevent them from obtaining the right to have an open-ended contract.

While some scholars have worried that the provisions of the Labor Contract Law might be overly restrictive and therefore might be having a damaging impact on workers and firms, others have voiced doubts about whether the law is actually being enforced on the ground. In fact, one explicit objective of the law was to extend the covered segment of the labor market. As mentioned above, it specified that almost all labor relationships warrant a written employment contract, and it imposed harsh penalties for noncompliance with this provision. Nevertheless, there is ample evidence that, at least until very recently, large parts of the labor market remained outside of the scope of the law.

In this context, Gallagher et al (2015) examined the practical implementation of the Labor Contract Law and its impact on workers. They used data from the China Urban Labor Survey (CULS) collected by



the National Bureau of Statistics (NBS) in 2009 and 2010 and a nationally representative survey of over 1,600 manufacturing firms in China conducted by the People's Bank of China in the fall of 2009. The authors analyzed the enforcement of the Labor Contract Law, the likelihood of workers having a labor contract, workers' awareness of the content of the law, and their likelihood of initiating disputes, and the determinants of worker satisfaction, among other issues. One of their main findings was that, although China's central government had made substantial efforts to enforce the law's provisions, its enforcement still remains patchy and varies substantially between provinces. A substantial proportion of workers still did not have signed labor contracts with their employers. In fact, Tang (2008) argued that local governments might be reluctant to enforce some of the law's provisions as they are regarded as overly restrictive or even counterproductive.

Wang (2013) also found that the implementation of the Labor Contract Law varied by region and also among different types of workers, especially between urban local workers and rural-to-urban migrant workers. According to this study as well as to Gallagher et al (2013), workers -especially those with low education and migrant workers – have little awareness of the law.

More generally, there is growing concern about certain characteristics of the Chinese labor market that make it easy to violate labor regulations. One issue that has received widespread attention is the high and, at least according to some research, increasing incidence of informal employment. In their study of informal employment in China, Liang et al (2016) divided the urban labor force (including rural migrants who work in urban areas) into three categories: (i) formal employees; (ii) casual workers; and (iii) the self-employed. Formal employees are salaried workers with employment contracts. Casual workers are wage workers without a contract who may be employed in the formal sector (without a contract) or in the informal sector. The self-employed consist of business owners who are sole proprietors and work alone, those who own a home-based enterprise, or those who run a business with fewer than seven employees.<sup>33</sup> Using national representative labor force surveys, the authors found that the percentage of formal employees in the Chinese workforce fell from 65 percent in 2007 to 43 percent in 2013, while the proportion of casual workers grew from 24 percent to 42 percent in the same period. The proportion of employees who were business owners rose from 11 percent to 15 percent in the same period. Hence, between 2007 and 2013, there was a significant change in China's labor market, with the share of workers who were self-employed or casually employed becoming a majority (57 percent) of employees, while the proportion of employees with formal contracts declined.

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<sup>33</sup> In China, businesses with more than seven employees are required to register with the government as enterprises. Business with fewer than seven employees are viewed as petty entrepreneurs and are subject to much less regulation than registered enterprises, although they too are expected to register with local industrial and commercial bureaus (Park et al, 2012).

The Liang et al (2016) study found that running a small business or being self-employed, although considered informal employment, is not always a sign of vulnerability. In many cases, workers choose this form of employment because it corresponds with their desire for flexibility while taking care of dependents or because self-employment is economically convenient. Moreover, the self-employed are often skilled and have risk-taking personalities. However, the growth in casual workers is seen as a cause for concern because this group of workers is potentially more vulnerable. Not having an employment contract means that these workers do not benefit from any employment protection, which weakens their case if they pursue dispute resolution mechanisms such as arbitration or lawsuits (Park et al, 2012).

According to Liang et al (2016), the continued scarcity of employment contracts stems from the high incidence of informal employment and from the government's inability to enforce labor regulations in practice. As Liang et al (2016, p. 6) state, "the law is only legally binding with more established firms or entities, typically those in the formal sector. Furthermore, private business employers may well avoid such laws due to the lack of mechanisms to monitor compliance. Employers in service sectors [...] typically do not offer contracts and social insurance payments to their employees. [...] To save employment costs, firms in the formal sector often hire temporary employees for short-term goals or hire low-skilled manual laborers to do unskilled jobs without offering formal contracts (for example, as cleaners, security guards, or low-level office workers)."

Somewhat in contrast to the findings of Liang et al (2016), most relevant studies have found that the coverage of employment contracts has increased over time. According to Cui et al (2013), the enactment of the Labor Contract Law significantly increased the proportion of employees across China signing labor contracts to 97 percent in 2010, up from 76.5 percent in 2007. There were about 9.2 million collective contracts at the end of 2010 (an increase of 83.5 percent from 2007), covering about 114 million employees. Cheng and Yang (2010) also found that the law had increased the coverage of employment contracts as well as the proportion of open-term contracts.

The literature shows that the effect of the Labor Contract Law on workers has varied across employers of different sizes and ownership structure. Ho (2009) reported that, in the two years after the law had come into force, 94 percent of employees in large firms had signed employment contracts, compared to 64 percent in medium-sized and small firms. Moreover, again according to Ho, the coverage of employment contracts reached 86 percent in foreign-invested enterprises, compared to 58 percent in locally owned firms.

Some relevant studies have paid particular attention to rural-to-urban migrant workers, one of the largest and traditionally least protected groups of workers in China's labor market. As already mentioned, they are also particularly prone to workplace abuse since they tend to lack proper documentation and often will be willing to work even under poor labor conditions. According to some existing research, rural-to-urban migrant

workers who live and work in a location different from the one on their *hukou* continue to be prone to taking jobs that offer poor labor conditions despite the existence of the Labor Contract Law.

Park et al (2012) found that, depending on which of four different definitions of informal employment was used, anywhere from 38 percent to 91 percent of migrant workers were informally employed and that the percentage of informal employment was much higher for migrants than for residents. Furthermore, Liang et al (2016) found not only that residents with an urban *hukou* are more likely to be formally employed than rural-to-urban migrants but also that, between 2003 and 2013, more migrants than urban residents lost their formal employment. This was true whether it was described in terms of the total number of people or as a share of employment. At the same time, Freeman and Li (2015) used cross-sectional data from surveys of migrant workers in the Pearl River Delta in Guangdong Province before and after the enactment of the Labor Contract Law to assess its effects on employment contract coverage. In line with the broader literature, their evidence showed that the law had substantially increased the percentage of migrant workers with written contracts.

## Impacts on Workers

A small but growing strand of literature has begun to investigate not only whether the Labor Contract Law's implementation has achieved its legislative purpose but also how the law has affected different outcome variables as well as on different groups of workers including urban workers, rural-to-urban migrant workers, and others. The outcome variables that have been studied include overall employment, unemployment levels, wage levels, social insurance coverage, and the number of labor disputes.

Some studies have focused on the Labor Contract Law's impact on employment or unemployment, with mixed findings. Chen and Funke (2009) found that, given how fast the Chinese economy was growing, the introduction of the Labor Contract Law had had only a minimal negative impact on employment. In contrast, Gallagher et al (2015) and Liu (2016a) found that the Labor Contract Law decreased overall employment (or dampened the increase in overall employment), but Gallagher et al (2015) also pointed out that, although higher labor costs may have had a negative impact on the growth of manufacturing employment, they have not led to an overall increase in aggregate unemployment.

The results of analysis on the impact of the Labor Contract Law on wages and working hours have generally been more positive. Cui et al (2013) used data from the Annual Surveys of Industrial Production (1998 to 2008), a large micro-level data set of Chinese manufacturing enterprises with annual sales over 5 million RMB to examine the impact of the Labor Contract

Law on the Chinese labor market. Their results suggested that the law had increased growth in wages and nonwage benefits in the manufacturing sector by 21.6 percent and 13.8 percent respectively. Also, according to Gallagher et al (2015), the introduction of the Labor Contract Law did not prevent the rapid growth of real wages that happened in 2009 and 2010. Cheng et al (2015) investigated the effect of a labor contract on various labor market outcomes using sample data on urban and migrant workers in China from the Rural-Urban Migration in China project (RUMiC 2008). The main methodological contribution of their paper was the use of propensity score matching, in which having an employment contract is considered the “treatment.” Using this approach, the authors confirmed that the adoption of the law had significantly positive effects on workers’ wages. Liu (2016b) found that the law increases working hours, but Meng (2017) pointed out that the implementation of the Labor Contract Law occurred at the same time as a labor shortage and argued that the effects of the Labor Contract Law on the labor market were multi-faceted but included negative effects on wages and working hours.

The literature focusing on social insurance coverage generally finds that the Labor Contract Law increased coverage. Using pooled cross-sectional migrant survey data from the CHIP in 2007 and 2008 and a logistic regression model, Gao et al (2012) found that an employment contract, especially a long-term contract, considerably increased the probability of migrant workers being covered by social insurance. They also found that moving from a short-term contract or no contract to a long-term contract significantly increased the probability of workers having social insurance, whereas losing a long-term contract reduced their likelihood of having social insurance. These results indicate that the Labor Contract Law is critical to the well-being of migrant workers as it secures their social insurance coverage and generally protects their labor rights. Gallagher et al (2015) and Freeman and Li (2015) also found that the adoption of the law increased coverage, particularly for migrant workers. Cheng et al (2015) and Meng (2017) confirmed that the adoption of the Labor Contract Law had significantly positive effects on workers’ social insurance coverage. With regard to the receipt of social benefits, Cheng et al (2015) found that the Labor Contract Law had a larger effect on urban workers than on migrant workers.

In terms of the other ways in which the Labor Contract Law has affected workers, Remington and Cui (2015) found that it increased the number of labor disputes, although this effect varied by region. Cheng et al (2015) argued that the adoption of the law has had significantly positive effects on workers’ self-reported well-being. As already mentioned, Freeman and Li (2015) focused specifically on migrant workers and found that the Labor Contract Law reduced the likelihood of wage delays for these workers and increased the likelihood of them having a union in their workplace. Overall, existing studies using various datasets generally show that the Labor Contract

Law has increased the coverage of employment contracts and raised wage levels and increased the proportion of workers with social insurance while probably having little adverse impact on employment levels.

### **Impacts on Firms**

Studies that have focused on how the Labor Contract Law has affected firms have generally found some negative effects, but some have reached more nuanced conclusions. A first group of papers, including Chen and Funke (2008) and Cooper et al (2018), finds that the Labor Contract Law has had an almost uniformly negative impact on firms. However, a second group of studies including those by Yan (2015), Cui et al (2013), and Cheng and Yang (2010) found that whether firms in China were negatively impacted by the Labor Contract Law has depended to a large extent on the firm's size, ownership type, and other firm-specific characteristics. A third group of studies including those by Li et al (2009), Huang (2012), and Ni and Zhu (2016) have argued that the Law has had no significant negative effects on law-abiding enterprises. Overall, the second group of studies is the largest and the third group the smallest, which points to a tentatively emerging consensus that the law has had a somewhat but not uniformly negative impact on firms.

Among the first group of studies, Chen and Funke (2008) simulated how firms might adapt their behavior to the constraints of labor regulations and to what extent the Labor Contract Law might affect labor demand. To this end, they extended a real options model to incorporate a rich specification of labor adjustment costs, therefore creating a theoretical framework within which to study the links between labor regulations, option values, and the choice to hire and the timing of hiring. The authors' simulation results implied that the Labor Contract Law on its own would not directly reduce labor demand from law-abiding firms but, by outpacing labor productivity growth, induced future wage growth would slow down the growth of labor demand.

Cooper et al (2018) circumvented any methodological difficulties in identifying the Labor Contract Law's causal impacts by examining the labor demand, productivity, and welfare implications of the law in a general equilibrium framework with labor adjustment cost. Using data from the Annual Surveys of Industrial Production for 1998 to 2007 and estimating model parameters using simulated method of moments (SMM), they found that frictions due to the increases in severance payments mandated by the law have had a significant effect in terms of reducing labor mobility. They also found that the increase in severance payments has led to a sizable increase in firm size, lower aggregate productivity, a lower level of aggregate labor demand, an increase in the exit rate of firms from the market, and a welfare loss. As a result, they concluded that the law has dampened the growth of China's economy. They argued that, if the law had been in place in the decade before 2008, it would have reduced China's annual growth rate by nearly 1 percentage point.

The second group of studies argued that the Labor Contract Law has had some adverse effects on firms but these have not been uniform. Zhang (2009) and Cheng and Yang (2010) both found that the Labor Contract Law increased firms' firing costs as well as their overall labor costs but that these effects have varied by firms' ownership type, size, and industry. Zhang (2009) found that the adverse effects of the law had mainly been experienced by small firms, private firms, and firms in the service and construction sectors. Based on a survey of almost 600 human resources managers, Cheng and Yang (2010) found that the law had significantly increased the incidence of employment contracts, extended the term of contracts, increased the number of open-ended contracts, and led to firms adopting more cautious recruitment and dismissal decisions. These developments increased labor costs and restricted labor flexibility to some extent, but the effects varied among enterprises of different sizes and types of ownership.

Zheng (2009) and Lan et al (2015) also found that the effects of the Labor Contract Law varied among different types of private firms as well as between private and state-owned (and collective-owned) enterprises. Lan et al (2015) further found that the effects of the law were also related to firms' product composition, market orientation, and geographic location. Pan and Chen (2017) argued that the law has adverse effects on investments by labor-intensive private firms but less on those by SOEs.

Using data for 2006 to 2008, Yan (2015) founds that private firms as a whole fared worse than SOEs during this period in terms of firm-level year-to-year employment changes. In particular, employment fell and labor costs rose in those firms that were offering low wages. The author argued that this development was attributable to the Labor Contract Law. However, he also argued that the introduction of the law had a negligible effect on employment and wages in firms offering high wages. Furthermore, he founds that the new law led to higher turnover among firms that did not offer their workers any skills training. Finally, with regard to the extensive margin of labor demand, he showed that firm exits rose significantly in regions that experienced abrupt declines in labor mobility, possibly due to stricter enforcement of labor regulations following the enactment of the law. Arguably, this might be an indication of a large incidence of mass layoffs.

Cui et al (2013) found that the impact of the Labor Contract Law on firms varied substantially across different types of firms. Large and domestically owned firms experienced the greatest impact in terms of wage growth as did firms in regions with high unionization rates and high skill intensity. The impact on SOEs and collective firms was greater than that on private firms. The authors also examined the impact of the Labor Contract Law on labor market rigidity and found that the law significantly reduced the wage elasticity of labor demand, especially in highly unionized and skill-intensive industries. In contrast, they found that the Labor Contract Law had less of an effect on the wage elasticity of globalized industries and those with a high proportion of female employees.

The third and smallest group of studies argued that the Labor Contract Law has not had any negative impact on firms at all and, on the contrary, may have helped to foster the transition of China's economy. Based on interviews with enterprise managers, Li et al (2009) investigated the effects of the law on the competitiveness of China's labor-intensive industries and found that it did not increase the costs of law-abiding enterprises, it has helped to maintain an orderly employment system, and there are no indications that it reduced labor demand. These findings are in contrast with the consensus of much of the literature and may be explained by the subjective views expressed by enterprise managers in the interviews.

Also, in the third group of studies, Liu (2008) founds that firms had various ways to cope with the implementation of the Labor Contract Law. Huang (2012) found that, although the Labor Contract Law increases firms' firing costs, it may be good for knowledge-intensive industries and for increasing the demand for high-skilled workers. It may also help China's labor-intensive industries to transition successfully into knowledge-intensive industries. Finally, Ni and Zhu (2016) found that the law increased innovation in civilian-owned firms, firms with higher innovation demands, and firms in industries facing high levels of competition. Consequently, they argued that the law was helpful in promoting China's transition towards becoming a high-income economy.

## 5. Conclusions

This chapter discusses the institutional environment and the relevant global and local literature regarding two key labor policies in China – the Minimum Wage Regulations and the Labor Contract Law. The Minimum Wage Regulations promulgated in 2004 reformed the previous minimum wage regime in several important respects. In particular, they extended the coverage of minimum wages to new groups of workers such as part-time workers and quintupled the penalties on employers for violations or noncompliance. In addition, the regulations required provincial governments to implement a minimum wage increase at least once every two years. Since the Minimum Wage Regulations came into effect, there have been frequent and substantial increases in minimum wages and continued debate about their role in and impact on China's labor market. The Labor Contract Law is the most important piece of employment legislation in China. The Law went into effect in 2008 and was designed to improve the labor contract system, to specify the rights and obligations of the parties to labor contracts, to protect the lawful rights and interests of employees, and to build and develop harmonious and stable labor relationships. While the Labor Contract Law kept in place the basic system of employment protection legislation that had been defined by the Labor Law of 1994, it made substantial revisions to this system. Like the Minimum Wage Regulations, it has been the subject of spirited and academic and public debate.

The general conclusion reached by the existing literature on China's Minimum Wage Regulations is that, over most of the last 15 years, China's minimum wages have been so low that they have not mattered directly for most workers. As a result, most relevant studies argue that at the macro level the impact of statutory minimum wages on actual wages and employment has been muted or nonexistent. At the same time, there have been some strong indications that minimum wages have had a positive effect on certain groups of low-wage workers. The wages of these workers may have increased, general employment levels may have dropped modestly, and inequality may have fallen slightly. These findings are in line with predictions by standard economic models.

More specifically, the existing literature on the Minimum Wage Regulations came to the following conclusions:

- On a macro level, minimum wage increases are likely to have had no significant effects on wages or wage growth, but the wages of low-income workers may have increased.
- Some empirical studies of the employment effects of the Minimum Wage Regulations found no effects while others found some negative employment effects, especially for low-income workers and workers in less-developed regions.
- Because of a lack of adequate data, there have been few attempts to study the impact of minimum wages on gender wage differentials but there is some evidence that, in the long run, increases in minimum wages narrow the gender wage gap in urban China.
- Most of the limited number of studies on the distributional effects of the Minimum Wage Regulations agree that these help to reduce income inequality.

The literature on the Labor Contract Law overwhelmingly concludes that it has increased the coverage of employment contracts and the proportion of workers covered by social insurance. As far as the law's impact on workers and firms is concerned, a consensus has yet to emerge, but it appears likely that it has had little adverse impact on employment or other worker-related variables. However, it appears that it may have had some negative impact on firms depending on the firm's size and ownership type.

These findings are largely consistent with the broader literature on minimum wages and employment protection in other developing and emerging countries. As discussed in Section 2. , the empirical literature on developing countries generally shows that: (i) minimum wages have the potential to reduce poverty and wage inequality and generally have an insignificant, or only modestly negative impact on aggregate employment and



have a positive effect on wages and (ii) employment protection legislation usually has either no impact or only a modest negative impact on aggregate employment, and can help to reduce wage dispersion.

It should be noted that the existing empirical evidence from China on minimum wages and employment protection legislation is still somewhat limited. As of now, there are significant knowledge gaps about the implementation and enforcement of these policies and about their impact on various outcome variables and on different groups of workers. As a result, the existing literature is not able to definitely settle the debate over the extent to which minimum wages and employment protection legislation provide social and economic benefits, nor whether they are a source of distortions that impede the functioning of labor markets. Neither the mechanisms for setting minimum wages nor the effects of minimum wages on distributional outcomes are well understood. Similarly, while the literature has documented the strictness of employment protection legislation following the introduction of the Labor Contract Law and the ensuing increase in the coverage of employment contracts, some of these findings have not accounted for more recent developments such as China's continued rapid economic development and the legal reforms of 2012 and 2014. There is also no real consensus on how the law has affected the outcomes of covered versus uncovered workers. The discussions in Chapters 4 to 9 of this volume aim to help to close some of these knowledge gaps.

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# Implementation of Minimum Wage Regulations

Chenggang Zhang, Cheng Chang, and Xiaofei Chen

## 1. Introduction

The process used for determining and adjusting minimum wage levels in China is still somewhat unknown. To date, no detailed study has been done on how minimum wage levels are determined and adjusted at the provincial level. Instead, the previous literature on the country's minimum wage has focused on its effects on employment, income distribution, firms' profits and productivity, and other economic variables. It is also worth noting that the framework for minimum wage policy in China remains relatively immature. This gives provinces a considerable degree of flexibility to adjust minimum wages in response to changes in economic development, but different stakeholders tend to treat the procedures for adjusting the minimum wage as bargaining chips.

The objective of this chapter is to systematically document how minimum wages are set *de facto* and how China's minimum wage regulations are implemented. To accomplish this, we selected two provinces: (the Shanghai City municipality in the Yangtze River Delta, which operates directly under the central government, and Guangdong Province in the Pearl River Delta) and identified and analyzed the practices used in each region to set and adjust the minimum wages.

Most studies of the minimum wage treat it as an exogenous variable that changes as a result of a shock and, therefore, they evaluate the impact of this shock on key economic outcomes. However, in practice, the adjustment of the minimum wage involves multiple stakeholders, and the procedures for making this adjustment are full of compromise and coordination between trade unions, employers' organizations, and the government. The final decision is a synthesis that is likely to result from similar or even the same variables that scholars examine when estimating the impact of changes in the minimum wage. Furthermore, since minimum wage levels are adjusted

every year or every two years in most provinces, firms can anticipate the most likely approximate increases in the minimum wage and respond in advance. Consequently, without knowing the mechanisms used to adjust the minimum wage, an economist might establish the wrong causal relationship or deduce a false explanation of the effects of the minimum wage in China.

Another strand of the economic literature, one that is well developed by Chinese academics, focuses on examining the factors that influence how minimum wage levels are determined. Chapter 3 discusses the existence of interdependent minimum wage levels across local jurisdictions, attributing this to: (i) prevailing incentives for local governments to engage in a “race to the bottom” in setting their minimum wages to attract multinational companies and foreign capital and (ii) the attitudes of some government officials who may not want to reduce labor protection even while wanting to compete economically with neighboring governments (Kanbur et al, 2017). Again, both of these explanations assume that local authorities behave in certain ways that may not be the case in practice.

This study is closest to another strand of the literature that focuses on the tripartite consultation mechanism in China, in which trade unions and employers’ associations are involved in decision-making about the minimum wage along with the government. The tripartite system in wage adjustment in China is worth noted legitimately and practically. Since its introduction in the early 2000s, the tripartite consultation mechanism is witnessed to be developed rapidly and comprehensively. The institution extends from national, provincial and municipal meetings to local meetings at city, county/township/district levels, while the configuration remains the same. At the national level, the TCM institution is chaired by the deputy minister of MHRSS, while the two vice chairs are from the two national employer association and the national federation of trade unions. By 2009 all provinces had established the TCM system. Many of them reached down to the city, town, and street levels. It is expected to play an increasing important role in adjusting minimum wages in China, particularly because it serves to engender the wage drift at the workplaces. The extent of decreasing influences of the enterprise trade unions due to their institutional weaknesses in improving the wage levels can also be compensated by the tripartism outside the enterprises. Some researchers believe it has been crucial to achieving decent working conditions for Chinese workers (Cao ,2016). However, according to some existing research, in a host of cities, trade unions and employers’ associations are rarely included in setting the minimum wage in reality, except in a few regions where spirited debates are held in the tripartite consultation mechanism before a new minimum wage level is set (Li and Yuan, 2011). In some regions, the only consultations that take place are between the government and the trade unions (Renmin University Research Group, 2010).

The studies have shown that the main obstacle preventing the tripartite consultation mechanism in China from fully meeting expectations is the uneven power distribution between labor unions and employer associations.

At the regional level, because trade unions heavily have formal government status, which makes them active players in labor policy-making (Chen, 2009). In contrast, representatives of employer associations are either absent from the decision-making process or else their status is unclear (Clarke and Lee, 2002; Chen, 2010; and Zhao, 2010). In recent years various enterprise organizations have been included in the tripartite system in some regions at least in a nominal way. For example, in Dalian City, the tripartite consultation mechanism contains three delegates from the Trade and Economic Commission and two delegates from the Dalian Enterprise Confederation (Clarke and Lee, 2002).

The studies have identified four major factors that contribute to the disadvantaged position of employer associations. First, the membership of the authorized employers' association, the China Enterprise Confederation/China Enterprise Directors Association (the CEC), is still dominated by large state-owned enterprises (SOEs) and do not have many branches at the local levels (Clarke and Lee, 2002). While non-state enterprises also have associations, such as the All-China Federation of Industry and Commerce (ACFIC), and there are other employer associations and Chambers of Commerce, coordination within these representative bodies is poor, and their negotiating power is weak because they are usually set up under government departments to serve the latter's specific needs (Ogden, 2000 cited in Clarke and Lee, 2002).

The second factor is budgetary: employer associations usually have to survive on their membership fees and on any revenues that they receive from the services that they provide. Those funds are not guaranteed, though, since membership is voluntary (Clarke and Lee, 2002). Thus, their budgets are too tight to allow them to operate efficiently.

Third, organizations on both sides of the employer-employee negotiations lack credibility with their members. The relationship between the main employer associations and their members is usually too loose to be representative. The members are accustomed to making demands of the association but do not respect its authority to lead them in negotiations. In other cases, enterprises have been found to use the tripartite system as a way to petition the city government rather than using it as intended, namely as a way to participate as employers in decision-making about labor issues (Clarke and Lee, 2002).

Fourthly the unclear and partly contradictory role of workplace trade unions is an impediment of the actual effective of the minimum wage. They are dependent on the management and workers have no rights to strike. Lack of the representative and bargaining power, workers are unable to exert good leverage on restraining the employers' behaviors. They are, as a consequence ready to be infringed by the employers not only on the basic wage standards but the general working standards.

## 2. The Minimum Wage Adjustment Process

In spite the fact that participating the making process of minimum wage is one of the legitimate functions of the Chinese tripartite system, it is incapable to accomplish this function owing to a number of disadvantages in organizations of the workers and the employers. Unless they are depoliticized and becoming more responsible for their members in the tripartite system (Wang et al, 2012 and Taylor et al, 2003), the power and status balances between labour and capital still remain to be a problem. Now we move to examine the status quo, the advantages and disadvantages and the authors' reviews, based on empirical studies in the two provinces on the specific and efficient methods of the minimum wage decision in China.

According to the 2004 Regulations on Minimum Wages, the level of the minimum wage is set through a tripartite consultation mechanism in each province. However, the 2004 regulations did not elaborate any details of how that mechanism was to function in practice. Consequently, the tripartite consultations are conducted differently in different provinces. Once the results of the negotiations of a tripartite consultation mechanism are authorized and approved by the provincial government, these decisions are placed on the record by the Ministry of Human Resources and Social Security (MHRSS), which retains the right to instruct the provincial government to adjust the plan.

Most of the time, provincial governments organize and determine their minimum wage levels with no input from or communication with the prefecture, city, or county levels of government, who simply abide by those decisions made from above. and

However, a few provinces follow a bottom-up approach. In Zhejiang Province, each prefecture-level government discusses the minimum wage level and its growth rate and passes its advice on to the provincial government, which then considers the advice of those prefecture-level governments, classifies them according to its own minimum wage level and then designs and publishes the final proposal on minimum wage level at the provincial level. The MHRSS did not welcome this bottom-up pattern in Zhejiang Province, and had stopped this approach. it has neither explicitly banned nor encouraged it.

In recent years, the MHRSS has begun to pay close attention to the minimum wage levels of the different provinces. Using data on the factors that listed in the 2004 regulations as affecting minimum wage levels, the ministry can calculate the extent to which a particular province's new minimum wage level takes those factors into account and can judge whether a proposed new adjustment is appropriate. This guidance from the ministry, which can be conveyed to provinces either formally or informally during the tripartite consolation as you will see in the case studies, has made it a more influential player in the wage system.

### 3. Method and Data

We employed the case study method to discover the procedures used to determine the minimum wage at the provincial level. We selected two provincial regions, Shanghai City and Guangdong Province, to get an in-depth understanding of how China's 2004 Regulations on Minimum Wages are formulated and implemented. We chose these two provinces not because they are representative of the processes in place in the other provinces but because these are two of the most developed provinces that are likely to have adopted solutions to problems still being faced by other provinces.

In each province, the Department of Labor Relations within the local bureaus of human resources and social security (LBHRSS) are in charge of managing the adjustment of the minimum wage level. For the analysis in this chapter, we interviewed key officials from this department in both Shanghai and Guangdong. We also interviewed the principals of each province's Federation of Trade Unions, Enterprise Confederation, and Federation of Industry and Commerce, since these organizations also participate in the tripartite consultation and have a significant impact on the minimum wage adjustment. Finally, we interviewed managers of firms located in Shanghai and Guangdong to understand the impact that the minimum wage level has on their enterprises. We selected a range of companies in different industries, of different sizes, and of various types of ownership from state-owned to partly state-owned to private firms.

Besides these interviews, we collected relevant data, including data on minimum wage levels and average wage levels over the last several years in Shanghai and Guangdong. We also collected the relevant legal and policy documents in each province related to the formulation and implementation of minimum wage legislation, plus any related reports and speeches made by leaders on the role and enforcement of the minimum wage. Table 4.1 presents the details of these data sources.

**Table 4.1: Legal and Policy Documents Cited in this Chapter**

| <i>Name of documents</i>  | <i>Government</i> | <i>Year</i>  | <i>Regulations relevant to minimum wages</i>   |
|---|-------------------|--|--|
| Notice on Adjusting the Minimum Wage in this Municipality   | Shanghai City     | Issued on March 31 <sup>st</sup> every year since 2008 | Requires that the new minimum wage level be published every year   |
| Instructions on Promoting the Transformation of Public Welfare Labor Organizations in this Municipality         | Shanghai City     | 2017   | Sets a standard subsidy from fiscal budget to people in the public service positions at 50% of the minimum wage level                  |
| Shanghai Enterprise Wage Payment Methods  | Shanghai City     | 2016   | Regulates details of payment methods relevant to the minimum wage  |
| Several Opinions of this City on Further Doing a Good Job for Young Trainees in Employment and as Entrepreneurs | Shanghai City     | 2016   | Establishes relevant subsidies from fiscal budget to young trainees of employers and of entrepreneurs at 80% of the minimum wage level |

| <i>Name of documents</i>   | <i>Government</i>  | <i>Year</i>                     | <i>Regulations relevant to minimum wages</i>   |
|--|--------------------|---------------------------------|--|
| Several Provisions on the Collection and Payment of Security Deposits for Wage Arrears from Shanghai Enterprises | Shanghai City      | 2017                            | Regulates details of the payment of security deposits for wage and severance pay arrears                                   |
| Guangzhou City Thirteenth Five-Year Plan for the Development of Human Resources and Social Security              | Guangzhou City     | 2017                            | Announces an evaluation mechanism for the minimum wage   |
| Guangdong Province Supply-Side Structural Reform and Cost-Reduction Action Plan (2016-2018)                      | Guangdong Province | 2017                            | Revises the frequency of the minimum wage adjustment from at least once every two years to at least once every three years |
| Guangdong Province Payroll Ordinance   | Guangdong Province | Issued in 2005, revised in 2016 | Regulates the details of payments relevant to the minimum wage   |

*Source:* Authors based on field research.

## 4. Case Studies: Shanghai and Guangdong

In this chapter, we present our findings on the two provincial regions that we studied: Shanghai City and Guangdong Province. Both are among the most developed areas in China, and the minimum wage levels in both regions rank among the highest among all Chinese provinces.

### 4.1 Sub-national context

#### Shanghai

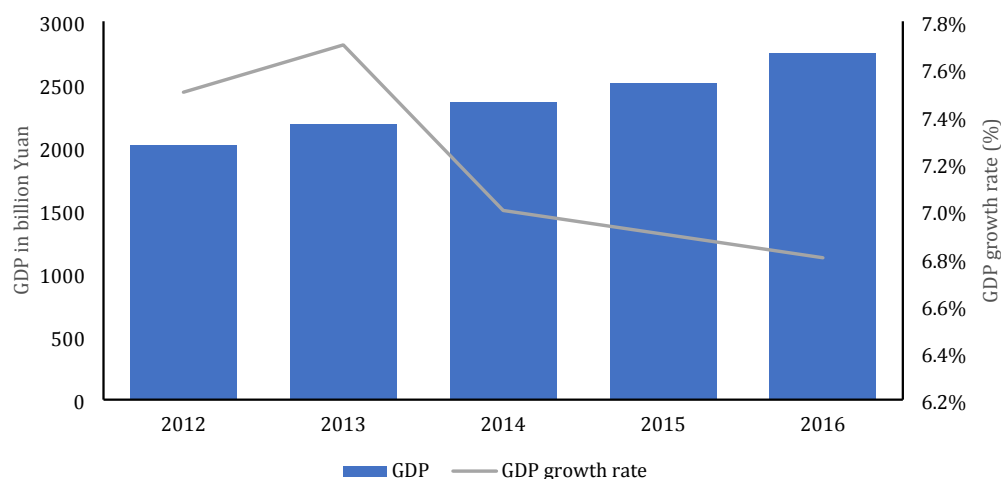
As one of China's largest cities and economic centers, Shanghai has experienced more than three decades of rapid economic development. Since the beginning of the reform and the opening up of the Chinese economy in 1978, Shanghai has rapidly developed into China's economic and financial center because of its favorable geographic location and policy support<sup>34</sup> and has played a leading role in the nation's economic development. In 2016, the city's GDP reached Yuan 2,746 billion, with annual real GDP growth rate of 6.8 percent. The continuous economic growth and improved industrial infrastructure of Shanghai have benefited not only the Yangtze River Delta region but also the entire national economy.

Shanghai's economic development can be divided into three stages (Figures 4.1 and 4.2). The first stage, from 1978 to 1992, began with Deng Xiaoping's southern tour speech announcing the acceleration of market reform to establish a "socialist market economy." During this stage, Shanghai began to focus on economic development, and its total GDP and per capita GDP grew dramatically. The second stage, from 1992 to 2007, began with the foundation of the Pudong New Area and ended with the global financial

<sup>34</sup> Such as Shanghai Free Trade Zone and Pudong New Area Construction at national level.

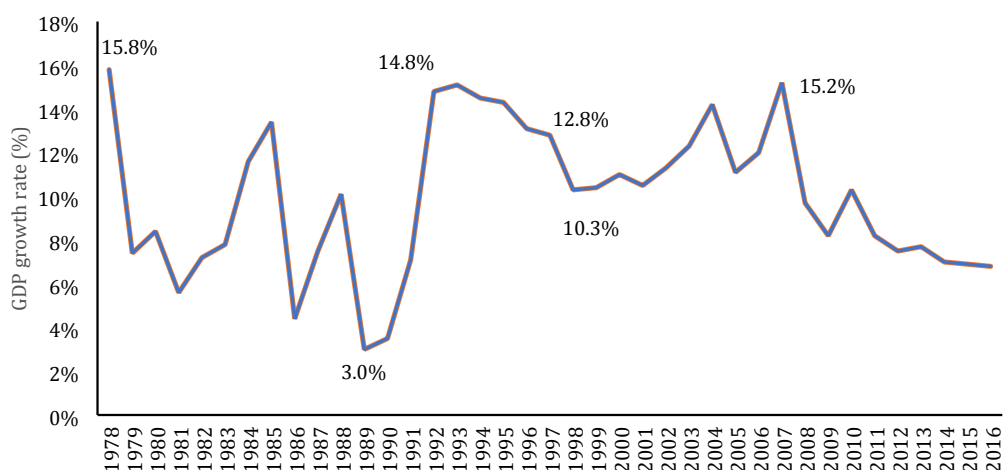
crisis. During this stage, Shanghai's GDP growth remained in double digits, and its influence on the world continued to rise. In the third stage, from 2007 to the present, Shanghai's economic development has entered a “new normal” as the city's GDP growth has begun to decline. In 2008, due to the financial crisis, there was a sharp fall in GDP growth, and since then GDP growth has stabilized, ranging between 6 and 7.7 percent.

**Figure 4.1: GDP Level and Growth Rate, Shanghai, 2012-2016**



Source: Authors' calculations based on data from the National Bureau of Statistics.

**Figure 4.2: GDP Growth Rate, Shanghai, 1978-2016**

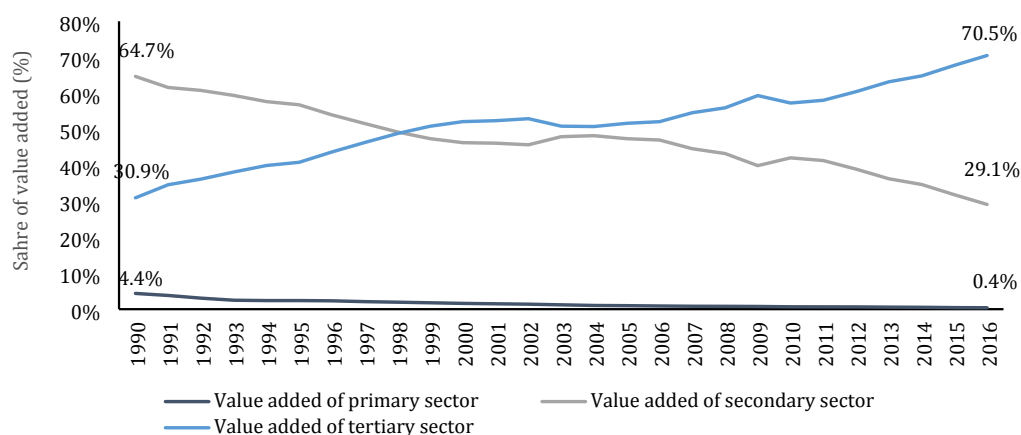


Source: Authors' calculations based on data from the National Bureau of Statistics.

Shanghai's industrial structure has been changing over the last 30 years (Figure 4.3). In 1990, the secondary industrial sector, the primary source of economic growth in Shanghai, accounted for 64.7 percent of total GDP. After the 1990s, the primary and secondary industrial sectors began a downward

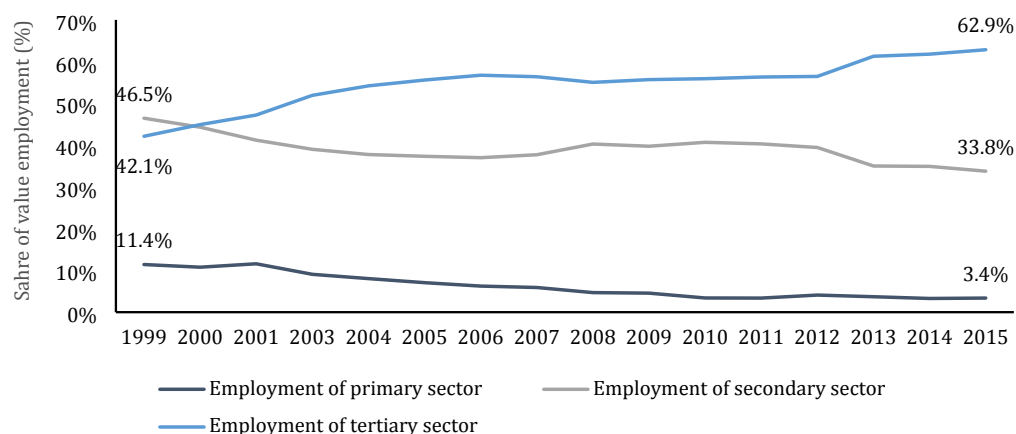
trend. By 2016, the added value of the tertiary industrial sector in Shanghai accounted for 70.5 percent of the city's GDP, while the primary industry sector had shrunk dramatically to 0.4 percent and the secondary industry sector had decreased to 29.1 percent. Within this tertiary sector, financial services and the information technology industry have developed rapidly.

**Figure 4.3: Value-added by Sector, Shanghai, 1990-2016**



Source: Authors' calculations based on data from the Annual Statistical Yearbook of Shanghai Province.

**Figure 4.4: Employment by Sector, Shanghai, 1999-2015**



Source: Authors' calculations based on data from the Annual Statistical Yearbook of Shanghai Province.

Because of this change in industrial structure, the employment structure in Shanghai also changed dramatically over the last 30 years (Figure 4.4). The proportion of Shanghai's population working in agriculture has been declining, while the non-agricultural population has increased from 67.4 percent (in 1990) to 90.3 percent (in 2014). In 2000, the share of the labor force in secondary industries began to decrease and by 2015 had declined to 33.8 percent. Meanwhile, the share of workers in the tertiary industry sector was increasing year by year. As of 2015, 62.9 percent of the workforce



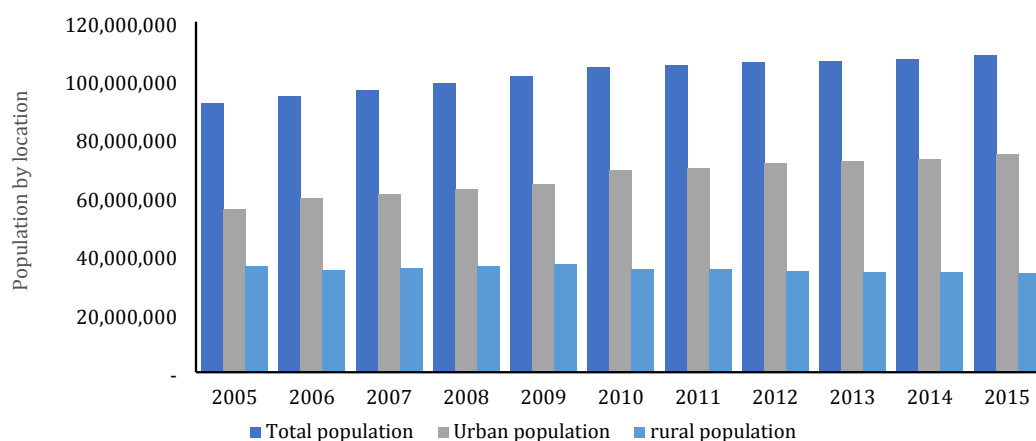
in Shanghai worked in the tertiary industry, which has become the primary source of employment.

Rapid economic development has improved people's living standards in Shanghai. In 1978, per capita GDP in Shanghai was Yuan 2,485, but by 2016 this had grown to Yuan 113,600. The per capita disposable income of urban residents in Shanghai of 2016 was Yuan 54,305, which was much higher than the national average of Yuan 2,3821, and per capita consumption expenditure was Yuan 37,458, also far higher than the national average of Yuan 17,111. Higher levels of per capital GDP in Shanghai have also meant a higher level of urban dibao minimum income guarantee program than other urban areas in China. Other social assistance benefits in Shanghai are also higher than the national average.

## Guangdong

Guangdong Province has also grown rapidly, but the characteristics and structure of its economic development differ from those of Shanghai. Guangdong Province's has the highest total economic output in China, having been the first province to carry out industrial reforms. Between 2005 and 2015, its urban population grew by 17 million, while the rural population decreased by 1.8 million (Figure 4.5). In recent years, the speed of industrialization and urbanization in the province has slowed down, which has slowed down the proportion of the native agricultural population relocating to urban centers. In 2005, the rural population of Guangdong was 36.15 million, and, as of 2015, this number had only declined to 33.95 million. During the same period, the total number of permanent residents of the province increased by nearly 20 million people, rising from 91.94 million to 108.49 million. The urban population also increased by approximately 20 million. Thus, Guangdong's population growth has mainly depended on non-local Chinese population moving into its urban areas.

**Figure 4.5: Population by Urban-Rural Location, Guangdong, 2005-2015**

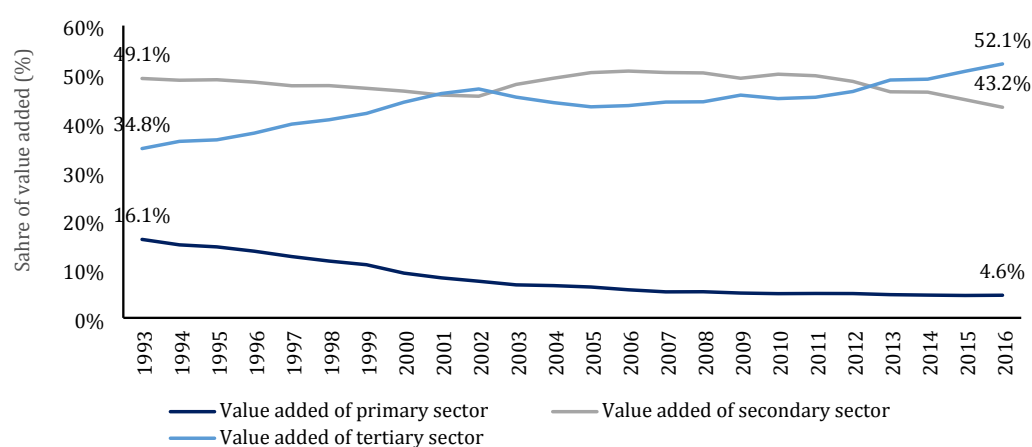


Source: Authors' calculations based on data from the Annual Statistical Yearbook of Guangdong Province.

Guangdong Province has a robust private sector. Many local enterprises have developed strong brand names in their specialized areas and become market leaders in China. Guangdong's manufacturing industries snowballed as a result of foreign investment, particularly in the Pearl River Delta. The province is a significant export-processing base for foreign investors, mainly from Hong Kong and Taiwan. The cities within the province that have the most industrial production are Guangzhou, Shenzhen, Dongguan, Foshan, Huizhou, Jiangmen, and Shantou.

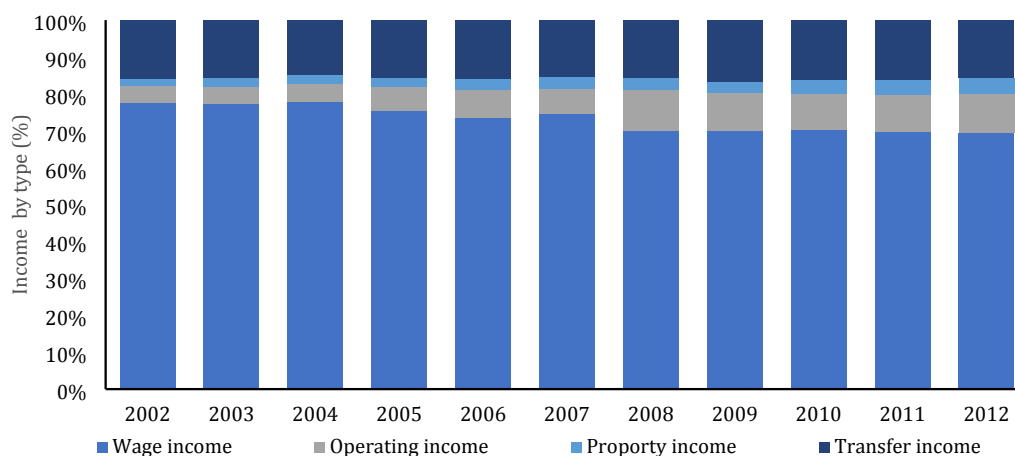
The province is strong in light manufacturing. The output of its light industry plants used to account for over half of the province's total industrial production. The sector's primary products include electrical appliances such as television sets, electrical fans, and refrigerators and other consumer products like garments, toys, shoes, and electronics. The province's exports of most of these products rank among the highest in China. In recent years, the pace of development of these secondary industries has begun to slow down gradually as the overall industrial structure has adjusted and transformed. The growth rate of industrial output has also fallen, from 18.6 percent in 2010 to 3.8 percent in 2015, as tertiary industries have gradually become the most important engine of economic growth (Figure 4.6).

**Figure 4.6: Value-added by Sector, Guangdong, 1993-2016**



Source: Authors' calculations based on data from the Annual Statistical Yearbook of Guangdong Province.

Living standards have been improving in Guangdong. Per capita GDP in Guangdong Province has been increasing rapidly, rising from Yuan 24,435 in 2005 to Yuan 72,787 in 2016. Residents' per capita disposable income also increased significantly, rising over the same period from Yuan 9,821 to Yuan 30,295.8, the latter figure being 1.3 times the national average. Wage income has accounted for a high percentage of total income, although in recent years the proportion of wage income has decreased slightly while operating income has gradually increased. The percentage of income from transfers has scarcely changed in recent years, indicating that the percentage of residents on social security has not changed either (Figure 4.7).

**Figure 4.7: Income by Type, Guangdong, 2002-2012**

Source: Authors' calculations based on data from the Annual Statistical Yearbook of Guangdong Province.

Even after 30 years of rapid development in Guangdong Province, there is great variation between its cities and its counties in terms their levels of economic development and infrastructure. The Pearl River Delta (PRD) Economic Zone is the province's economic hub, accounting for 80 percent of Guangdong's GDP. Cities in this area – including Dongguan, Foshan, Jiangmen, Guangzhou, Huizhou, Shenzhen, Zhaoqing, Zhongshan, and Zhuhai – rank in the forefront of China's economy. However, there are less developed areas in the eastern and western parts of Guangdong Province and in its northern mountain regions. In 2016, the per capita GDP of Shenzhen City (Yuan 167,411) was four times higher than that of Shaoxing City (Yuan 41,388) and five times higher than that of Jieyang City (Yuan 33,451). Because of this regional inequality, the transfer levels from the dibao minimum income guarantee program also differ between prefecture-level cities.

## 4.2 Level and Growth of the Minimum Wage

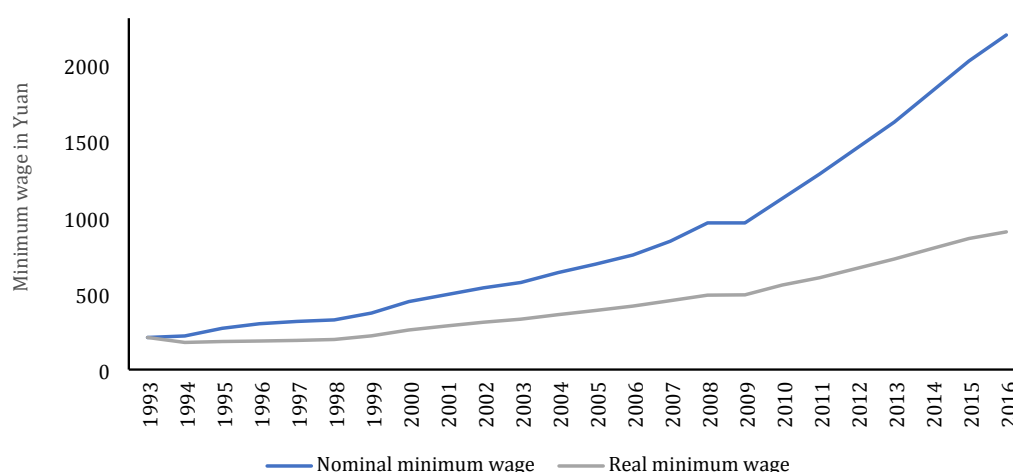
Thanks to rapid economic development, the minimum wage levels in both Shanghai City and Guangdong Province are relatively high. Shanghai's minimum wage level is the highest in the country, and Guangdong's minimum wage level ranks about third or fourth highest among all the provinces.

### Shanghai

Shanghai's minimum wage level is adjusted every year. On April 1, 2017, the level was increased from Yuan 2,190 to Yuan 2,300, which is the highest in China. Nevertheless, compared to workers' average wage levels and average price levels in Shanghai, it is still not very high. In fact, the minimum wage level in 2016 was only 31.4 percent of Shanghai's average wage. Shanghai

has adjusted its minimum wage level every year except in 2009 when the MHRSS required every province to suspend its minimum wage adjustment for a year to cope with the international financial crisis of 2008. The average growth rate of the nominal minimum wage between 2004 and 2009 in Shanghai was 9.6 percent, and since 2009 it has been 10.2 percent. It rose to 12.3 percent in 2015 but since then has dropped to 8.4 percent (Shira, 2016). Figure 4.8 presents the monthly nominal and real minimum wages from 1993 to 2016 in Shanghai. During this period, the general price level in Shanghai doubled (in 2016 it was 2.42 times the 1993 level). The monthly real minimum wage also rose, nevertheless, to an average annual growth rate of 6.5 percent.

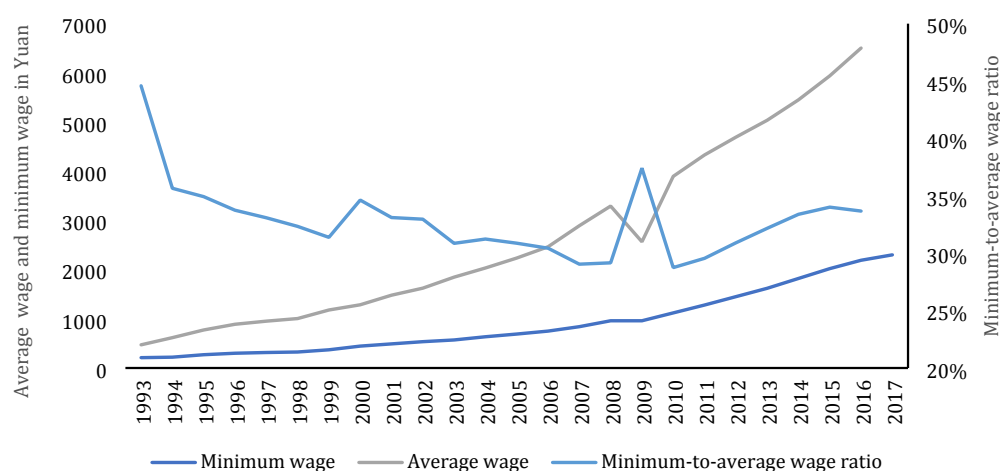
**Figure 4.8: Monthly Minimum Wage, Shanghai, 1993-2016**



*Source:* Authors' calculations based on data from the Shanghai Municipal Human Resources and Social Security Bureau.  
*Notes:* The consumer price index (CPI) in Shanghai was used as the deflator and 1993 as the base year

The minimum-to-average wage ratio in Shanghai continuously decreased until 2008, but this trend reversed during the Twelfth Five-Year Plan (2011 to 2015). Figure 4.9 presents the trends in Shanghai's average monthly wage and monthly minimum wage levels from 1993 to 2016. During the period of the Twelfth Five-Year Plan (2011 to 2015), the average growth rate in the average monthly wage level was 6.52 percent, and the average growth rate in the average monthly minimum wage level was 9.55 percent. In 2016, the average growth rate in the average monthly minimum wage level dropped to 6.71 percent. The average ratio in the period of the Twelfth Five-Year Plan was 31.46 percent in Shanghai. Since the beginning of the Thirteenth Five-Year Plan in 2016, a new downward trend has apparently begun.

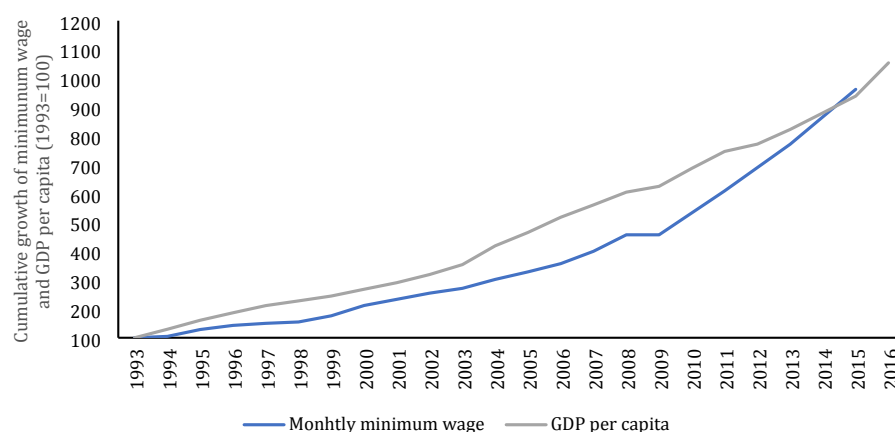
**Figure 4.9: Average Monthly Wage, Monthly Minimum Wage, and Minimum-to-Average Wage Ratio, Shanghai, 1993-2016**



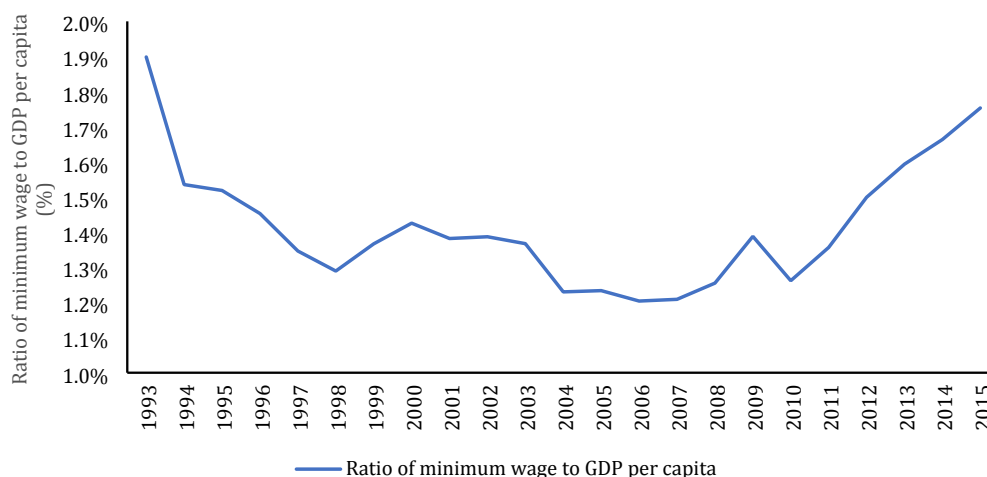
*Source:* Authors' calculations based on data from the Shanghai Bureau of Statistics and the Shanghai Municipal Human Resources and Social Security Bureau.

According to the 2004 regulations, per capita GDP is an important factor influencing the adjustment of the minimum wage. As can be seen from , the minimum wage increased as per capita GDP grew. From 1993 to 2015, per capita GDP in Shanghai increased from yuan 11,061 to Yuan 103,795.5, an increase of 8.38 times. Per capita GDP increased rapidly before 2004 and more slowly after 2004. Until 2004, the average growth rate of the minimum wage and per capita GDP were almost the same. From 2003 to 2009, the year-on-year growth rate of the minimum wage was slightly lower than the year-on-year growth rate of per capita GDP, but since 2009, this pattern has reversed. Hence, during the first stage, from the issuing of the 1993 Regulations on Wages in Enterprises to 2006, the ratio of the monthly minimum wage to per capita GDP generally decreased. During the second stage, from 2006 to 2015, the ratio rapidly increased, rising from 1.31 to 1.95 percent.

**Figure 4.10: Cumulative Growth of the Monthly Minimum Wage and Per Capita GDP, Shanghai, 1993-2016**



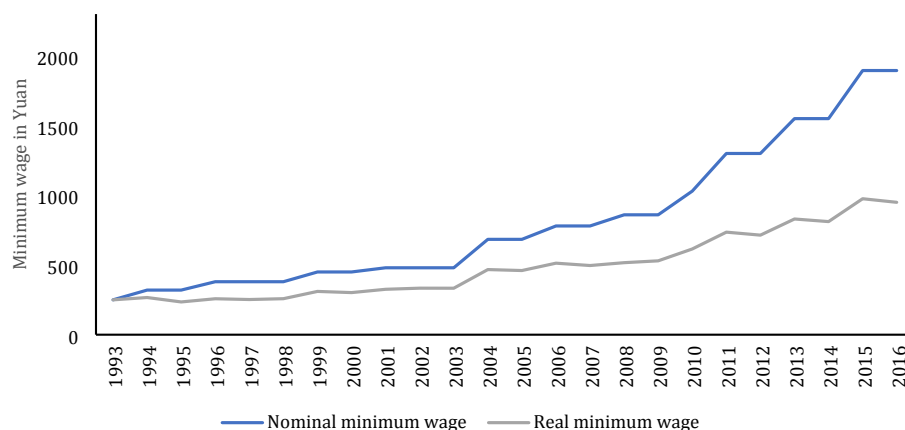
*Source:* Authors' calculations based on data from the National Bureau of Statistics and the Shanghai Municipal Human Resources and Social Security Bureau. Note: The data for 1999 are for April.

**Figure 4.11: Ratio of the Monthly Minimum Wage to Per Capita GDP, Shanghai, 1993-2015**

*Source:* Authors' calculations based on data from the National Bureau of Statistics and the Shanghai Municipal Human Resources and Social Security Bureau. Note: The data for 1999 are for April.

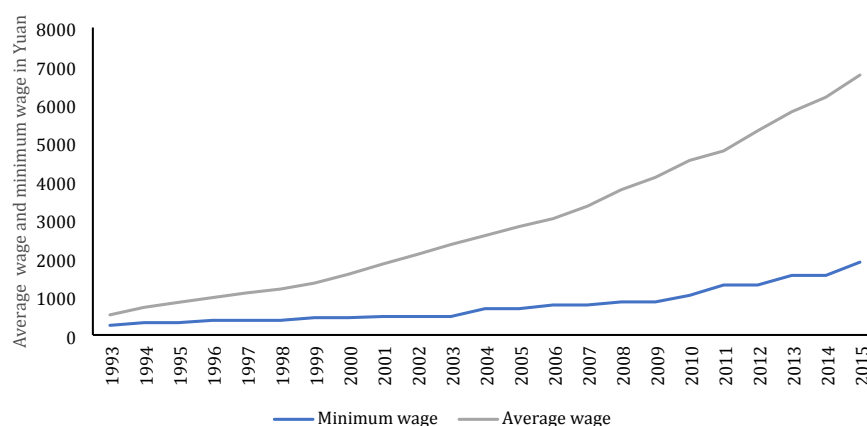
## Guangdong

Guangdong Province used to adjust the level of its minimum wage every two years in accordance with the requirement set out in the 2004 Regulations on Minimum Wages that minimum wage levels must be adjusted at least once every two years. However, on February 28, 2016, the Guangdong provincial government announced that it would maintain the 2015 minimum wage level for both 2016 and 2017 to reduce the economic pressure on enterprises, especially those that were performing poorly. The provincial government also recommended that businesses that were performing better should raise their minimum wage by 8.5 percent or no more than 12.5 percent (Shira, 2016). Importantly, the government divided the province's minimum wage level into four "files," each adapted to a different level of economic development, so that different jurisdictions are required to adopt different minimum wage levels. Figure 4.12 presents the trend in nominal and real minimum wage rates from 1993 to 2015, using the highest of the province's four minimum wage levels. The monthly real minimum wage increased during the period, with an average annual growth rate of 5.9 percent.

**Figure 4.12: Monthly Minimum Wage, Guangdong, 1993-2016**

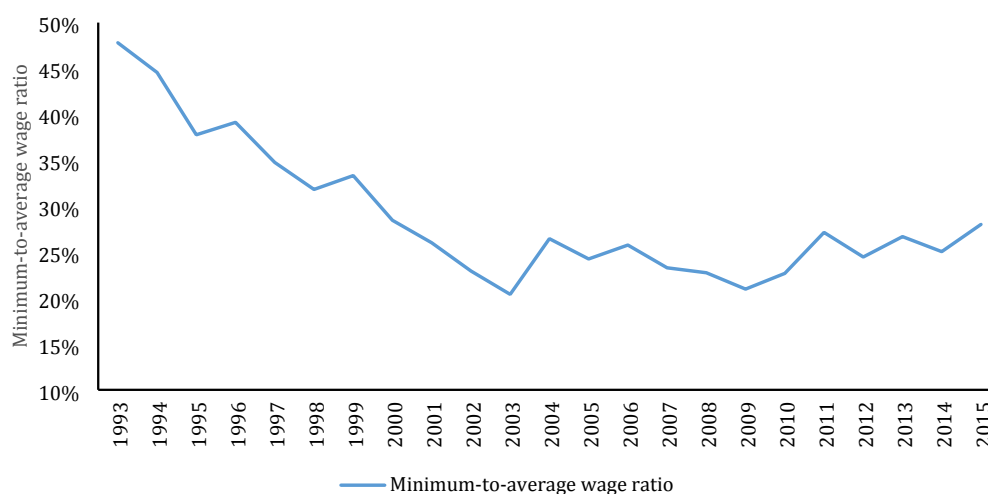
**Source:** Authors' calculations based on data from the Guangdong Municipal Human Resources and Social Security Bureau. **Note:** The monthly minimum wages used here are the highest level for each year. The CPI in Guangdong Province was the deflator, using 1993 as the base year. The price level in 2016 was 2.03 times higher than it had been in 1993.

The ratio of the minimum-to-average wage constantly decreased until the beginning of the millennium, since when it has fluctuated between 25 and 30 percent. Figure 4.13 presents the trend of average monthly wage and monthly minimum wage levels from 1993 to 2015. During the period of the Twelfth Five-Year Plan (2011 to 2015), the average growth rate of the average monthly wage level was 7.15 percent in Guangdong Province. During the same period, the average growth rate of the average monthly minimum wage level was 7.83 percent. As already mentioned, Guangdong Province did not adjust its minimum wage level in 2016 and 2017. With respect to the ratio of the monthly minimum wage level to the average monthly wage, Figure 2.14 shows that in 2016 the ratio in Guangdong was 28.02 percent compared with 33.67 percent in Shanghai. The ratio then rose more slowly after 2009 than in Shanghai City. The average ratio during the period of the Twelfth Five-Year Plan was 26.27 percent in Guangdong.

**Figure 4.13: Average Monthly Wage and Monthly Minimum Wage, Guangdong, 1993-2016**

**Source:** Authors' calculations based on data from the Guangdong Bureau of Statistics and the Guangdong Municipal Human Resources and Social Security Bureau.

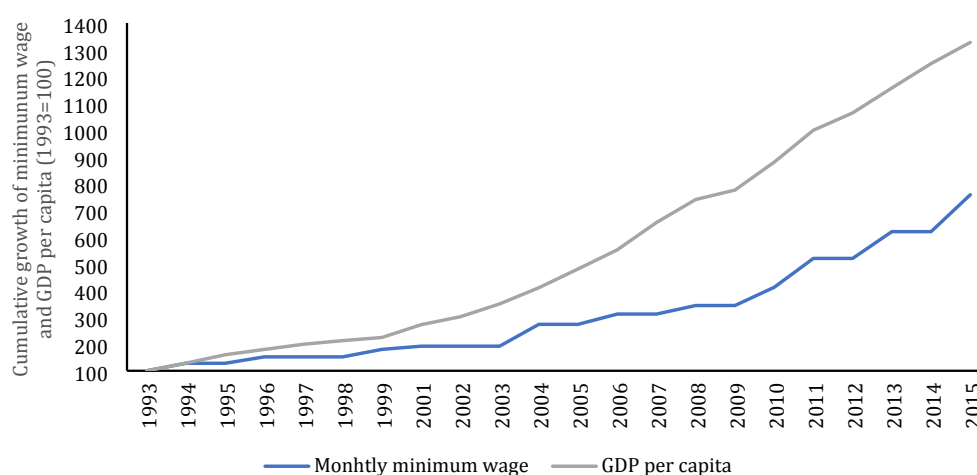
**Note:** The monthly minimum wages used here are the highest level for each year.

**Figure 4.14: Minimum-to-Average Wage Ratio, Guangdong, 1993-2016**

*Source:* Authors' calculations based on data from the Guangdong Bureau of Statistics and the Guangdong Municipal Human Resources and Social Security Bureau.

*Note:* The monthly minimum wages used here are the highest level for each year.

As in Shanghai, per capita GDP growth in Guangdong has influenced minimum wage adjustments. However, per capita GDP grew faster than the minimum wage until the global financial crisis of 2008. Figure 4.15 presents the year-on-year growth rate of monthly minimum wages and per capita GDP from 1993 to 2015, while Figure 4.16 presents the resulting ratio of the monthly minimum wage level to per capita GDP in Guangdong. The trend of the ratio was generally downward after 1993, but since 2009, it has increased slightly, from 1.39 percent to 1.95 percent.

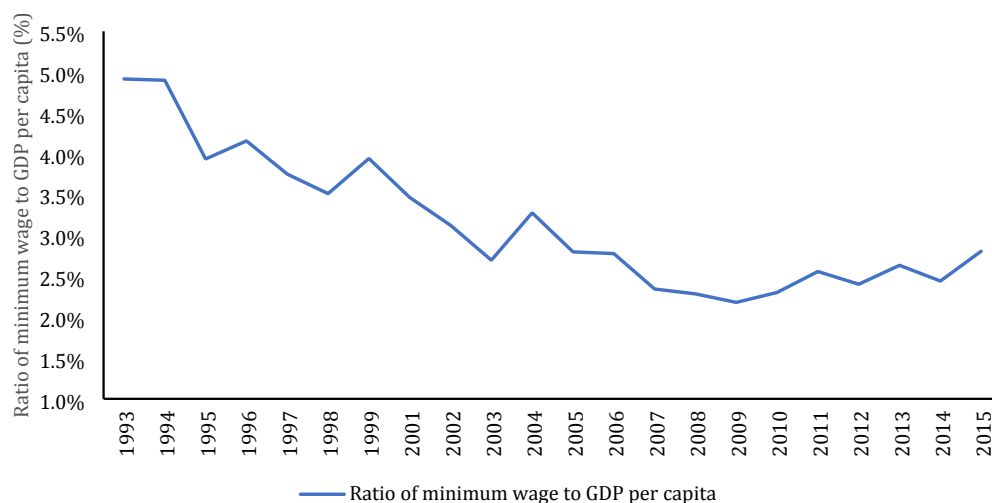
**Figure 4.15: Cumulative Growth of Monthly Minimum Wage and Per Capita GDP Guangdong, 1993-2015**

*Source:* Authors' calculations based on data from the Guangdong Bureau of Statistics and Guangdong Municipal Human Resources and Social Security Bureau.

*Note:* The monthly minimum wages used here are the highest level for each year.



**Figure 4.16: Ratio of the Monthly Minimum Wage to Per Capita GDP, Guangdong, 1993-2015**



*Source:* Authors' calculations based on data from the Guangdong Bureau of Statistics and the Guangdong Municipal Human Resources and Social Security Bureau.

*Note:* The monthly minimum wages used here are the highest level for each year.

It is worth noticing the differences in the way that the minimum wage is calculated in Shanghai and in Guangdong. In Shanghai City, employees' contributions to the "Five Social Insurances and One Housing Fund" are excluded from the calculation, but they are included in the calculations in Guangdong Province.<sup>35</sup> Because the 2004 Regulations on Minimum Wages did not regulate whether employees' contributions to the Five Social Insurances and One Housing Fund should be included in the minimum wage, different provinces approach this differently. These contributions were clearly excluded from the calculation of Beijing and Shanghai City's new minimum wage levels, whereas they were clearly included in Inner Mongolia's new level. In other provinces, it was not as clear, but the calculation of the minimum wage usually includes employees' contributions according to the labor dispute arbitrations or judicial cases in practice. Consequently, Beijing and Shanghai's ways of calculating their minimum wage levels resulted in higher rates than those in the other provinces in China.

### 4.3. Objective of the Minimum Wage System

In both Shanghai City and Guangdong Province, the provincial authorities regard the minimum wage as a public policy tool for guaranteeing a minimum standard of living to workers and to provide them with a decent subsistence. This is also how other stakeholders regard it, including trade unions and the

<sup>35</sup> The "Five Social Insurances and One Housing Fund" consists of endowment insurance, medical insurance, unemployment insurance, employment injury insurance, maternity insurance, and a Housing Provident Fund.

league of enterprises (or the association of entrepreneurs). Although officials in both places admit that the minimum wage can affect income distribution, this was not its original intention and they do not see this as its primary function. Thus, in determining and adjusting the minimum wage levels, they do not take into account the fairness of the wage distribution among different workers. Government officials in both Shanghai City and Guangdong Province fully understand that the minimum wage level is much lower than the average level of workers' wages, but they do not use this tool to influence average wages or wage inequality.

However, in response to the slowdown in economic growth rate in recent years, the national and local government has begun to consider the effects of the minimum wage on the labor market as well as its wage guarantee function. In Guangdong Province, the authorities are concerned that the minimum wage is threatening the survival of many small enterprises, and thus they are monitoring it to ensure that it does not increase too fast.

## 5. Tripartite Consultations to Adjust the Minimum Wage

In China, the minimum wage levels are negotiated at the provincial level by three parties – employees and their unions, employers and their associations, and the provincial government. After a minimum wage level has been settled in these negotiations, the provincial government authorizes the level and reports it to the MHRSS. After the MHRSS accepts the level, the provincial government publishes and promulgates the new minimum wage level.

As discussed earlier, the tripartite consultation mechanism is at the core of the procedure for adjusting the minimum wage level. In this consultation, the primary stakeholders (labor unions and employers' representatives) make proposals about adjusting the minimum wage along with evidence to justify them. The primary stakeholders' proposals serve as the basis of the final proposal made by the government to the MHRSS.

The tripartite consultation is not only the statutorily required procedure for adjusting the minimum wage level at the provincial level, but it is also a useful way to collect information from different stakeholders. According to the 2004 Regulations on Minimum Wages:

*“The program for determining and regulating the levels of minimum wages shall be formulated by the administrative Department of Labor and Social Security of the people's government of each province, autonomous region, or municipality directly under the Central Government in consultation with the labor unions and the league of enterprises (or association of entrepreneurs) at the same level, which shall be reported and submitted to the Ministry of Labor and Social Security” (Article 8, Regulations on Minimum Wages, 2004).*

The participants in these tripartite consultations come from four organizations, which collectively represent the three types of stakeholders:

the government, labor, and business owners. The four official organizations that participate are: (i) local bureaus of human resources and social security (LBHRSS) under the Department of Labor Relations within the MHRSS representing the government; (ii) the local federation of trade unions (LFTU) representing the interests of labor; (iii) the local enterprise confederation or local enterprise directors' association (LEC) representing the interests of enterprises; and (iv) the local federation of industry and commerce (LFIC), also representing the interest of enterprises. Both the LFTUs and the LFICs are mass organizations authorized by the Chinese Communist Party, and a portion of their funding comes from fiscal support, whereas the LECs are funded only by the dues paid by their members.

China established this system of tripartite consultation in August 2001, and it was adopted for setting minimum wage level in Guangdong Province in 2002 and in Shanghai in 2003. From the very beginning, the tripartite participants were the LBHRSS, LFTU, and LEC. In April 2011, a fourth organization, the National Federation of Industry and Commerce (NFIC), joined the tripartite consultation at the national level. In most provinces across China, the local enterprise federations (LFICs) joined the tripartite consultations in 2012.

Because the 2004 regulations provided no details on how to implement tripartite consultations, there are wide differences in the way in which they are deployed in the different provinces. Currently, in Shanghai, there are six rounds of tripartite consultations until the new minimum wage level is set, and the MHRSS considers Shanghai's process the best of all the various processes being used across all of China. In Guangdong Province, the tripartite consultation involves four rounds of meetings, and even this is more elaborate than the processes in place in most other provinces.

In most provinces, the local bureaus of human resources and social security (LBHRSSs) at the provincial level, are in charge of organizing the tripartite consultations and finding compromises to bridge any gaps in viewpoints between the representatives of labor and enterprises. These bodies are also in charge of setting minimum wage levels at the county and the municipal level. Prefecture-level- LBHRSSs play no role except to provide information, if needed, to the LBHRSS at the provincial level.

In Shanghai City, the LBHRSS at the provincial level is equivalent to that at the prefecture level. In Guangdong Province, the provincial LBHRSS sometimes requires each prefecture LBHRSS to organize their own tripartite consultations and then to report their proposals to them. After considering these proposals along with the results of the tripartite consultations at the provincial level, the provincial-level LBHRSS then drafts a proposal regarding the minimum wage adjustment and reports it to the provincial governor's meeting.

Once the different proposals from the different stakeholders in the tripartite consultation are close to one another, the provincial government then sends the proposed minimum wage adjustment to the central MHRSS.

According to the 2004 Regulations on Minimum Wages, the MHRSS may provide advice on the proposed minimum wage adjustment, but if it fails to do so within 14 days, it is considered to have granted its consent to the proposal.

In practice, before the provincial government formally reports its proposed minimum wage adjustment to the MHRSS officially, officials of the LBHRSSs will informally consult with officials of the MHRSS on the proposal. As a result, the MHRSS rarely rejects the proposed adjustments. In our cases, Shanghai City and Guangdong Province, they never been rejected by the MHRSS

The consultations with the workers' representatives take different forms. As previously mentioned, the LFTUs exist to represent the interests of workers, and thus they participate in tripartite consultation on behalf of their members. In Shanghai, this means the Shanghai Federation of Trade Unions (SFTU), and in Guangdong, it is the Guangdong Federation of Trade Unions (GFTU). The membership of these federations includes most of the employees both of state-owned enterprises and of large non-state-owned enterprises. In Shanghai City, the SFTU runs surveys to discover the wage levels and family expenditures of local workers and even hires investigators to identify food prices in order to estimate workers' routine expenditures and uses these data to support its case for a minimum wage adjustment. In Guangdong Province, the GFTU has a specialized department devoted to studying the minimum wage system and local conditions.

The bargaining power of the different parties in the tripartite consultation mechanism is unbalanced, with LFTUs holding a considerable advantage. According to LFTU officials, they have two key advantages in the tripartite consultation mechanism are twofold. First, they have sufficient funds to carry out surveys and studies to inform their minimum wage adjustment proposals. According to the 1992 Trade Union Law of the People's Republic of China, the sources of trade union funds are: (i) membership dues paid by union members; (ii) monthly allocations of 2 percent of the total wages of all employees of the enterprise, public institution, or government organ that established the said trade union organization; (iii) income handed over by enterprises and public institutions affiliated to the trade union; (iv) subsidies from the central government; and (v) other income.

Second, the LFTUs have a higher political status than that of local enterprise confederations (LECs) or local federations of industry and commerce (LFICs), and have a closer relationship with the government. This means that the government is more receptive to the proposals of the LFTUs than to those of the business federations.

LECs and LFICs represent the interests of enterprises in the tripartite consultations. There are several differences between LECs and LFICs. Most LEC members are large companies, mainly state-owned companies, foreign-funded enterprises, and private domestic enterprises. The nature of LECs varies depending on whether they are at the national level or the provincial

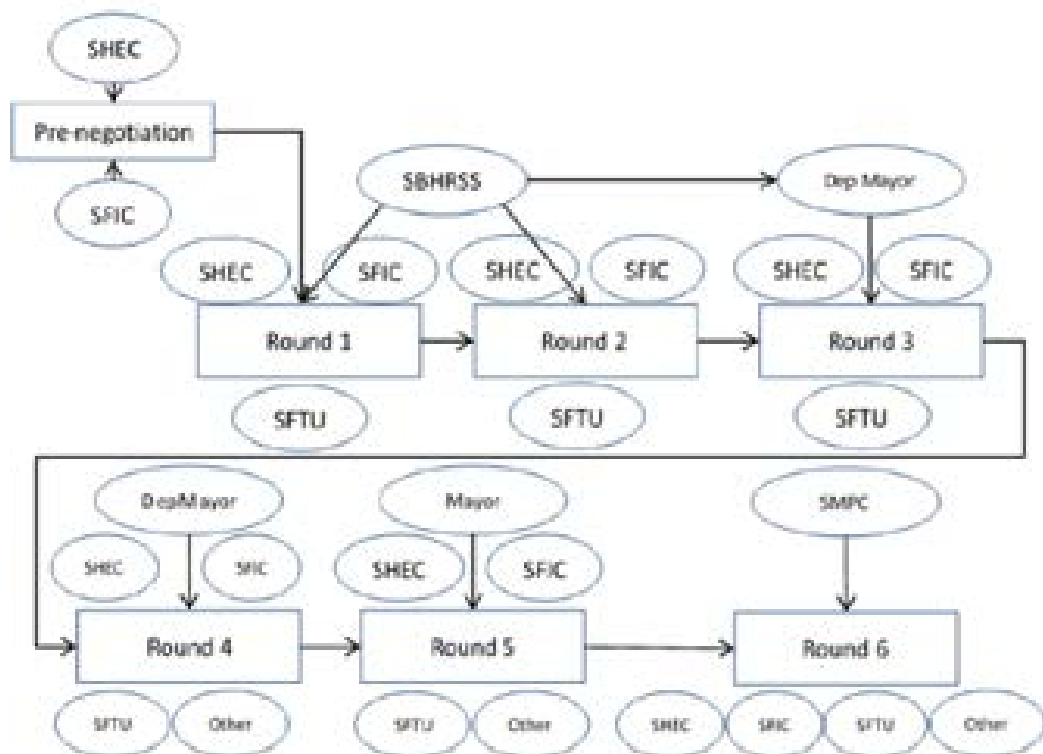
level or lower. At the national level, the China Enterprise Confederation exists as a department of the government. However, at the provincial level and below, LECs are associations representing the interests of local enterprises and are not affiliated with either the local government or the China Enterprise Confederation. The LEC's employers' business office is responsible for proposing adjustments to minimum wage levels on behalf of their members.

The main obstacle facing LECs is a lack of funds. Their main source of funds is membership dues paid by their members, which means their funding is neither adequate nor stable since their members can join or quit voluntarily (Clarke and Lee, 2002). Thus, their budgets are too tight to allow them to function effectively, and they cannot afford to carry out research on behalf of their members in the way that LFTUs can. The LEC in Shanghai City, the Shanghai Enterprise Fund, is an exception inasmuch as it receives a special fiscal subsidy from the Shanghai government and plays an important role in the tripartite consultations. However, in Guangdong Province, the Guangdong Enterprise Fund receives no government subsidies.

In contrast with LECs, the members of LFICs tend to be mid-size or small private enterprises as LFICs largely represent the interests of the non-state-owned economy. By their nature, LFICs are mass organizations like LFTUs. The relationship between LFICs and the government is closer than that between LECs and government. Moreover, LFICs can obtain a fiscal subsidy for their activity funds. In the decade after tripartite consultations were established in China in 2001, the national umbrella organization of LFICs, the All-China Federation of Industry and Commerce (ACFIC), was not involved in the tripartite consultations. This changed in 2011, when in accordance with a decision of the 16th National Coordinating Tripartite Meeting, the ACFIC was allowed to enter the tripartite consultation.

### **Procedures for Tripartite Consultations in Shanghai City**

In Shanghai City, the participants in the tripartite consultations are the Shanghai Bureau of Human Resources and Social Security (SBHRSS), Shanghai Federation of Trade Unions (SFTU), the Shanghai Enterprise Confederation (SEC), and the Shanghai Federation of Industry and Commerce (SFIC), the latter two both representing enterprises. The department of labor relations of SBHRSS is in charge of organizing the tripartite consultation. Figure 4.17 shows how each decision flows into the next in the six rounds of tripartite negotiations. The consultations start in January of every year and end when the minimum wage level for Shanghai announced on April 1. Usually, in late November of every year, the four organizations involved in the negotiations begin preparing their cases for the discussions about the next year's minimum wage.

**Figure 4.17: Minimum Wage Negotiation Procedure, Shanghai**

Source: Authors based on field research.

## Pre-negotiation

Before all of the parties begin the process of negotiation, the SEC and the SFIC agree a consistent position on behalf of their members based on surveys and research undertaken by their member enterprises. Because the SEC has participated in tripartite negotiations for more years than the SFIC, the SEC has a stronger say in these pre-negotiations.

### Round 1: Staff-level Meeting

The SBHRSS calls the first round of negotiations between the SEC, the SFIC, and the SFTU. This first round of negotiations is informal and is carried out by staff of the different organizations, and no directors are involved. Its purpose is to establish the positions on each side regarding their proposals on the next minimum wage adjustment and how far apart they may be. By the time of the first round of the tripartite negotiations, a meeting of the staff of the four organizations, the SBHRSS has already completed its own preliminary draft proposal for the minimum wage adjustment but does not release this information to the other parties. Instead, the SBHRSS releases information on the current economic situation, including macroeconomic background, any changes in the economic indicators, and the economic policy direction of the central government. For example, in 2015 the

SBHRSS emphasized that the central government's economic policy focus in the coming year would be supply-side structural reform, part of which would focus on reducing firms' costs. Based on this, the SBHRSS indicated that reducing firms' costs should be one of the factors considered in the negotiations.

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### **Round 2: Directors' Meeting**

After the first round of negotiation, each side may modify its recommendations regarding the new minimum wage level to reduce the gap between the various proposals. Then the SBHRSS calls for the second round of negotiation. The participants in this round are the directors of the departments in charge of recommending the minimum wage adjustment from each organization: the SEC, the SFIC, and the SFTU. This meeting is a formal negotiation. Each of the three organizations provides evidence to support its position and persuade its counterparts. After this round of bargaining, the SBHRSS usually has a clear understanding of each organization's standpoint and then drafts its own comprehensive proposal for the minimum wage adjustment that take into account each side's views. This proposal is still an initial draft, to be discussed in the next several rounds of the tripartite negotiations.

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### **Round 3: Joint Conference**

After the directors' meeting, the SEC, the SFIC, and the SFTU's positions may be closer to one another, but some gaps are likely to remain. The deputy mayor, who is in charge of making the decision about the final minimum wage proposal, calls the joint conference. The top-level directors of the SEC, the SFIC, and the SFTU attend this meeting where the parties' positions are discussed once again.

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### **Round 4: Municipal Executive Meeting**

The deputy mayor then calls for a meeting of the top-level directors of the SEC, the SFIC, the SFTU, and other government departments, such as the Shanghai Bureau of Statistics, the Shanghai Municipal Finance Bureau,<sup>36</sup> the Shanghai Civil Affairs Bureau, and the State-owned Assets Supervision and Administration Commission of the Shanghai municipal

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<sup>36</sup> The Shanghai Municipal Finance Bureau provides compensation and subsidies to workers working in public service positions and subsidizes jobs created by the government. The compensation and subsidies for these positions and jobs are always directly proportional to the minimum wage level so any rise in the minimum wage will increase the municipal government's financial burden. For example, the subsidy for public service positions, according to the Instructions on Promoting the Transformation of Public Welfare Labor Organizations in this Municipality (2017), and the subsidy for young trainees of employers and entrepreneurs, according to Several Opinions of this City on Further Doing a Good Job with Young Trainees of Employers and Entrepreneurs (2016).

government.<sup>37</sup> The three main organizations state their positions, and other government departments join in the discussion to state their own views of the likely impact of the proposed new level of the minimum wage. However, the deputy mayor mainly considers the advice from the SEC, the SFIC, and the SFTU.

After this round of the tripartite negotiations, the SBHRSS reports its proposed new minimum wage level to the MHRSS and asks for their advice as to whether the new level is appropriate and can be publicly announced. The MHRSS has the right to reject the SBHRSS's proposal, but in the 12 years since the tripartite consultation mechanism was first used, the MHRSS has not yet used this authority.

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#### **Round 5: Municipal Standing Committee Meeting**

Once the SBHRSS gets an affirmative answer from the MHRSS, the mayor calls the fifth round of meetings. Here the SBHRSS reports the results of the previous rounds of negotiation and details its proposal for the new minimum wage level. Top-level directors of the SEC, the SFIC, the SFTU, and other government departments also attend this meeting. By this point, the positions of these three organizations will have already been revised to be close to one other.

Before this fifth round, the mayor will have also asked for advice on the minimum wage adjustment from the Shanghai Municipal People's Congress and the Shanghai Municipal People's Political Consultative Conference.

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#### **Round 6: Meeting of the Municipal Party Committee**

The secretary of the Municipal Party Committee calls the last rounds of negotiation. The mayor, the deputy mayor, the top-level directors of the SEC, the SFIC, and the SFTU, and other government departments all attend this meeting. When this last round begins, whatever gap may still exist between the three organization's positions on how the minimum wage should be adjusted are very small. The secretary of the Municipal Party Committee brings the six rounds of negotiation to a conclusion at this meeting by making the final decision on the adjustment of the minimum wage.

### **Procedures for Tripartite Consultation in Guangdong Province**

Unlike Shanghai City, which has only one minimum wage that applies to the whole city, Guangdong Province has multiple minimum wage levels that need to be negotiated. The participants in the tripartite consultations in

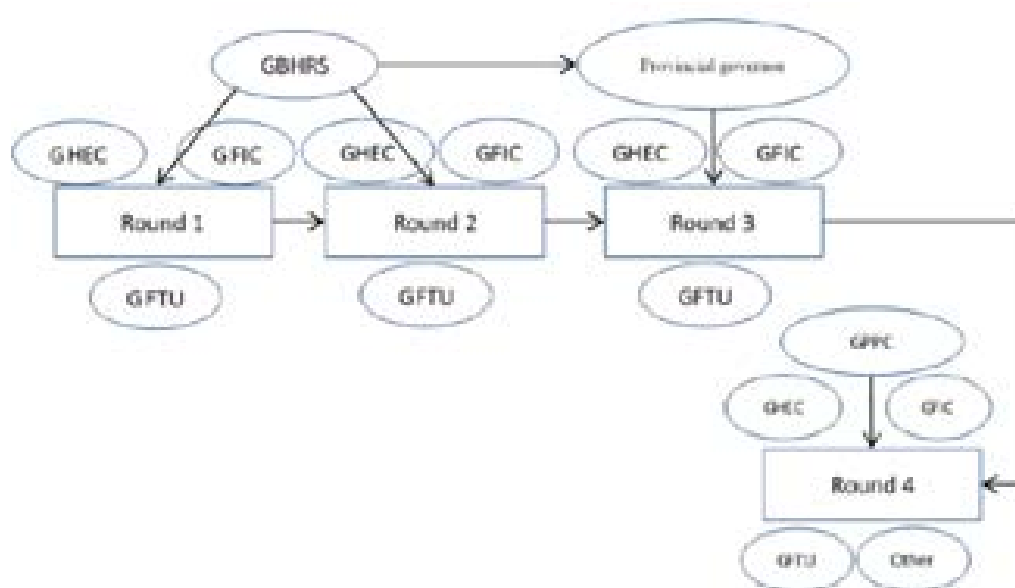
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<sup>37</sup> The State-owned Assets Supervision and Administration Commission of the Shanghai municipal government represents the interests of state-owned companies. Although most workers in state-owned enterprises are not affected by the minimum wage, a higher minimum wage does increase their labor costs by increasing the benefits paid to workers on sick leave.



Guangdong Province are: (i) the Guangdong Bureau of Human Resources and Social Security (GBHRSS) representing the government; (ii) the Guangdong Federation of Trade Unions (GFTU) representing labor; and (iii) the Guangdong Enterprise Confederation (GEC) and the Guangdong Federation of Industry and Commerce (GFIC) representing enterprise owners. There are four rounds of tripartite consultation on minimum wage levels in Guangdong Province, as shown in Figure 4.18.

**Figure 4.18: Minimum Wage Negotiation Procedure, Guangdong**



Source: Authors based on field research.

### Round 1: Preparatory Meeting

The GBHRSS calls for a preparatory meeting to start the tripartite consultation, having already drafted an initial proposal on how the minimum wages should be adjusted. One of the purposes of the preparatory meeting is to discuss whether to change the level of the minimum wages at all and, if so, to discuss the GBHRSS's draft proposal. Another purpose is to learn how great a gap there might be between the different organizations' views. If the gap between labor unions and enterprise representatives is wide, the GBHRSS will call for another round of preparatory meetings and try to narrow the gap. In most cases, there are just one or two rounds of meetings, although there have sometimes been three rounds. If, after three rounds of preparatory meetings, both parties still cannot achieve a consensus, the different opinions will be left to be resolved during Round 2.

### Round 2: Director's Meeting

In the director's meeting, the GFTU, the GEC, and the GFIC all present their recommendations regarding adjusting the minimum wages. Because Guangdong

Province does not adjust its minimum wage levels every year, the three organizations do not prepare detailed research in advance, unlike in Shanghai City. Only after the preparatory meeting do the three organizations begin to carry out surveys or conduct focus groups to find out from workers and enterprises what they think would be the most appropriate minimum wage adjustments. The interval between the preparatory meetings (Round 1) and the director's meeting (Round 2) is just one or two weeks, which leaves little time to carry out these studies. In the director's meeting, the GFTU, the GEC, and the GFIC present evidence to back up their various proposals unless they decide to simply accept the GBHRSS proposal.

After the director's meeting, the GBHRSS adjusts its initial draft proposal based on the opinions voiced by the GFTU, the GEC, and the GFIC. At this stage, there may still be a gap between the labor unions and the enterprise representatives. However, to achieve consensus between each other, GFTU, the GEC, and the GFIC may adjust their position to narrow the gap.

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### **Round 3: Provincial Governor's Meeting**

The GBHRSS produces its final draft proposal for adjusting the province's minimum wages and presents this proposal, along with the opinions of labor unions and enterprise representatives, to the provincial governor. At the same time, it presents its final draft proposal to the MHRSS and asks for its response. The provincial governor's meeting is then held to arrive at a final decision on the minimum wage adjustments with all of the parties attending. In 2014, the GFTU, the GEC, and the GFIC argued strenuously over the minimum wage adjustments, and although they narrowed the gap between them, a gap of one yuan remained. It was the provincial governor who made the final decision that closed the gap.

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### **Round 4: Meeting of the Provincial Party Committee**

Once the provincial governor's meeting and the MHRSS agree on the minimum wage adjustments, the proposal is reported to a meeting of the Provincial Party Committee, which makes the final decision to publish it.

## **Challenges in the Consultation Process in Both Shanghai and Guangdong**

The tripartite consultation mechanisms in both Shanghai City and Guangdong Province are more or less consistent with what is envisioned in the 2004 regulations. According to officials from the MHRSS, most provinces hold only two or three rounds of meetings to discuss and negotiate the minimum wage adjustment. In a few provinces, the provincial Bureau of Human Resources and Social Security drafts a proposal first and then asks for advice from the other parties to the tripartite consultation.

Even in provinces like Shanghai City and Guangdong Province, which conduct the tripartite consultation mechanism more thoroughly than others

do, the eventual proposal to adjust the minimum wage can be affected by other, unexpected factors, especially political factors. Unlike Shanghai and Guangdong, , most provinces regard the tripartite consultation mechanism as a required mechanism for collecting information and advice, not a decision-making mechanism as it was first designed to be. The main reason it cannot play a decisive role in this wage setting process is that the 2004 Regulations on Minimum Wages were approved only by a relatively low legislative level of the government.

The high cost of running tripartite consultations is another challenge that hinders some provincial governments from running them in a way that is consistent with the process envisioned in the 2004 regulations. The consultation process always lasts for several months, and in Shanghai City, the whole process takes more than half a year, which cost too much time and human resources according to the officials in SBHRSS. However, an even greater obstacle to setting the minimum wage level in a rigorous fashion that takes different points of view into account is the tight schedule, according to officials in Shanghai from the SBHRSS, the SFTU, the SEC, and the SFIC. In Guangdong Province, even though the process is only four rounds, it still takes half a year to complete. This is at least partly because Guangdong Province has multiple minimum wage levels that have to be discussed compared to the single minimum wage level that Shanghai City needs to negotiate.

## 6. Formulas for Updating Minimum Wage Levels

According to the 2004 Regulations on Minimum Wages, several factors should be taken into consideration in any adjustment of a minimum wage: (i) the state of economic development; (ii) local employment conditions; (iii) the minimum cost of living and CPI; (iv) the employee's payment into social insurance and housing funds; and (v) enterprises' average labor costs (Shira, 2016). Thus, the following factors must be taken into account:

$$M = f(C, S, U, A, E, a), \quad (1)$$

where  $M$  represents the minimum wage,  $C$  represents the average living costs of urban residents,  $S$  represents the social insurance and housing fund premiums paid by employees,  $U$  represents the rate of unemployment,  $A$  represents the average wage, and  $E$  represents the level of economic development, while  $a$  represents other factors affecting the minimum wage adjustment. In practice, officials all over China mainly use indicators that are proxies of the minimum cost of living for local workers and their dependents, the CPI, and employees' payments into the social insurance and housing provident fund.

In this formula, the data on the minimum costs of living for local workers and their dependents is derived from the 10 percent Urban Residential Survey conducted by the local bureau of statistics, which provides the data directly to the local bureau of human resources and social security but does not release them publicly.

The CPI data are publicly released. However, the MHRSS requires provincial governments to focus on price changes in the first four items in the index – (i) food, tobacco, and liquor; (ii) clothing; (iii) housing; and (iv) household goods and services – since they are most closely related to the basic living costs of the workforce. The last four items in the CPI (transportation and communication; education, culture, and recreation; health care; and other goods and services) do not have to be considered. In some provinces, the local bureau of statistics can also provide the local bureau of human resources and social security with the “special CPI” (SCPI), which is a price index published only internally that is used to measure changes in the price of goods and services from the perspective of low-income families.

The proxy for the average wage of employees is the average wage of employed persons in urban private companies at the prefecture level, and this is provided by the local bureau of statistics. The proxy for the level of economic development is non-agricultural per capita GDP.

Besides the factors explicitly stipulated by the 2004 regulations, provincial governments also take other factors into account, the most important of which is the country’s anticipated economic development in future. During the Round 1 meeting in Guangdong Province, the local bureau of human resources and social security always presents the participants with its understanding of both the national economic development outlook and the provincial economic development outlook. This is why, in recent years, as downward economic pressure has increased, the provincial government has decreased the frequency of its adjustments to the province’s minimum wage levels.

When adjusting minimum wage levels, provincial governments also consider whether enterprises could bear the resulting burden of increased labor costs or if increases could produce negative employment effects. In China, the employment rate is seen as a major indicator of the government’s performance, including at the provincial level. Officials tend to believe that the stable employment of the workforce is the foundation of a stable society. Therefore, the government is always concerned about any possible negative effects that a minimum wage increase could have on employment, especially when small companies complain that the burden of their labor costs is too heavy.

In contrast, provincial officials deny that they ever think about or take any actions based on competition with other provinces that have a similar economic development status when adjusting the minimum wage. They do admit, however, that once they have completed their proposals for adjusting the minimum wage, they like to informally ask the MHRSS about other provinces’ proposals, but only to use them as a reference point.

## **Methodology**

According to the 2004 regulations, either of two methods can be chosen by

a provincial government when it is revising its minimum wage levels: the *proportion method* or the *Engel's coefficient method*. In the proportion method, research on the livelihoods of urban residents is used to identify a certain proportion of families with the lowest income as “poverty-level families.”. The average living costs for these poverty-level families are then multiplied by a coefficient for the number of people supported by each employee and adjusted for other relevant factors to derive a final result.

In the Engel's coefficient method, the minimum personal expenditure on food is calculated using the annual recipe, and the quantity of food consumed published by the National Nutrition Academy, and the market prices of that food. The minimum food expenditures are then divided by the Engel's coefficient (that is, the proportion of household income spent on food) in order to calculate a minimum living cost. The resulting minimum living cost is then multiplied by a coefficient for the number of people supported by each employee and adjusted for other relevant factors to derive the result.

According to the 2004 regulations, after working out the levels of the monthly minimum wage using the two methods, those deciding on a minimum wage should also take into consideration the following factors already mentioned above: (i) the social insurance premiums paid by the employees; (ii) contributions to the housing fund paid by the employees; (iii) the average wage of the employees; (iv) social assistance grants and the levels of unemployment premiums; (v) the employment rate; and (vi) the overall level of economic development in the relevant area.

For example, if, in a certain region, the minimum monthly living cost of poverty-level families is Yuan 210, the coefficient for people supported by each employee is 1.87, the minimum expense for food is Yuan 127, the Engel's coefficient is 0.604, and the average wage is Yuan 900, then:

Using the proportion method,

$$\text{the monthly minimum wage} = 210 \times 1.87 + a = 393 + a \text{ (Yuan)} \quad (2)$$

And using the Engel coefficient method,

$$\text{the monthly minimum wage} = (127 \div 0.604) \times 1.87 + a = 393 + a \text{ (Yuan)} \quad (3)$$

In both examples (2) and (3), the adjustment mainly results from the employees' contributions to their pension, unemployment, and medical insurance, and also to the housing fund.

The LBHRSS in both Guangdong Province and Shanghai City have adopted the proportion method to calculate minimum wage levels because the data needed to use this method are easier to obtain. In Guangdong Province, the GBHRSS is in charge of calculating the appropriate minimum wage levels using the proportion method, and the outcome of the relevant calculation is the draft proposal that the GBHRSS presents to the GFTU, the GEC, and the GFIC during the Round 1 consultation, seeking their opinion as to whether the proposal is appropriate. In Shanghai City, the SBHRSS also calculates the minimum wage level using the same method. However, the

SBHRSS does not show its results to the SEC, the SFIC, or the SFTU because it does not want to influence their positions. Instead, it uses the calculation result as a benchmark against which to compare the proposals that emerge in the tripartite consultations. When Round 2 ends, the SBHRSS makes a comprehensive proposal for the minimum wage adjustment, taking into consideration each side's standpoint and its own calculation.

## **7. Enforcement of the Minimum Wage**

The LBHRSSs are in charge of enforcing compliance with the minimum wage by local enterprises through their labor supervision sections. According to officials in the Shanghai government, its enforcement efforts are intense. SBHRSS can impose the administrative punishment on the enterprises not complied with the minimum wage level and have rights to examine the enforcement of the minimum wage of enterprises. The Local Labor security supervision team, affiliated to the LBHRSSs, is in charging of imposing punishment. They claim that, although managers of small companies complain about the rising minimum wage level boosting their labor costs, no companies would take the risk of violating the government's regulations. They also claim that there have been no recorded violations of the minimum wage level. To confirm this claim, we checked all judgements in Shanghai between 2013 and 2018 and did not find any cases relating to the violation of the minimum wage level.<sup>38</sup>

In Guangdong Province, if a company is suspected of not complying with the minimum wage system, its workers can complain to the labor supervision section of the LBHRSS, who will then conduct a special inspection of the alleged noncompliant company. The local labor supervision section also carries out regular routine inspections of businesses and has the right to inspect any company's records of its payments to workers.

### **7.1 Employers' Perceptions of the Minimum Wage**

Given the current concern of government officials that the relative increase in the minimum wage vis-à-vis the average wage, we also conducted in-depth interviews with employers in both provinces and to gather additional qualitative information on their perceptions of the minimum wage setting mechanism. .

## **Shanghai**

We conducted in-depth unstructured interviews in three companies in Shanghai that varied in size and activity: (i) a small, state-owned company in the financial sector; (ii) a large-scale private company in the logistics sector;

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<sup>38</sup> "China Judgements Online" is an open source database of all legal judgements in China.

and (iii) a small, private company in the processing and assembling trade. According to the information we got from the companies' representatives, the minimum wage level has no significant impact on the employment and total wage bill of larger companies but does have a significant impact on that of small manufacturing companies where the basic wage of workers is equal (or close) to the minimum wage level. Moreover, incentive and overtime payments in small companies are calculated by multiplying the basic wage by a fixed coefficient, which affects the total wages earned by these employees and the total wage bill of the firm.

In two companies (the small, state-owned company in the financial sector and the large-scale private company in the logistics sector), wages are above the minimum wage level, so the adjustment of the minimum wage has had little impact on their labor costs. However, according to the CEO of the small private company in the processing trade, the minimum wage has grown faster than the relevant market wages for their workers. This firm pays workers the hourly minimum wage for a standard working period of 174 hours per month.<sup>39/40</sup> The overtime wage is 1.5 times the basic wage rate. The full wage of a worker is equal to the basic wage rate plus any overtime wages plus social security benefits (which are based on the basic wage rate, according to law). Therefore, the minimum wage level decides not only the basic wage of workers but also their overtime wages and social security benefits.

Another concern arising from higher minimum wages is that they can negatively affect the use of performance-based-payments. Performance-based pay can be an effective way to encourage workers to improve their performance at work and is widely used in manufacturing factories in China and all over the world. However, if the minimum wage level is higher than the equilibrium price, then employers will not pay more for workers who perform better than others within a given factory. This was confirmed by the managers of the small-scale private company in the processing trade who said that, because the minimum wage level is much higher than the market wage level, it cannot offer incentive pay to its workers.

The pressure of rising minimum wages can give companies an incentive to relocate to places with lower labor costs. The CEO of the small private company in the processing trade reported that this was why they had moved most of their production line to Zhejiang Province where labor costs are lower than in Shanghai and where the minimum wage is actually lower than

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<sup>39</sup> The wage rate for its managers is higher than the minimum wage and is not affected by changes in its level.

<sup>40</sup> According to the Labor Law of 1995, the standard working period is 8 hours per day, and there are 21.75 working days per month. According to the Notice on the Monthly Average Working Hours and Wages Conversion of Employees issued by the Ministry of Labor and Social Security in 2008, the standard working period is 8 hours per day, but the number of working days per month went down to 20.83. We used the 1995 standards in this chapter which is more commonly used in juridical practices.

the area's market wage. Only the management staff and a small portion of the workers still work in Shanghai. According to the CEO, a large number of private companies that are of a similar size have also moved their plants out of Shanghai to other provinces because of soaring labor costs. At the same time, one positive impact of the rising minimum wage level has been that it stimulates companies to become more efficient. Also, the CEO of this small company also admitted that the rising minimum wage level has not been the only source of labor cost pressures. Another source of pressure is that companies must cover part of the social security contributions of their workers, which accounts for about 50 percent of the total labor cost of each worker.

As explained above, small companies often lack a voice during tripartite negotiations. Because of its small scale, the small private company in the processing trade is not a member of the Shanghai Enterprise Confederation (SEC) nor of the Shanghai Federation of Industry and Commerce (SFIC). It has not participated in any kind of survey conducted by the SEC or the SFIC or by any other departments of government.

In large companies, where the wage rate is much higher than the minimum wage, the minimum wage level affects the level of benefit that an employee receives when on sick leave. According to the 1995 Opinions on Several Problems of Implementing the Labor Law of the People's Republic of China published by the former Ministry of Labor, the benefit level cannot be lower than 80 percent of the minimum wage level when an employee is on sick leave.

## **Guangdong**

We interviewed two manufacturing companies in Guangdong Province that differed in size and activity: (i) a large-scale manufacturing company producing the automobile components and (ii) a small manufacturing company producing clothes. In the large firm, wages are set through a process of collective bargaining between the factory union and its management. The average wage level at this company is considerably higher than the minimum wage so the minimum wage level has no direct impact on either employee or employer outcomes. Although the management would like to use the minimum wage level to reduce the company's wage bill, the collective bargaining discussions always result in wages being set at higher levels than the minimum wage. At the same time, managers of both the large and the small firm stated that they use the growth rate in the minimum wage as a rationale for restraining the growth rate in their own wage levels.

In contrast, at the small company, the minimum wage level is the wage floor, and the minimum wage has a spillover effect on the wage distribution. According to the CEO of this company, when minimum wages are increased, the wages of those workers whose wages were below the new minimum wage level are increased to the new the minimum wage level. For employees whose



wages are already above the new minimum wage level, the company's human resource department will consider increasing their wage level based on both the increase in the minimum wage and any increase in the market wage.

## **7.2 Discussion**

The procedures used to adjust minimum wages are themselves a way to raise awareness about the imminent adoption of the new minimum wage levels. Even though the enterprises that have taken part in surveys carried out by the LEC or the LFIC do not know the exact amount of a planned increase, they understand that these surveys are being conducted in preparation for adjusting the minimum wage and that, in most cases, an adjustment means an increase. Consequently, enterprises can adjust their own budgets to account for increased labor costs in advance of new minimum wage levels being decided. Currently, Shanghai's enterprises can expect a stable rise in the minimum wage every year so can confidently change their own budgets accordingly.

According to the different parties in the tripartite consultation the minimum wage system serves many purposes beyond the MHRSS's original objective of guaranteeing sufficient income to all workers (especially low-income workers). Some provincial governments perceive the minimum wage as a way to narrow the income gap, as was emphasized by the central government during the period of the Twelfth Five-Year Plan. Other provincial governments perceive the adjustment of the minimum wage as a demonstration of the government's concern for the well-being of low-income households. Nevertheless, as the minimum wage system has developed, its objective has tended gradually to return to its initial purpose: to guarantee wages for the low-income working group. In particular, since the beginning of the Thirteenth Five-Year Plan, the minimum wage growth rate has slowed down, and the central government has begun to discourage the use of the minimum wage as a tool to narrow income disparities.

The relatively low legislative status of the 2004 Regulations on Minimum Wages has led some provinces to take a casual approach to making decisions to adjusting the minimum wage level. Unlike Shanghai and Guangdong, most provincial governments may not be willing to invest enough resources to fund the tripartite minimum wage adjustment consultations or evaluations of the effect of the minimum wage level on their local labor markets. Even in Guangdong Province and Shanghai City, when the consultations' results are reported to the meetings of the provincial or municipal party committee, the adjustment plan can be changed for political reasons without being returned to the tripartite consultations (even though the results may have been agreed to by all parties in the tripartite consultations beforehand). Although such situations have been rare in Guangdong Province and Shanghai City, this indicates that the setting of the minimum wage can be affected by reasons not governed by the 2004 regulations. It will take further time and effort to increase the legislative level of the minimum wage system.

The MHRSS envisions that, in the future, the minimum wage adjustment process in China will consist of three stages: (i) prior guidance from the MHRSS to the provincial governments before the tripartite consultations begin; (ii) the tripartite consultations; and (iii) an ex-post evaluation of the minimum wage's effects. The prior guidance from the MHRSS will be based on data accumulated since 2004 and will cover whether or not to adjust the minimum wage level and by how much. The ministry will also promote the further development of the tripartite consultation mechanism by providing a more detailed guideline on how to conduct it and requiring each province to comply with it strictly. After the minimum wage level is adjusted, the provincial government will be expected to evaluate its effects on the local labor market in accordance with the ministry's requirements. This evaluation will also yield evidence to be used in the next adjustment round.

Although the MHRSS already tries to promote the further development and use of tripartite consultations in minimum wage adjustments, the preconditions necessary for holding effective tripartite consultations in China are not always met. The LFTU, the LEC, and the LFIC represent only a portion of all enterprises, and the voices of small private enterprises are rarely heard. For example, in Shanghai City, the total number of enterprises in 2017 was more than 500,000, but the membership of the SEC was only about 20,000, most of them large companies. This lack of representation has forced the provincial government to conduct its own surveys on companies' labor costs and the effects of minimum wages on enterprises.

Another hurdle to holding effective tripartite consultations is that representatives of labor and enterprises are not completely independent of one another. For example, both the LFTUs and the LFICs are mass organizations authorized by the Chinese Communist Party, and a portion of their funding comes from fiscal support.

In contrast, the LECs are relatively independent, but, because of a lack of funds, they often cannot afford to carry out regular surveys of the likely effects of higher minimum wage levels on enterprises. This has been the case in Guangdong Province. The high administrative costs of the tripartite consultation mechanism also impede its further development. Even in Shanghai City, the Joint Conference and Municipal Executive Meeting tend to be held together to reduce administrative costs.

As already pointed out, the difference in relative organizational power among the three major stakeholders is a challenge as well. The LFTUs are much stronger than the LECs and the LFICs. Overall, there has been a tendency in the tripartite consultations for the LECs and the LFICs to have a weaker voice than the LFTUs and the government, even though this is not the intention of the MHRSS.

Moreover, in most provinces the relationship between the LECs and the LFICs is complicated. During negotiations with the LFTUs, the LECs and the LFICs are expected to reach a consensus on the minimum wage level first on behalf of their member employers and then to bargain over this with

the LFTUs. However, the willingness of the LECs and LFICs to cooperate in reaching a consensus varies between provinces. In Shanghai, because the SEC has participated in tripartite consultations for much longer than the SFIC, the SFIC usually respects the suggestions and decisions of the SEC, making it easy for the organizations to reach a consensus. In Guangdong Province, the GFIC and GEC compete with each other to be the primary voice of employers on the minimum wage adjustment, and therefore they find it harder to reach a consensus. To some extent, the source of that friction is political, not economic.

It is also worth asking if the minimum wage system affects the wage distribution within and among firms. In practice, many enterprises, especially small companies, set the minimum wage as their basic wage level and base other forms of compensation on it, including overtime pay, benefits, and incentive compensation. Because the minimum wage policy has now been operating for several years, it has begun to affect the entire earnings distribution within firms. If the minimum wage level were not to be raised, then firms would not increase their own basic payment levels for workers, and the total compensation received by workers (including those earning more than the minimum wage) would not change.

Another tendency that has emerged in adjusting the minimum wage is that it is focused on a simplified set of indicators. Both the MHRSS and the provincial governments emphasize using a broad set of economic indicators to decide whether to adjust the minimum wage level and by how much. However, in practice the model for minimum wage adjustments established by the MHRSS that is used throughout China is relatively simple, incorporating only the minimum cost of living for local workers and their dependents, the average wage of employees, and the province's per capita GDP. It might be argued that this simplified model cannot sufficiently reflect the complex social and economic realities that exist in the many different regions of China.

Unlike the conclusions reached in previous, more quantitative literature (Li and Lin, 2015; Xing and Xu, 2016; and Kanbur et al, 2017), in our research based on case studies, we did not find any evidence that cities and counties are competing with one another in trying to attract outside investment by setting the lowest minimum wage. Our conclusion is based on two findings. First, the prefecture-level and city/county-level governments have no impact on setting the minimum wage level. Even in the few provinces where the prefecture-level governments do have some interaction with the provincial government, the final adjustment of the minimum wage level is decided by the provincial government.

Second, in our case study provinces – Shanghai City and Guangdong Province – officials did not accept the “race to the bottom” assumption based on competing for outside investment, declaring instead that the function of the minimum wage is to guarantee a minimum standard of living for the low-income workforce and that the minimum wage has very little effect on the average wage in the labor market. Neither did they accept the argument that officials are sensitive to “losing face.” They argued that the procedure

for setting the minimum wage is based on a rational approach that takes into account comprehensive information on the relevant indicators. They admitted that the information that they collect includes data on neighboring provinces or provinces at similar levels of economic development but contended that this information is not a crucial to their minimum wage setting process.

## 8. Conclusion

This Chapter described the process of adjusting the minimum wage level in China in detail and analyzed the factors considered by different stakeholders using two provinces, Shanghai and Guangdong as the research cases. As the black box of determination of minimum wage level being opened, we found it is involved with complicated economic and political considerations and balance between tripartite stakeholders. On one hand, those findings will supplement the current research on factors that influence the minimum wage level and tripartite mechanism using in determining the minimum wage; on the other, they will impact the future research on the effect of minimum wage in China most of which only thought the labor market results such as employment, income as the results of minimum wage but not its causes.

Regulated by the 2004 *Regulations on Minimum Wages*, the process and factors of adjusting new minimum wage level at provincial level are relatively clearly regulated. However, the reality is still far from the ideal situation the policy makers designed. The lower legislative level in China's legislative system of *Regulations on Minimum Wages* made the minimum wage level easily affected by other economic or political factors which are not included in the *Regulations*. The high administrative cost of tripartite mechanism and executive guided decision-making mechanism make local governments tend to choose simpler way to determine the minimum wage. The gap of organizational strength between tripartite stakeholders and the lack of representative of small enterprises make the voice of small enterprises ignored. Many enterprises in Shanghai and Guangdong has formed an expectation that minimum wage will always rise up next year.

It can be concluded that the improvement of minimum wage system is still ongoing. The MHRSS try to use its administrative power to strengthen the function of tripartite consultation mechanism in setting the minimum wage levels. Besides tripartite consultation, MHRSS also put forward prior guidance and ex-post evaluation. All those measures are trying to improve the way of minimum wage determined at provincial level.

This Chapter selected two provinces: the Shanghai City municipality in the Yangtze River Delta, which that operates directly under the central government, and Guangdong Province in the Pearl River Delta. The process of determination of minimum wage in those two provinces are praised by the MHRSS because of their organization and relative integrated tripartite consultation. However, the complicated economic and social situation in China has resulted in a minimum wage system that is not uniform across the country

but uses different formulations and is implemented differently in different provinces. Within each provinces, prefecture-level and city/county-level governments do not participate in setting minimum wages. How to make sure the voice from small scale business and prefecture and county-level are heard by the provincial government in determining minimum wage is still worthy to be designed. The complicated economic and social situation in China has resulted in a minimum wage system that is not uniform across the country but uses different formulations and is implemented differently in different provinces. Provincial governments are in charge of organizing the negotiations over minimum wage adjustments and making decisions about their levels. In theory, prefecture-level and city/county-level governments do not participate in setting minimum wages setting. However, in practice, a few provinces have adopted a more bottom-up approach to adjusting the minimum wage in which the prefecture-level governments can play a limited role.

The government and the relevant stakeholders have basically achieved a consensus on the role that the minimum wage should play, which is to guarantee adequate basic living conditions to low-income workers. During the period of the Twelfth Five-Year Plan (2011 to 2015), the minimum wage system was given the addition objective of narrowing the income distribution, but downward economic pressures have forced the government to suspend this objective since the beginning of the Thirteenth Five-Year Plan period.

The current minimum wage system in China is based on the 2004 Regulations on Minimum Wages, issued by the MHRSS. This regulation was issued by the third level in China's legislative system, and this has meant that many provinces have been somewhat casual in their implementation of the minimum wage system. However, there is room within the regulations for the MHRSS to improve and revise the system, including how the minimum wage is set and implemented, without the need for a complicated and long-drawn-out legislative process.

As mentioned, the provincial governments hold the primary responsibility for setting minimum wages and have the right to make final decisions. Before these governments decide on the minimum wage level, however, they are supposed to thoroughly listen to the opinions of relevant stakeholders and to take into account the realities of the province's economic and social development. The 2004 regulations specify that stakeholders opinions should be solicited through tripartite consultations, during which different stakeholders may take substantially different positions. Meanwhile, the government is supposed to play a neutral role and should aim to reconcile any disagreements between labor unions and enterprise representatives and to urge them to reach a consensus. In the case of Shanghai City, the final decision on the adjustment of the minimum wage level is almost entirely the result of the tripartite consultations. In Guangdong Province, the tripartite consultations play an essential role in setting the minimum wage, though they are not quite as determinative.

The MHRSS is willing to further promote the function of the tripartite

consultation mechanism in setting the minimum wage levels. However, there are already some obstacles that are preventing the tripartite consultation mechanism from being used effectively. In practice, the tripartite consultation mechanism is weakened by a lack of representation of small enterprises, high administrative costs, insufficient independence between the three stakeholder organizations, imbalances in bargaining power between them, and the increasingly strong voice of the government.

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# The Distribution and Determinants of Minimum Wage Rates

Achim Schmillen, Michael Stops, and Dewen Wang

## 1. Introduction

As mentioned in Chapter 1 of this volume, many researchers have studied the effects of minimum wage rates on wages, employment, and other outcome variables, particularly since the seminal study by Card and Krueger (1994). However, the distribution and determinants of minimum wages have received relatively little attention in the literature. Whitaker et al (2012, p. 631) noted that, “(t)he fact that [minimum] wage increases are understudied is particularly puzzling given the fierce ideological conflict [that] the policy engenders.”

Complementing the case study approach taken in Chapter 4, , we shed light on these questions. Using a highly disaggregated macro panel of county-level minimum wage rates and other highly disaggregated macro variables from 2005 to 2014, we quantitatively investigated the distribution of minimum wages in China and the processes used to adjust them. As explained in Chapter 4, China has no uniform nationwide minimum wage. Instead, the country’s Five-Year Plans set general targets for minimum wage levels that are then set by provincial governments according to local conditions as authorized by the Minimum Wage Regulations of 2004. The Minimum Wage Regulations also give the provincial governments the discretion to set different minimum wages in different prefectures and even counties within each province. In principle, this means that there could conceivably be a different minimum wage set for each of China’s 2,862 county-level administrative divisions.

Given this potentially enormous variation, we first describe the distribution of minimum wages in China and then use econometric models to investigate the economic and non-economic influences underlying how minimum wages are set across the country. The econometric models correlate minimum wage rates with proxies for the factors that provincial governments are supposed to consider when setting their minimum wage

rates, according to the Minimum Wage Regulations. The data on county-level minimum wage rates and other variables that we used came from a range of Chinese administrative and other data sources including Provincial Statistical Yearbooks and China Labor Statistical Yearbooks.

We used spatial econometrics techniques to study the role played by both uniform trends across China and spatial interaction effects between subnational governments. We hypothesized that spatial interaction effects play a prominent role in determining minimum wages in a context where subnational governments compete with each other for investors or mobile workers. In fact, representatives of China's subnational governments tend to emphasize that minimum wages are set according to strictly economic criteria (see Chapter 4). At the same time, minimum wages are often seen by the media and anecdotally as a strong signal of a locality's level of labor costs (Financial Times, 2010; Reuters, 2011; and CBS News, 2014). This leaves open the possibility that minimum wages depend on spatial interaction effects.

The detailed description of China's minimum wage rates in this chapter focuses on their distribution within and between provinces, in relation to monthly wages, and over time. It shows that between 2005 and 2015 the average monthly minimum wage rose monotonically and at a very fast pace, with a brief pause only at the depth of the global financial crisis in 2009. In each cross-section, the span width between the lowest and the highest minimum wage was substantial. We decomposed the overall variation of minimum wage rates into variations between provinces, between prefectures within provinces, and between counties within prefectures, and we found that most of the overall variation could be attributed to variations between provinces. In each year of the investigation period, this was the case for at least 50 percent of the overall variation. In contrast, variations between prefectures within provinces generally only accounted for around 20 to 30 percent of the overall variation and variations between counties within prefectures for another 10 to 15 percent. Over the entire investigation period, the ratio of minimum wages to average wages slightly decreased until 2009, the year of the global financial crisis and increased slightly afterwards. However, in 2005 the ratio amounted to 0.29 in the median county, which was exactly the same value that was recorded 10 years later.

To investigate the economic and non-economic influences on the setting of minimum wages, we used a series of regression models that included controls for county-specific explanatory variables and fixed effects as well as time fixed effects. Our regression results suggest that local price levels and per capita GDP are the most important economic determinants of minimum wage rates. Localities with higher prices and higher per capita GDP tend to have higher minimum wage rates. Other proxies for factors mentioned in the Minimum Wage Regulations, such as the average annual salary or the employment-to-population ratio,



had no statistically significant effects. For a third group of proxies, the contribution rates for three branches of social insurance (unemployment insurance, maternity insurance, and injury insurance), our results were not robust.

Arguably, in addition to the factors that provincial governments are supposed to consider in setting minimum wage rates, other – non-economic – factors may also have explanatory power with regard to China's minimum wages. In exploring this hypothesis, we assumed a spatial dependence structure based on local contiguity, and our results indicated that spatial dependence plays an important role in explaining the variance of minimum wage rates across counties. This finding corroborates the hypothesis that non-economic factors have explanatory power with regard to minimum wage rates. Furthermore, it is consistent with the point of view that, in addition to economic factors and possibly also central adjustment mechanisms, competition between subnational governments influences their minimum wage setting behavior.

As discussed in Chapter 3, Huang et al (2014) and, later, Xing and Xu (2016) documented the subnational variation in Chinese minimum wages and attempted to explain this variation. In addition, Dreger et al (2016) and both used spatial econometrics techniques to investigate the determinants of China's minimum wages at the subnational level. However, neither Dreger et al (2016) nor made full use of county-level data, even though China's minimum wages vary at this level as detailed in Chapter 3. This measurement error might have biased their estimates, and at least it left room for our analyses exploring the full variation of minimum wages at the county level.

The remainder of this chapter is structured as follows. Section 2 reviews the relevant literature and describes our highly disaggregated panel data set. Section 3 summarizes statistics on the distribution of minimum wages in China, while Section 4 presents the findings of our main multivariate analysis, including from models using random effects and spatial econometrics techniques. Section 5. presents our conclusions.

## 2. Data Sources

To quantitatively investigate the distribution and determinants of minimum wages in China, we used a highly disaggregated macro panel of county-level minimum wages and other variables. The data on county-level minimum wages came from various local government websites, while the data on other variables came from official statistical compendia such as Provincial Statistical Yearbooks and China Labor Statistical Yearbooks as well as from CEIC and WIND, two widely used commercial databases. The geospatial data that we used for the spatial econometrics models came from the “China Administrative Boundary Maps” based on the 2014 Administrative Divisions of Township as defined by the Ministry of Civil Affairs.<sup>41</sup> In general, we used annual data for the entire Chinese mainland exclusive of Hong King,

Macao, and Taiwan, and our investigation period ran from 2005 to 2014. As geospatial data were only available for 2014, we assumed that the spatial structure of China's administrative divisions remained unchanged throughout the investigation period.

Because the highly disaggregated macro panel was constructed using data from various different sources, we conducted a careful harmonization and validation exercise to make sure that the data were matched correctly and coherently over time and across data sources. In addition, the data were carefully cleaned, observations with unrealistic variable values were excluded. For instance, following the policy guidance from the Chinese government that was in effect during the investigation period, there should have been no instances where minimum wages were lowered from one year to the next. However, the raw macro panel contained a very small number of these instances, which were therefore all excluded from the analysis.

As mentioned in Chapter 3, the Minimum Wage Regulations specify that provincial governments should consider the following factors when setting minimum wage rates: (i) the consumer price index (CPI) in urban areas; (ii) the average wage level; (iii) the level of social pension contributions and housing provident fund contributions by workers; (iv) the local employment situation; (v) the level of economic development in the province; and (vi) the minimum living expenses of local workers and their dependents. As information on these factors is not directly available in publicly accessible disaggregated macro data, we used the following proxy variables: (i) a weighted average of rural and urban price levels (henceforth "the price level"); (ii) the proportion of contributors to unemployment insurance, maternity insurance, and injury insurance among the population (henceforth the "participation ratio in unemployment insurance," "the participation ratio in maternity insurance," and "the participation ratio in injury insurance"); (iii) the average annual salary; (iv) the employment-to-population ratio; and (v) per capita GDP. According to the Minimum Wage Regulations, all of these proxy variables can be expected to be positively correlated with local minimum wage rates. For details, see Table 5.1.

In Table 5.1, both the employment-to-population ratio and per capita GDP are measured at the county level. The price level, the participation ratios in different kinds of social insurance, and the average annual salary are all measured at the provincial level. When information on minimum wage rates was not available for a county but was available for the prefecture in

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<sup>41</sup> The "China Administrative Boundary Maps" are copyrighted by the All China Marketing Research Co. Ltd. and are exclusively distributed by the China Data Center at the University of Michigan.

which the county belongs, we imputed the missing minimum wage rate by assuming that minimum wages were the same in all counties with missing information within the prefecture in question.

The levels of social pension contributions and housing provident fund contributions made by workers were proxied by three variables (the participation ratios in unemployment, maternity and injury insurance), while all of the other factors mentioned in the Minimum Wage Regulations were each proxied by one variable. The only factor mentioned in the Minimum Wage Regulations for which an appropriate proxy was not available was the minimum living expenses of local workers and their dependents. Because only some of the provinces stipulate that social insurance contributions should be taken into account in determining whether a certain wage complies with the Minimum Wage Regulations, we also collected province-level information on whether or not this provision applies. When calculating the employment-to-population ratio and participation ratios in social insurance, we used the number of individuals with a household registration (or hukou) in a certain locality to constitute the population.

**Table 5.1: Proxies for Factors Listed in the Minimum Wage Regulations**

| <i>Factor in the Minimum Wage Regulations</i>  | <i>Variable in the data set</i>               | <i>Level</i> | <i>Source</i>   |
|--|---|--------------|---|
| CPI in urban areas   | Price level                                   | Province     | Provincial statistical yearbooks 2005-2014, Brandt and Holz (2006)  |
| Average wage level   | Average annual salary                         | Province     | Provincial statistical yearbooks 2005-2014                          |
| Level of social pension contributions and housing provident fund contributions made by workers | Participation ratio in unemployment insurance | Province     | China Labor Statistical Yearbooks 2005-2014                         |
|  | Participation ratio in maternity insurance    | Province     | China Labor Statistical Yearbooks 2005-2014                         |
|  | Participation ratio in injury insurance       | Province     | China Labor Statistical Yearbooks 2005-2014                         |
| Local employment situation   | Employment-to-population ratio                | County       | CEIC, WIND, China County Economic Statistical Yearbook 2005 to 2014 |
| Level of economic development  | Per capita GDP                                | County       | CEIC, WIND, China County Economic Statistical Yearbook 2005 to 2014 |

*Source:* Authors based on the Minimum Wage Regulations.

Not all of the proxies that we used can be expected to be (almost) perfectly correlated with the factors that provincial governments are supposed to consider when setting minimum wages. Also, some confidential information used by provincial governments was not available to us (see Chapter 4). However, the Minimum Wage Regulations themselves are somewhat ambiguous or sometimes even contradictory about the factors

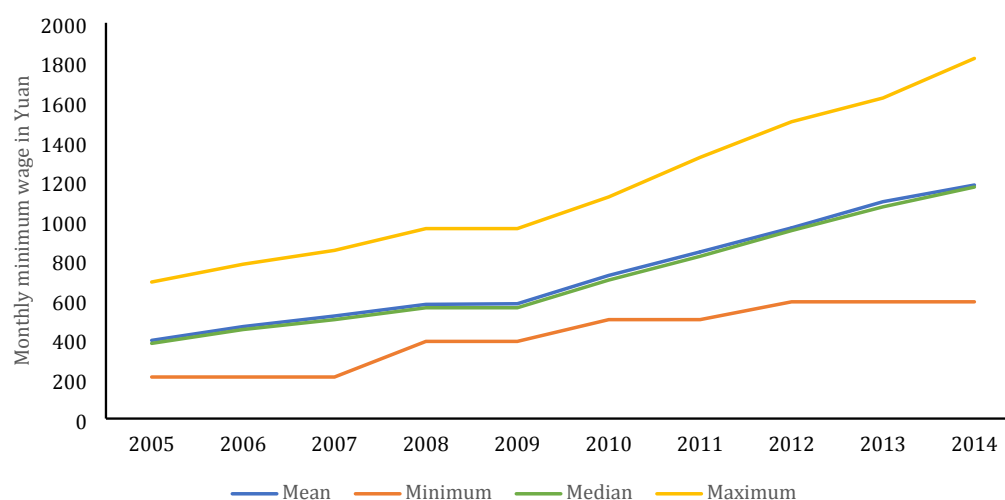
that provinces are expected to consider.<sup>42</sup> Moreover, if we found a certain proxy to be available in a relevant data source, then at least in principle it is also easily accessible to the relevant subnational governments and thus may influence their decisions. In contrast, some of the factors directly mentioned in the Minimum Wage Regulations (such as the local employment situation) are either defined rather vaguely or data on these factors are not collected in all counties across China. This also makes it difficult for the relevant subnational governments to incorporate these factors into their decision-making in a meaningful way.

### 3. Distribution of Minimum Wage Rates

#### Time Series of Minimum Wage Rates

Figure 5.1 plots average minimum wage rates at the county level for every year from 2005 to 2014 and also the lowest, median, and highest minimum wage for each of those 10 years. In this and the following figures and tables, minimum wage rates are expressed on a monthly basis and in nominal terms. We calculated the average values for minimum wage rates and other variables at the national level as unweighted averages of values for individual counties and applied the same principle to the calculation of median values at the national level.

**Figure 5.1: Time Series of Minimum Wage Rates, 2005-2014**



Source: Authors' calculations.

Figure 5.1 shows that in 2005 the average minimum wage rate amounted to Yuan 395 per month. Between 2005 and 2015, the average monthly

<sup>42</sup> An appendix to the Minimum Wage Regulations lists slightly different factors than those mentioned in the main text. In particular, the CPI is not mentioned and, instead of specifically mentioning social pension contributions, a more generic reference to social security contributions is made. Moreover, instead of the employment situation and minimum living expenses, the appendix refers to the unemployment rate and to average living expenses.

minimum wage rose monotonically, with a brief pause only at the depth of the global financial crisis in 2009. The average monthly minimum wage reached Yuan 1,180 per month in 2014. Throughout the investigation period, the median minimum wage was almost indistinguishable from the average minimum wage. For instance, in 2005 the median minimum wage amounted to Yuan 380 per month (Yuan 15 less than the average minimum wage), while in 2014 the median minimum wage stood at Yuan 1,170 per month (Yuan 10 less than the average). In each cross-section, the width of the gap between the lowest and the highest minimum wage is quite substantial. In 2005, the lowest minimum of Yuan 210 was recorded in Pucheng, a county in Shaanxi Province, while the highest minimum wage could be found in some counties in Shanghai, Jiangsu, and Guangdong Provinces (see Chapter 4). At Yuan 690, it was more than three times higher than the lowest minimum wage. In 2014, the highest minimum wage was Yuan 1,820. This was again more than three times higher than the lowest minimum wage, which stood at Yuan 590.

More detail on the distribution of minimum wage rates for each year from 2005 to 2014 is provided in Table 5.2. The table lists the minimum, median, and maximum minimum wage that were depicted in Figure 5.1 as well as the time series for all other deciles of the minimum wage distribution. For most of the investigation period, all deciles from the first to the ninth stay relatively close together and move more or less in parallel. The minimums and maximums of the distribution stand out as being notably lower and higher than all of the other deciles. The relatively wide gaps between the highest minimum wage rates and the ninth decile can likely be explained by the exceptional economic performance of some areas like Beijing, Shanghai, and parts of Guangdong where minimum wages are notably higher than in the rest of China. In addition, the minimum wage data may contain some occasional errors that might partly explain the wide gaps between the smallest minimum wage and the first decile of the minimum wage distribution in the last three years of the investigation period.

**Table 5.2: Distribution of Minimum Wage Rates, 2005-2014**

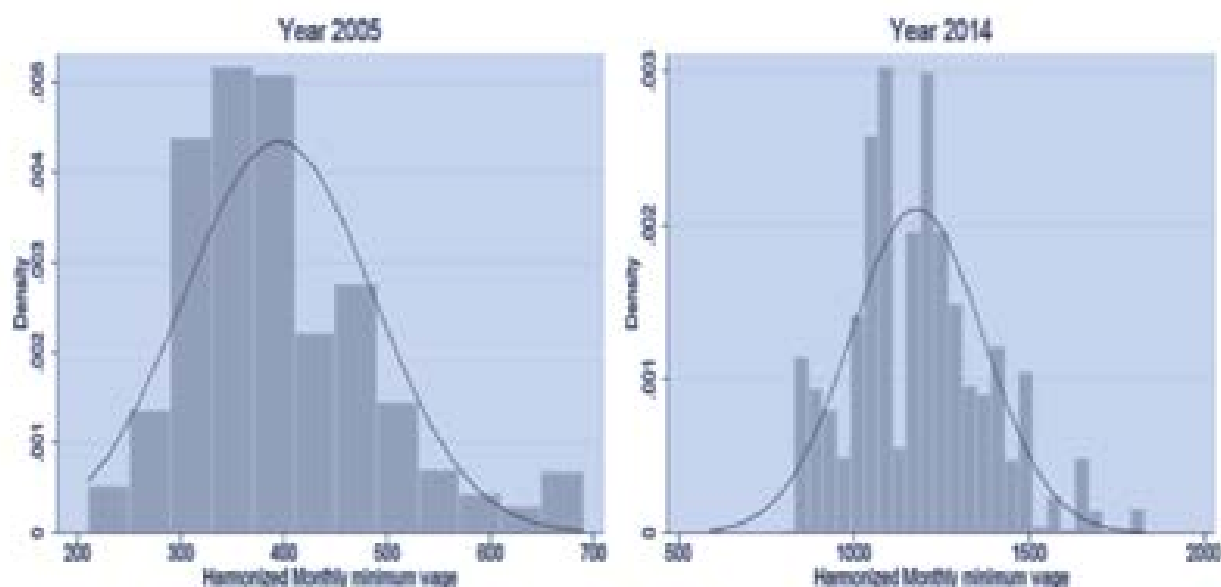
| <i>Year</i> | <i>Mini-<br/>mum</i> | <i>1st<br/>decile</i> | <i>2nd<br/>decile</i> | <i>3rd<br/>decile</i> | <i>4th<br/>decile</i> | <i>Medi-<br/>an</i> | <i>6th<br/>decile</i> | <i>7th<br/>decile</i> | <i>8th<br/>decile</i> | <i>9th<br/>decile</i> | <i>Maxi-<br/>mum</i> |
|-------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------|
| 2005        | 210                  | 300                   | 320                   | 340                   | 350                   | 380                 | 400                   | 420                   | 470                   | 520                   | 690                  |
| 2006        | 210                  | 360                   | 400                   | 420                   | 435                   | 450                 | 475                   | 495                   | 520                   | 600                   | 780                  |
| 2007        | 210                  | 420                   | 450                   | 460                   | 480                   | 500                 |                       | 550                   | 580                   | 650                   | 850                  |
| 2008        | 390                  | 450                   | 500                   | 520                   | 540                   | 560                 | 580                   | 600                   | 650                   | 720                   | 960                  |
| 2009        | 390                  | 450                   | 500                   | 520                   | 540                   | 560                 | 580                   | 600                   | 650                   | 730                   | 960                  |
| 2010        | 500                  | 600                   | 630                   | 650                   | 680                   | 700                 | 730                   | 760                   | 820                   | 900                   | 1120                 |
| 2011        | 500                  | 660                   | 710                   | 750                   | 780                   | 820                 | 850                   | 900                   | 950                   | 1080                  | 1320                 |
| 2012        | 590                  | 750                   | 830                   | 855                   | 900                   | 950                 | 980                   | 1050                  | 1100                  | 1200                  | 1500                 |
| 2013        | 590                  | 900                   | 955                   | 1020                  | 1050                  | 1070                | 1100                  | 1160                  | 1220                  | 1310                  | 1620                 |
| 2014        | 590                  | 945                   | 1035                  | 1070                  | 1100                  | 1170                | 1210                  | 1250                  | 1320                  | 1450                  | 1820                 |

*Source:* Authors' calculations.

**Figure 5.2: Histograms and Kernel Density Plots of Minimum Wage Rates, 2005 and 2014**

Monthly minimum wage rates  
by county, 2005

Monthly minimum wage rates by  
county, 2014



Source: Authors' calculations.

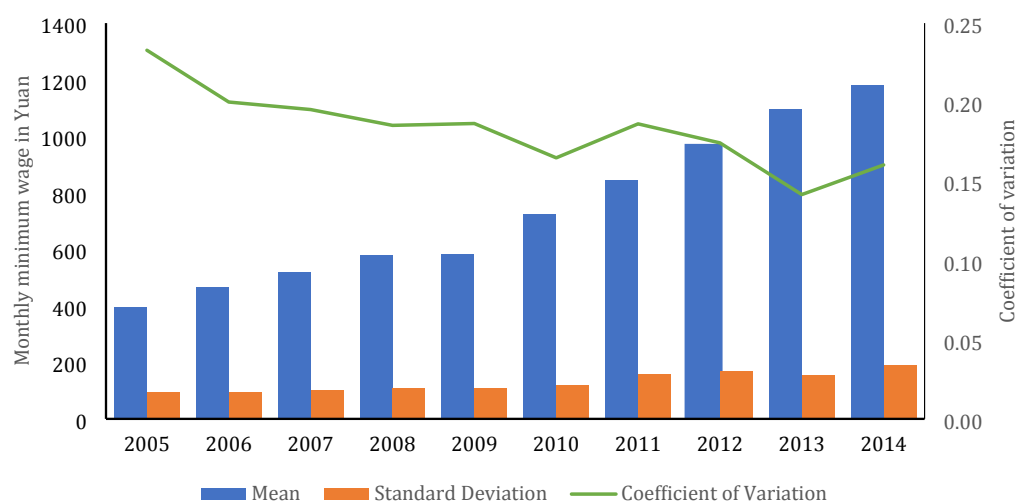
Figure 5.2 provides more detail on the distribution of minimum wages by plotting histograms and kernel density plots for monthly minimum wages. For the sake of conciseness, the figure only displays histograms and kernel density plots for 2005 and 2014, the first and last year of the investigation period.<sup>43</sup> Figure 5.2 confirms that there was a wide dispersion in minimum wage rates in both 2005 and 2014. Also, in both years, there were quite a few counties with minimum wage rates just below the peak of the distribution and a small but notable number of counties with minimum wage rates that were much higher than those in the rest of China. As already mentioned, this latter group of counties mostly consisted of the various districts of Beijing and Shanghai as well as the counties in the most developed parts of Guangdong. The minimum wage distributions depicted in Figure 5.2 appear largely symmetrical but are slightly skewed to the right. This is consistent with the observation mentioned above that in both 2005 and 2014 the average minimum wage was slightly higher than the median minimum wage.

<sup>43</sup> For other years, the histograms and kernel density plots for monthly minimum wages look qualitatively relatively similar. They are available from the authors on request.

Yet another perspective on the distribution and spatial dispersion of minimum wage rates is county level minimum wage rates across China. Minimum wage records confirm that there was a wide dispersion of minimum wage rates in both 2005 and 2014. As already mentioned, in 2005 minimum wage rates measured on a monthly basis ranged from Yuan 210 to Yuan 690, while in 2014 they ranged from Yuan 590 to Yuan 1,820. Compared to the national level, there was much less variation in minimum wage rates within China's broad regions and even less so within individual provinces. More specifically, in both 2005 and 2014, minimum wage rates were generally high throughout China's eastern region and in the relatively developed coastal region, while they tended to be low in the less developed western and southwestern regions. This broad pattern of spatial dispersion remained qualitatively very similar between 2005 and 2014.

Figure 5.3 plots the time series of the mean and standard deviation of minimum wage rates as well as of the coefficient of variation defined as the ratio of the standard deviation to the mean as a measure of relative variability. This makes it possible to explore how the dispersion of minimum wage rates between different counties developed during the investigation period based on a comparable measure of minimum wage dispersion for the different years. Both the average minimum wage and its standard deviation increased between 2005 and 2014. As already mentioned, the average minimum wage increased from Yuan 395 per month in 2005 to Yuan 1,180 in 2014. In parallel, the standard deviation of the minimum wage increased from Yuan 92 in 2005 to Yuan 189 in 2014.

**Figure 5.3: Dispersion of Minimum Wage Rates, 2005-2014**



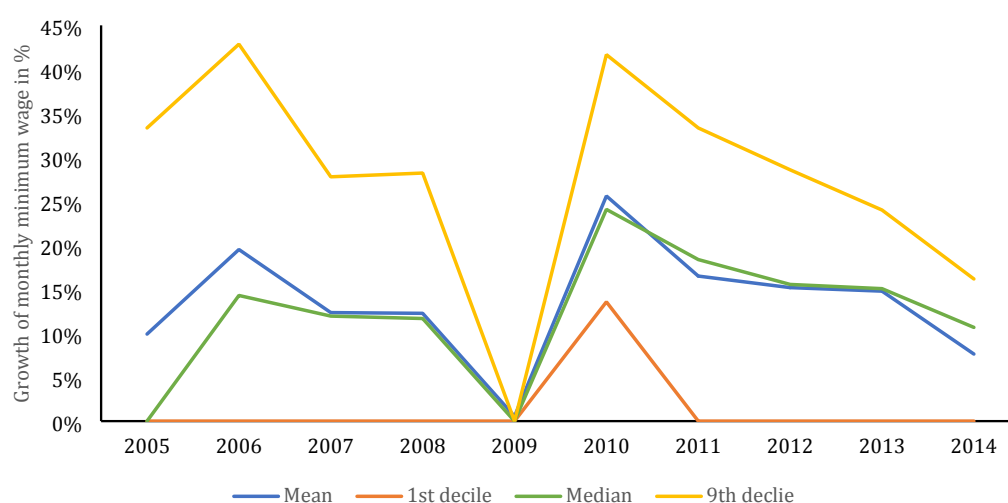
Source: Authors' calculations.

As the average minimum wage almost tripled between 2005 and 2014 while the standard deviation only doubled, the coefficient of variation

decreased over the investigation period. In 2005, it stood at 0.23. In the ensuing years, it experienced an almost monotonic drop, reaching 0.16 in 2014. The only year during which the coefficient of variation increased was 2011 when it rose from 0.16 to 0.19. The general decline in the dispersion of the minimum wage between 2005 to 2014 is likely to have been a reflection of the central government's rather explicit policy guidance, particularly during the period of the Twelfth Five-Year Plan (2011 to 2015), that all minimum wages for full-time employees should fall within a range of 40 to 60 percent of the monthly local average wage. This led to large rises in the minimum wages in localities where they had initially been particularly low (see Chapter 4). In addition, it is likely to reflect the economic convergence between the more developed and less developed regions of China that took place during the investigation period.

Figure 5.4 focuses on the yearly adjustments of the minimum wage rates. It plots the yearly growth rates of the average minimum wage from 2005 to 2014 as well as the first decile, median, and ninth decile of minimum wage growth rates. Because there are always some counties every year that do not increase their minimum wages, it is more informative to plot the first and ninth decile of the minimum wage growth rates rather than the minimum and maximum. From the perspective of the entire investigation period (and recalling that all numbers are nominal), Figure 5.4 shows that year-on-year growth in minimum wage rates has generally been very substantial. In 2005, minimum wages on average grew by 9.9 percent. In 2006, the average growth rate reached 19.9 percent, before falling during the ensuing global financial crisis and practically coming to a standstill in 2009. However, they rose substantially the following year when the average minimum wage increased by 25.6 percent.

**Figure 5.4: Growth of Minimum Wage Rates, 2005-2014**



Source: Authors' calculations.



While 2010 was the year with the most pronounced minimum wage increases during the investigation period, the average minimum wage continued to increase by more than 10 percent in each of the following three years. This pattern is consistent with the policy guidance given by the central government during the Twelfth Five-Year Plan that stipulated that minimum wages should be increased by 13 percent annually. However, while minimum wage increases continued to be pronounced during the last years of the Twelfth Five-Year Plan period – which were more or less the last years of the investigation period as well – they gradually grew smaller, probably due the advent of China’s “new normal,” which generally slowed rates of economic growth and development in the country.

With the exception of 2005, 2009, and 2014, average minimum wage increases stayed well above 10 percent during the entire investigation period. Some individual counties experienced periods of even more pronounced minimum wage hikes – particularly in 2006 and 2010. In 2006, 10 percent of all of China’s counties experienced a minimum wage hike of 24.9 percent or more, while in 2010, minimum wages increased by 41.7 percent or more in 10 percent of all counties. These were the two highest values for the ninth decile of minimum wage growth rates that were recorded throughout the entire investigation period. While some counties stood out due to their very high minimum wage growth rates, minimum wage growth was more subdued in others. Even in 2006 and 2010, more than 10 percent of counties did not raise their minimum wages at all. In fact, 2010 was the only year during the investigation period when a positive value was recorded for the first decile of the minimum wage growth rate (13.6 percent). This picture is consistent with what was found in Chapter 4, which was that Guangdong has experienced very strong growth in minimum wage rates since 2004 but has usually changed its minimum wage levels only every two years.

### **Distribution of Minimum Wage Rates across and within Provinces**

As discussed above, while China’s provinces play the leading role in setting minimum wage rates, they are at least theoretically free to set various different minimum wages for each of their different prefectures or even for each of the different counties within each prefecture. This means that it is theoretically possible for China to have around 2,800 distinct minimum wage rates in any given year. Therefore, it is worthwhile to describe the distribution of minimum wage rates across and within provinces in some detail. As a starting point, Table 5.3 lists the number of distinct minimum wage rates for each year from 2005 to 2014 at the national, provincial, and prefectural levels. At the national level, the table indicates the absolute number of distinct minimum wage rates, while at the provincial and prefectural levels, it shows the average number of distinct minimum wages at these two levels. In addition, the table also lists the minimum and maximum number of distinct minimum wage rates found at the provincial level.

**Table 5.3: Number of Different Minimum Wage Rates at the National, Province, and Prefecture Levels, 2005-2014**

| <i>Year</i> | <i>National level<br/>(absolute<br/>number)</i> | <i>Provincial level<br/>(average)</i> | <i>Provincial level<br/>(minimum)</i> | <i>Provincial level<br/>(maximum)</i> | <i>Prefectural level<br/>(average)</i> |
|-------------|---|---------------------------------------|---------------------------------------|---------------------------------------|--|
| 2005        | 51  | 4.96                                  | 1                                     | 10                                    | 2.12                                   |
| 2006        | 41  | 4.57                                  | 1                                     | 9                                     | 2.08                                   |
| 2007        | 46  | 4.55                                  | 1                                     | 9                                     | 2.09                                   |
| 2008        | 41  | 4.23                                  | 1                                     | 7                                     | 2.02                                   |
| 2009        | 41  | 4.23                                  | 1                                     | 7                                     | 2.02                                   |
| 2010        | 45  | 4.18                                  | 1                                     | 7                                     | 2.11                                   |
| 2011        | 54  | 4.03                                  | 1                                     | 7                                     | 2.08                                   |
| 2012        | 50  | 3.80                                  | 1                                     | 6                                     | 2.07                                   |
| 2013        | 60  | 3.84                                  | 1                                     | 8                                     | 2.07                                   |
| 2014        | 57  | 3.80                                  | 1                                     | 8                                     | 2.03                                   |

*Source:* Authors' calculations.

According to Table 5.3, in 2005 there were a total of 51 distinct minimum wage rates in China, while in 2014 there were 57 distinct rates. These numbers are much smaller than the theoretical number of 2,800. The relatively small number of different minimum wage rates is at least partly due to the fact that these rates tend to be round numbers. Given that there are 31 provinces in our data, it also implies that, for any given year, there were no more than twice as many distinct minimum wage rates as provinces on average. While this holds true for China as a whole, at the provincial level, the average number of distinct minimum wage rates was actually slightly higher at around four to five per year.

While the number of distinct minimum wage rates at the national level slightly increased during the investigation period, at the provincial level the number generally declined – falling from an average of 5.0 minimum wage rates per province in 2005 to about 3.8 in 2014. In parallel, the average number of distinct minimum wage rates per prefecture also declined but much more modestly and from a much lower base. In 2005, there were an average of 2.1 distinct minimum wage rates per prefecture, while by 2014, this number had declined to 2.0. The falls in the average number of distinct minimum wage rates at the provincial and prefectural levels are consistent with the advice given by the Ministry of Human Resources and Social Security (MHRSS) during the Twelfth Five-Year Plan period to provincial governments to decrease the number of separate minimum wage levels.

Throughout the investigation period, in some provinces there was little difference between the numbers of their minimum wage rates over time, whereas others had a higher degree of heterogeneity. The provinces with only one minimum wage rate were generally province-level municipalities like Beijing and Shanghai, while the provinces with a large number of distinct

minimum wage rates tended to be those that are geographically spread out and economically diverse. For instance, in 2005 both Anhui and Guangdong Provinces had 10 different minimum wage rates. In 2014, Guangdong Province again had the highest number of distinct minimum wage rates (eight), while in that year Anhui Province had reduced the number of its distinct minimum wages to four. Table 5.3 shows that there was a reduction in the maximum number of distinct minimum wage rates at the provincial level during the first three-quarters of the investigation period followed by a slight reversal of this trend in the later years.

The results summarized in Table 5.3 confirmed our main finding about the spatial dispersion of minimum wages as depicted in Figure 5.3, namely that there was a noteworthy pattern of wide dispersion of minimum wage rates across broad regions but relatively little dispersion within such regions. At least in principle, there could be two different reasons for this pattern. First, it could be due to strong competitive forces that lead minimum wage rates in similar or neighboring localities to converge. Second, it could be that the central government's minimum wage strategy, which takes into account different conditions in different parts of the country but also aims to keep the system of minimum wage rates tractable, transparent, and systematic, is more effective in practice than is often believed. Whatever the relative merit of these two different explanations, the limited variation of minimum wage rates within provinces suggests that provincial governments do play the important role in setting minimum wage rates that is set out for them in the Minimum Wage Regulations. This finding is also consistent with the on-the-ground evidence documented in the case studies discussed in Chapter 4.

**Table 5.4: Decomposition of the Variation in Minimum Wage Rates, 2005-2014**

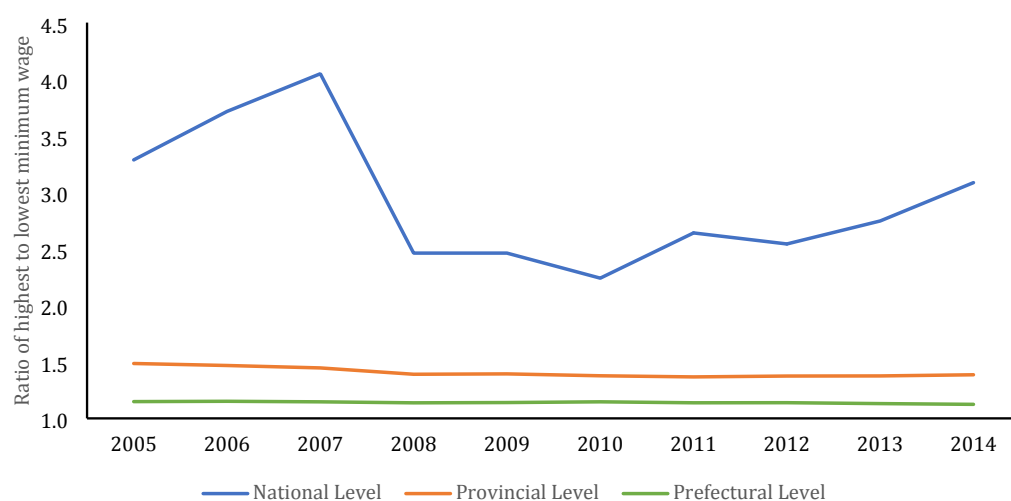
| <i>Year</i> | <i>Between provinces</i> | <i>Between prefectures<br/>within provinces</i> | <i>Between counties within<br/>prefectures</i> |
|-------------|--------------------------|---|--|
| 2005        | 72.2%                    | 19.1%   | 8.6%   |
| 2006        | 63.6%                    | 25.1%   | 11.3%  |
| 2007        | 63.6%                    | 24.9%   | 11.4%  |
| 2008        | 61.9%                    | 25.9%   | 12.1%  |
| 2009        | 61.8%                    | 25.7%   | 12.6%  |
| 2010        | 54.1%                    | 30.4%   | 15.6%  |
| 2011        | 66.1%                    | 22.3%   | 11.5%  |
| 2012        | 65.0%                    | 22.5%   | 12.5%  |
| 2013        | 53.0%                    | 29.5%   | 17.5%  |
| 2014        | 66.0%                    | 21.1%   | 13.0%  |

*Source:* Authors' calculations.

Table 5.4 provides more details on the distribution of minimum wage rates across and within provinces. For each year from 2005 to 2014, it presents a decomposition of the variations of minimum wage rates between provinces, between prefectures within provinces, and between counties within prefectures. This is similar to an exercise implemented by Xing and Xu (2016) but for a more recent time period and not pooled across several years. As is evident from Table 5.4 and in accordance with the findings of Xing and Xu (2016), most of the variation in minimum wages can be attributed to variations between provinces. In each year of the investigation period, this is the case for at least 50 percent of the variation. In contrast, variation between prefectures within provinces generally only accounted for around 20 to 30 percent of the overall variation, while the variations between counties within prefectures accounted for another 10 to 15 percent. Over the entire investigation period, the percentages of the overall variation of minimum wage rates attributable to between-province and within-province variations stayed remarkably constant. Therefore, Table 5.4 offers yet more evidence that provincial governments play a central role in setting minimum wage rates.

A final piece of evidence on the central role played by provinces in setting minimum wage rates is presented in Figure 5.5, which plots the ratio of the highest to the lowest minimum wage rates at the national, provincial, and prefectural level for each year between 2005 and 2014. The ratio of the highest to the lowest minimum wage rates on the national level was already discussed above in the context of Figure 5.1. Figure 5.5 confirms that this ratio was quite significant during the entire investigation period, ranging from 2.2 in 2010 to 4.1 in 2007. In contrast, at the provincial and prefectural level, not only were there relatively few distinct minimum wage rates (as depicted in Table 5.3) but, even when there were different minimum wage rates, the range between the highest and lowest minimum wage tended to be rather modest. At the provincial level, the average ratio of the highest to the lowest minimum wage ranged from 1.4 to 1.5 throughout the investigation period. At the prefectural level, it ranged from 1.1 to 1.2.

**Figure 5.5: Ratio of the Highest to Lowest Minimum Wage Rates at the National, Province, and Prefecture Levels, 2005-2014**

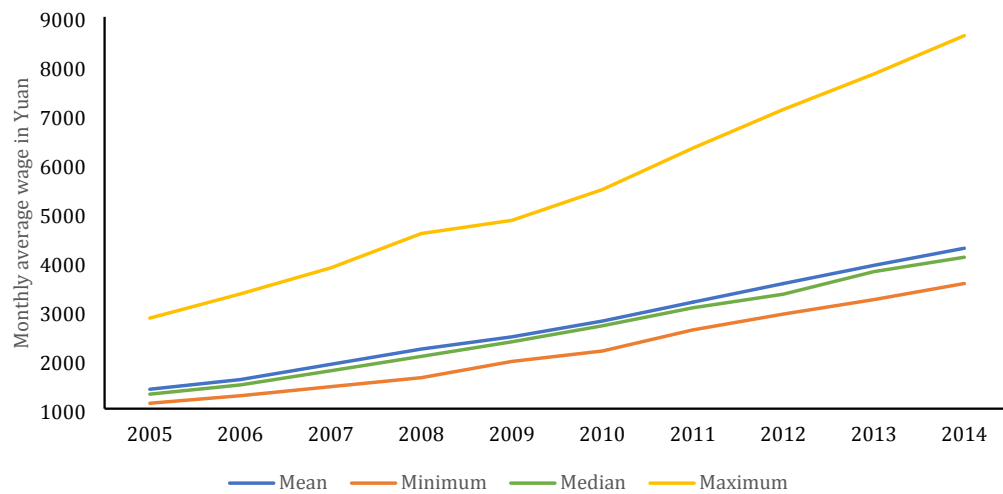


Source: Authors' calculations.

At both the provincial and the prefectural levels, the ratio of the highest to the lowest minimum wage tended to decline over the investigation period. This is consistent with the MHRSS' policy guidance that was in place during the observation period, particularly the guidance during the Twelfth Five-Year Plan period that all minimum wages for full-time employees should fall within a range of 40 to 60 percent of the monthly local average wage. In contrast, at the national level, the ratio of the highest to the lowest minimum wage declined quite drastically between 2007 and 2008 (from 4.1 to 2.5) but stayed largely constant or even crept up slightly afterwards. In 2014, it reached 3.1, its highest point since 2007 but still stayed considerably below the levels recorded during the first three years of the investigation period.

### Minimum Wage Rates and Monthly Wages

As mentioned above, the Twelfth Five-Year Plan for the period from 2011 to 2015 stipulated that China's policy goal was to increase the minimum wage by 13 percent annually. In addition, the plan set out the objective of raising the ratio of the minimum wage to the average wage to above 40 percent (which is roughly where it stood in 1995). To evaluate if this objective was met and more generally to determine the minimum wages' position relative to average wages, we plotted a time series of the county-level mean, minimum, median, and maximum monthly average wage rates from 2005 to 2014 (see Figure 5.6). In addition, we plotted a time series of county-level mean, minimum, median, and maximum ratios of minimum wages to average wages for the same investigation period (see Figure 5.7).

**Figure 5.6: Time Series of Average Wages, 2005-2014**

Source: Authors' calculations.

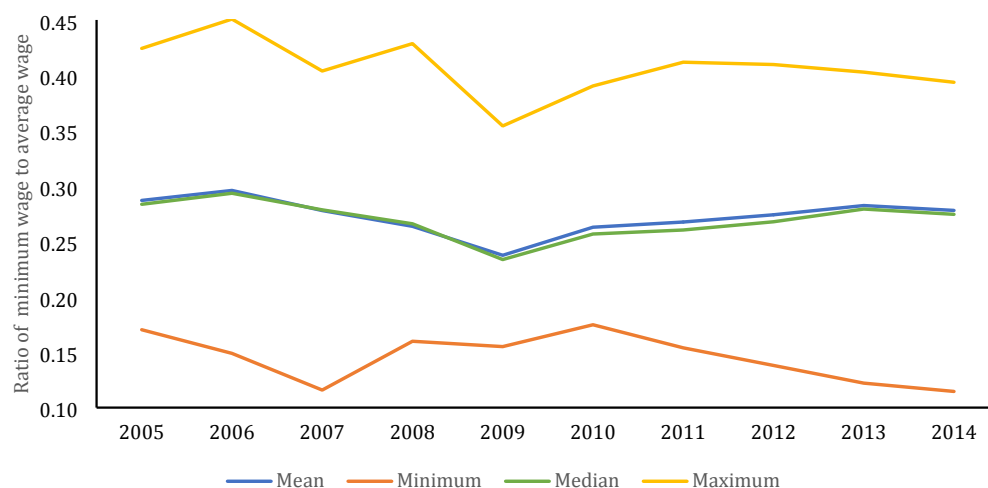
Figure 5.6 shows that, at least in nominal terms, monthly average wages grew very quickly over the investigation period. In 2005, in the median county, the monthly average wage stood at Yuan 1,297, while by 2014, it had more than tripled to Yuan 4,093. The rapid increase in monthly average wages was widespread across China. In 2005, the lowest monthly average wage recorded in any single county was Yuan 1,111. By 2014, no county had a monthly average wage lower than Yuan 3,356 (in nominal terms this was higher than the highest monthly average wage in 2005). While the increase in monthly average wages was widespread, over the entire investigation period some counties stood out as having much higher average wage levels than most of the rest of China. In 2005, the highest monthly average wage was Yuan 2,849, slightly more than twice as high as the lowest monthly average wage. In 2014, the highest monthly average wage was Yuan 8,617, again slightly more than twice as high as the lowest monthly average wage. In other words, when comparing the counties with the highest monthly average wages with those with the lowest monthly average wages, there is little sign of a convergence in wage levels over the investigation period.<sup>44</sup>

Even more informative and relevant to the question at hand than the description of monthly average wage rates across space and time in Figure 5.6 are the time series of the ratios of minimum wages to average wages as depicted in Figure 5.7. The mean and median of these ratios stayed relatively constant over the entire investigation period. In 2005, the ratio of the minimum wage to the average wage was 0.28 in the median county, while 10 years later, it

<sup>44</sup> It bears repeating that the monthly average wages depicted in Figure 5.6 are all given in nominal terms. Therefore, they do not account for any differences in price levels either across time or across space so all comparisons should be taken with a grain of salt.

was almost identical at 0.27.

**Figure 5.7: Time Series of the Ratio of Minimum Wages to Average Wages, 2005-2014**



Source: Authors' calculations.

A closer look reveals that the ratios of minimum wages to average wages generally fell during the first half of the investigation period before recovering later. The pattern over the first half of the investigation period is consistent with China's generally very fast wage growth even during the depths of the global financial crisis and the limited increases in the minimum wage during this period. Even in 2009, monthly average wages in the median county grew by more than 14 percent in nominal terms while in the same year – as mentioned above – minimum wages were left unchanged throughout almost all of China. During the second half of the investigation period, ratios of minimum wages to average wages started to recover. This was because of the widespread sense that minimum wages had become so low as to be almost irrelevant as well as the explicit guidance issued by the MHRSS during the Twelfth Five-Year Plan period. Nevertheless, probably due to ongoing strong wage growth and resistance from employers and their representatives to increases in minimum wages, ratios of minimum wages to average wages generally failed to reach the goal of 0.4 set in the Twelfth Five-Year Plan. In fact, in 2014, the maximum recorded ratio of the minimum wage to the average wage was 0.39.<sup>45</sup>

<sup>45</sup> Recently, wage growth has slowed down, but the central government's guidance with regard to minimum wage increases has also become more cautious. In a few years' time, it will be interesting to observe the net effect of these two countervailing forces on the ratios of minimum wages to average wages.

## 4. Determinants of Minimum Wage Rates

### Summary Statistics and Random Effects Model

In the first step of the empirical analysis of the determinants of minimum wage rates, we used an empirical model with a random effects specification with the logarithm of the minimum wage rate as the dependent variable. This dependent variable is explained by county-specific fixed effects, a random intercept, and the seven explanatory variables identified above and listed in Table 5.1. Like the minimum wage, the data on these variables vary by county (or in some cases by province) and by year. The price level, average annual salary, and per capita GDP are included in logarithmic form, other explanatory variables are not transformed. fixed effects and province dummy variables. When estimating the empirical model, we calculated county cluster robust standard errors (see Annex 5A for the methodological details).

Summary statistics for county-level minimum wage rates and the proxies for the factors to be considered in setting minimum wages according to the Minimum Wage Regulations are tabulated in Table 5.5. As is evident from the table, the panel was not perfectly balanced. However, information on all variables over the investigation period was available for at least two-thirds of counties. Recall that there were more than 2,800 county-level administrative divisions in China throughout the investigation period. Having 28,325 observations for minimum wages over a 10-year period means that there are very few missing values for this variable. The random-effects regressions described in this section made maximum use of the available data and relied on unbalanced panels. In contrast, for the spatial Durbin models that we used later (see below), it was necessary to have balanced panel data so we restricted the data accordingly. For these models, the data should ideally comprise the entire population of the covered geographical area. However, this is rarely feasible in practical empirical work. Therefore, as is common in the literature, our estimation below relies on variables that were widely available, and we aimed for an approximation of the ideal situation without completely attaining it.

**Table 5.5: Summary Statistics for Key Variables**

| <i>Variable</i>                               | <i>Level</i> | <i>Obs.</i> | <i>Mean</i> | <i>Std. dev</i> | <i>Minimum</i> | <i>Maximum</i> |
|---|--------------|-------------|-------------|-----------------|----------------|----------------|
| Minimum wage rate                             | County       | 28,325      | 734.2       | 292.3           | 210.0          | 1,820          |
| Price level                                   | Province     | 28,550      | 1,923       | 254.7           | 1,365          | 2,945          |
| Participation ratio in unemployment Insurance | Province     | 28,550      | 0.148       | 0.326           | 0.006          | 4.592          |
| Participation ratio in maternity insurance    | Province     | 28,364      | 0.128       | 0.333           | 0.008          | 5.426          |
| Participation ratio in injury insurance       | Province     | 28,550      | 0.170       | 0.462           | 0.002          | 7.933          |



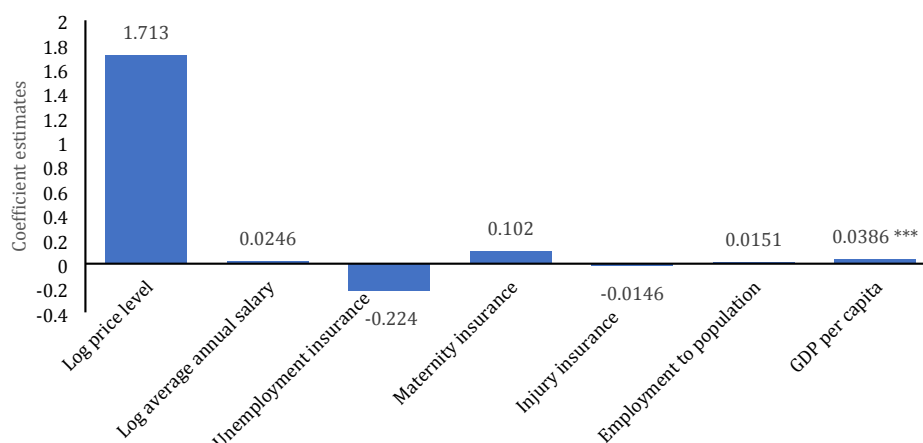
| <i>Variable</i>                | <i>Level</i> | <i>Obs.</i> | <i>Mean</i> | <i>Std. dev</i> | <i>Minimum</i> | <i>Maximum</i> |
|--------------------------------|--------------|-------------|-------------|-----------------|----------------|----------------|
| Average annual salary          | Province     | 28,074      | 32,553      | 12,634          | 13,330         | 103,400        |
| Employment to population ratio | County       | 20,329      | 0.109       | 0.172           | 0.001          | 4.708          |
| Per capita GDP                 | County       | 19,488      | 23,102      | 38,108          | 294.0          | 1,411,806      |

Source: Authors' calculations.

According to Table 5.5 and in line with what was discussed above, the mean monthly minimum wage rate over the investigation period was Yuan 734. The minimum was Yuan 210, and the maximum was Yuan 1,820. The range was wide not only for the minimum wage rate but also for many of the other variables. For instance, the mean annual per capita GDP was Yuan 21,100, and its standard deviation, minimum, and maximum were Yuan 38,108, Yuan 294, and Yuan 1,411,806 respectively. This wide range reflects both China's rapid economic development over the investigation period and its pronounced and persistent geographic disparities (and possibly also occasional data errors in the form of outliers).

Figure 5.8 presents the results of our estimation of the empirical random effects model. A positive coefficient estimate in the figure indicates that a specific explanatory variable is associated with higher minimum wage levels, all things being equal, and \*\*\*, \*\*, and \* indicate statistical significance at the 1, 5, and 10 percent levels. Most of the results from the regression presented in Figure 5.8 are in line with the predictions of economic theory and with the guidance regarding which factors are supposed to consider when adjusting minimum wages given in the Minimum Wage Regulations. The price level, average annual salary, employment to population ratio, per capita GDP, and the participation ratio in maternity insurance were all positively correlated with the minimum wage rate, though the coefficient estimate of the employment-to-population ratio was not statistically significant. The coefficient estimates for the participation ratios in unemployment insurance and injury insurance stand out in terms of their negative signs, but only the former was statistically significant.

**Figure 5.8: Random Effects Estimates of Log Minimum Wage Rates**



*Source:* Authors' calculations based on Schmillen et al (2019).

*Note:* Control variables for the inclusion of social insurance contributions in the minimum wage calculation, province fixed effects, and time fixed effects were also included in the regression but are not depicted here. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent level based on county cluster robust standard errors.

As previously mentioned, the empirical specification includes time fixed effects, the estimates of which are not depicted in Figure 5.8 but are available from the authors on request. They revealed a positive trend in minimum wage rates, all other things being equal. This is an indication that some factor that is common throughout China influenced the incremental positive adjustments in minimum wage rates during the investigation period. This factor might either be a central decision-making process or a country-wide shock (such as the global financial crisis in 2008 and 2009) or of a combination of both.

The regression presented in Figure 5.8 shows a fairly high coefficient of determination of the within-county variation ("within R-squared") of 0.95, suggesting that 95 percent of the variance in minimum wages is attributable to the explanatory variables and the various dummy variables and fixed effects. While the coefficient of determination is fairly high, it nevertheless indicates that the random effects model does not fully explain the minimum wage adjustment process. Therefore, it is worth thinking about ways to increase its explanatory power. As mentioned above, Dreger et al (2016) and previously used spatial econometrics techniques to argue that minimum wage levels in China depend not only on economic variables but also on competition between localities. Both studies referred to competition at the provincial level, presumably because that was the level of data to which they had access. In our analysis, we used more detailed macro data to explain the variance in minimum wage levels through county-level spatial interaction effects.

### **Spatial Durbin Model**

A spatial Durbin model can be used to capture not only the influence of economic variables on minimum wage rates but also spatial interaction effects. In addition to the explanatory variables, dummy variables, fixed effects and random intercepts used in a random effects regression, this model also includes so-called spatial lags of the dependent and possibly the independent variables. Spatial lags take the form of a weighted average of the values of dependent (and independent) variables in other counties, while the weights stem from a quadratic and symmetric weights matrix with a dimension that equals the number of observed counties. This matrix represents the spatial dependence structure of the data, and this structure is assumed to be exogenous. In our analysis, a matrix element referring to a county pair equals one if these two counties share a common border. The matrix element equals zero if these two counties do not share a common border (see Annex 5A for the methodological details).<sup>46</sup>

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<sup>46</sup> The weights matrix is standardized in such a way that rows add up to unity, and its main diagonal contains zeros since we assumed that a county cannot have an influence on itself.

The spatial Durbin model is considered to be the formal specification for an equilibrium outcome of a strategic or social interaction process, in which the outcome for one cross-sectional unit (that is, a county) is jointly determined with the outcomes of other spatially related localities. For example, the empirical literature on strategic interaction among local governments presents the spatial Durbin model as theoretically consistent with a situation where there is an interaction between taxation and/or expenditures on public services in a specific jurisdiction and taxation and/or expenditures on public services in nearby jurisdictions (see, for example, Edmark and Ågren, 2008, and Chirinko and Wilson, 2017). The same reasoning can be applied to the supposition that subnational governments may compete with each other in order to attract workers or investors.

In practical terms, the estimation of the spatial Durbin model includes the estimation of a term that is the coefficient of the spatial lag term of the dependent variable. Thus, captures the influence of a linear combination of minimum wage rates in all neighboring counties on the minimum wage rates in any particular county.

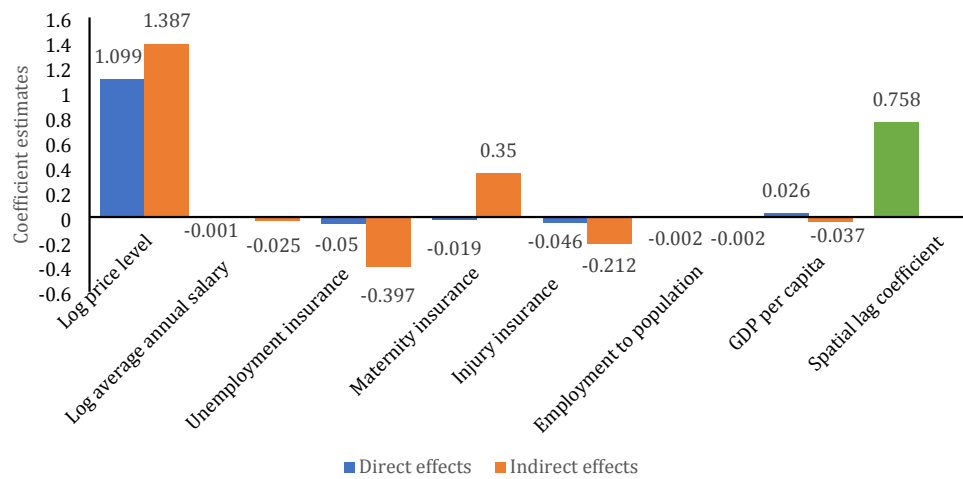
In the spatial lag model, the processes underlying the spatial interaction effects between different subnational governments are explicitly modelled. For this purpose, we assumed that the same variables that influence the decisions of a subnational government in a specific locality also influence the decisions of the subnational governments in other localities with which spatial interaction effects exist. Therefore, to explicitly model the process underlying the spatial interaction effects between different subnational governments, we included the weighted average of the effects of explanatory variables in all other counties on minimum wage rates in any particular county with weights based on whether two counties share a common border. In other words, in addition to the impact of the spatial lag term of the dependent variable (as captured by), we assumed a county's minimum wage rate to depend on the value of explanatory variables not only within that county but also on the values of the same explanatory variables averaged over all of its neighboring counties.

Because the spatial Durbin model is nonlinear in its parameters, it is estimated with a maximum log likelihood procedure. Furthermore, the nonlinear structure of the model does not allow for a direct interpretation to be made of the coefficient estimates. However, it is possible to use the regression results to compute the average direct and indirect (marginal) effects of the explanatory variables on minimum wage rates. The direct effects are the effects on the minimum wages in any particular county resulting from changes in an explanatory variable within that county. The indirect effects are the effects on the minimum wages in any particular county resulting from changes in the average explanatory variable for all of the county's neighboring counties.

Our estimated indirect effects corroborated the importance of accounting for spatial dependence when explaining minimum wage levels. According

to Figure 5.9, the average price level and the average participation ratio in maternity insurance in neighboring localities have positive effects on the minimum wage rate in any particular locality, whereas the average participation ratio in unemployment insurance and the average per capita GDP in neighboring localities have negative effects. Put another way, if the price level or participation ratio in maternity insurance in a county increases or the participation ratio in unemployment insurance or per capita GDP in the county decrease, then this will induce an increase in the minimum wage rate of its neighboring counties, all other things being equal. The estimated indirect effects of the other explanatory variables were statistically insignificant.

**Figure 5.9: Effects of Spatial Lag Estimates of Log Minimum Wage Rates**



*Source:* Authors' calculations based on Schmillen et al (2019).

*Note:* Control variables for the inclusion of social insurance contributions in the minimum wage calculation, province fixed effects, and time fixed effects were also included in the regression but not depicted here. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent level based on robust standard errors.

Figure 5.9 summarizes the results of our estimation of the spatial Durbin model. In addition to the direct and indirect (marginal) effects on minimum wage rates, the figure also presents the coefficient of the spatial lag term of the dependent variable,  $\lambda$ . This coefficient was significantly positive, which indicates that the minimum wage rates of neighboring counties are indeed strongly correlated. This validates the spatial lag model. With regard to the direct effects of the different explanatory variables on minimum wage rates, only the effects of the price level and per capita GDP were significantly positive. All other direct effects were statistically insignificant, apparently because provincial governments do not find the factors mentioned in the Minimum Wage Regulations relevant for determining their minimum wage rates. More generally, the magnitudes of the coefficients of the explanatory variables tended to be smaller in the spatial Durbin model of Figure 5.9 than in the random effects model presented in Figure 5.8. This implies that spatial

dependence explains a significant part of the variance of minimum wage rates and that, in a model that does not account for it, part of this explanatory power is picked up by economic explanatory variables. In other words, a model that does not account for spatial dependence could be mis-specified.

All in all, the results of the spatial Durbin models summarized in Figure 5.9 confirm that county-level minimum wage rates are influenced by at least some if not all of the proxies for factors that should be considered by provincial governments in setting minimum wage rates according to the Minimum Wage Regulations. Spatial dependence also plays an important role in explaining the variation of minimum wage rates.

## 5. Conclusions

We used a highly disaggregated macro panel of county-level minimum wages and other highly disaggregated macro variables from 2005 to 2014 to investigate the distribution of minimum wages in China and the processes used to adjust them. As detailed in Chapter 3, China's Minimum Wage Regulations recognize the right of provincial governments to set minimum standards according to local conditions and give them discretion to set different minimum wages in different locations within each province. Thus, in principle, the provincial governments are free to set a different minimum wage for each of China's 2,862 county-level administrative divisions. We exploited this cross-sectional variation to describe the distribution of minimum wage rates and to explore the economic and non-economic factors underlying minimum wage setting in China using random effects models and spatial econometric techniques.

In this chapter, we documented that the average monthly minimum wage rose monotonically between 2005 and 2014 and at a very fast pace, with a brief pause only at the depth of the global financial crisis in 2009. In each cross-section, the range between the lowest and the highest minimum wage was quite substantial and remained so during the entire investigation period. A decomposition of the overall variation of minimum wage rates into variations between provinces, between prefectures within provinces, and between counties within prefectures showed that most of the overall variation could be attributed to variations between provinces. In each year of the investigation period, this was the case for at least 50 percent of the overall variation. In contrast, variations between prefectures within provinces generally only accounted for 20 to 30 percent of the overall variation, while variations between counties accounted for another 10 to 15 percent. This finding is consistent with the crucial role played by provinces in setting minimum wages as documented in Chapter 4. Over the entire investigation period, the ratio of minimum wages to average wages stayed relatively constant. In 2005, the ratio in the median county was 0.29, which was precisely the same 10 years later.

With regard to the determinants of minimum wages, we found that the

local price level and per capita GDP are the most important economic drivers of minimum wage rates. None of the other proxies for the variables that the Minimum Wage Regulations require provincial-level governments to consider when adjusting the minimum wage rates had any statistically significant and robust effects on minimum wage rates, including the average annual salary, the employment-to-population ratio or the participation ratios in different branches of social insurance. With the help of spatial econometrics techniques, we found that spatial dependence between neighboring counties plays a significant role in explaining the variations in minimum wage rates across China.

To sum up, our findings as presented in this chapter show that, when adjusting local minimum wages in different counties, provincial governments consider not only some key indicators of local economic development but also (explicitly or implicitly) the economic development in counties in other provinces that are located nearby.<sup>47</sup> According to our analysis, there might be two reasons for this behavior or a combination of both. First, provinces might be competing with each other to attract workers or investors. Second, they might be attempting to follow the central government's policy guideline that all minimum wages should fall within the same relatively narrow range. According to the analysis in Chapter 4, provincial governments regularly deny that their minimum wage adjustments are driven by what is happening in other comparable provinces, which might make the second explanation more plausible. Alternatively, it might be that, while decision-makers in individual provinces claim that they do not consider developments in other provinces when setting minimum wages, they actually do so, whether consciously or subconsciously.

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<sup>47</sup> Using a similar spatial econometrics approach, Schmillen et al (2019) showed that the same holds for counties that are not necessarily located nearby but are economically similar.

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## Annex 5A

In the first step of our empirical analysis in this chapter, we estimated the following regression equation with a random intercept:

$$(5.1) \quad y_{it} = a + x_{it}\beta + s_{it} + d_t + p_{p|i\in p} + \varepsilon_{it}, \text{ with } \varepsilon_{it} = \mu_i + v_{it},$$

where  $y_{it}$  denotes the logarithm of the minimum wage rate as the dependent variable for each county  $i = 1, \dots, n$  and observation year  $t = 2005, \dots, 2014$ . The term  $a$  captures the constant. The row vector  $x_{it}$  contains one or more of the seven explanatory variables identified above. Like the minimum wage, these variables vary by county  $i$  and year  $t$ . The price level, average annual salary, and per capita GDP are included in logarithmic form, other explanatory variables are not transformed. The column vector  $\beta$  contains the coefficients associated with the explanatory variables. The dummy variable  $s_{it}$  is included in all specification and equals 1 in cases where minimum wage rates are stipulated net of social insurance contributions and 0 otherwise. Time fixed effects, denoted by  $d_t$ , and a province dummy variable, denoted by  $p_{p|i\in p}$ , that equals 1 in case of county  $i$  belonging to province  $p$  and 0 otherwise are also included. The term  $\varepsilon_{it}$  comprises the random intercept  $\mu_i$  and the independently and identically distributed error term  $v_{it}$  with mean zero and variance  $\sigma^2$ .

In matrix notation, a spatial lag model or spatial Durbin model can be written as follows:

$$(5.2) \quad y = a + \rho W_n y + x\beta + W_n x + s + p + d + \varepsilon, \text{ with } \varepsilon = \mu + v$$

where  $\mathbf{W}_n$  is called the weights matrix and represents the spatial structure of our data. The relevant weights  $w_{ij}$  therein equal zero if there are no spatial lags between counties  $i$  and  $j$  and one otherwise.  $\mathbf{W}_n$  is usually standardized in such a way that all rows add up to unity and its main diagonal contains zeros since it is assumed that a county cannot have an influence on itself. The exact structure of the weights matrix is not an outcome of the model but needs to be imposed. Here, we assumed that weights equal one if and only if counties  $i$  and  $j$  are neighboring counties. The term  $\rho$  is the coefficient of the spatial lag term of the dependent variable,  $\mathbf{W}_n \mathbf{y}$ . Thus,  $\rho$  captures the influence of a linear combination of minimum wage rates in counties  $j$ ,  $(\mathbf{W}_n \mathbf{y})_i = \sum_{j=1}^n w_{ij} y_j$  on minimum wage rates in county  $i$ .

The dependent variable vector, appears in equation (5.2) both on the right- and the left-hand side of the estimation equation. In order for the equation to be estimated, it has to be solved for This yields:

$$(5.3) \quad \mathbf{y} = (\mathbf{I}_{nT} - \rho \mathbf{W}_n)^{-1} (\mathbf{a} + \mathbf{x}\beta + \mathbf{W}_n \mathbf{x} \gamma + \varepsilon).$$



# Minimum Wages and Poverty

Sylvie Démurger, Carl Lin, Achim Schmillen, and Dewen Wang

## 1. Introduction and Context

Around 2,500 years ago, Confucius said that poverty and inequality should be the two main concerns for any governor who cared for the welfare of the people (Ames, 1998). Despite the philosopher's assertion, for most of China's history the majority of the country's population has been poor. As recently as 1981, China's poverty headcount ratio was 53 percent, according to a poverty line calculated by Ravallion and Chen (2007) in cooperation with the National Bureau of Statistics (NBS)

Only since the initiation of China's reform period and opening-up policy in 1978 has absolute poverty been sharply reduced as a result of unprecedented economic growth of an average of more than 9 percent per year. According to official NBS estimates, while 250 million people lived in poverty in 1978, this figure had halved by 1985 and had been further reduced to 55.8 million by 2015. Never before had so many people moved out of poverty or near-poverty in such a short time.

At the beginning of the reform period, China's then relatively small urban population was on average much better off than the then much larger population of rural dwellers. This was the result of an urban bias in China's development strategy that included extensive subsidies for people living in urban areas combined with tight internal migration controls. According to Ravallion and Chen (2007), the poverty headcount rate in rural areas in 1981 was a massive 65 percent, whereas it was only 6 percent in urban areas. Although the policy bias in favor of urban dwellers has since weakened, absolute poverty is still a serious concern in China, especially in rural areas but even to some extent also in urban areas. As recently as 2011, it was estimated that 50 million urban residents were living in poverty (Chinese Academy of Social Sciences, 2011).

Since the early 1980s, the Government of China has been committed to promulgating a series of policies to reduce poverty (Chen and Démurger,

2014). Although the government is aiming for the elimination of absolute poverty across all of China by 2020, most of its anti-poverty policies target rural areas where poverty continues to be relatively widespread. These anti-poverty policies include subsidized loans for investments in agricultural production, food-for-work and cash-for-work programs, relief from agricultural-related taxes, and the implementation of social programs like the new rural cooperative medical insurance scheme and the rural minimum income guarantee program (*dibao*). As far as urban poverty is concerned, the government originally introduced the urban *dibao* program to mitigate the negative social impact of economic restructuring and layoffs by state-owned enterprises (SOEs), but it has evolved into the most important anti-poverty policy tool in urban China.

In the urban context, the minimum wage policy has the potential to be another important anti-poverty tool, though possibly a controversial one. As discussed in Chapter 3, China's minimum wage policy has been very contentious. Supporters of minimum wages see them as a tool to help individuals or families to achieve self-sufficiency and to protect workers in low-paid occupations from exploitation. However, opponents argue that raising minimum wages can decrease the employment opportunities available to low-wage workers and can lead to a reduction in the non-wage components of workers' compensation package, such as fringe benefits. A third view of China's minimum wages is that they are less important in practice than theory might suggest because they are only sparsely enforced in rural areas while rural-to-urban migrant workers tend to be willing to accept jobs that pay less than the going minimum wage. Therefore, in large parts of the labor market, the minimum wage might exist in name only (Chan, 2001).<sup>48</sup>

Many analysts consider that the enforcement of labor laws more generally in China is weak (Chen, 2001; Deng and Li, 2012; and Rawski, 2006). However, Fang and Lin (2015) and Chapter 4 of this edited volume provide evidence from quantitative data and case studies respectively that the enforcement of China's minimum wage policies is no longer negligible, especially after an increase in enforcement efforts after the introduction of the Minimum Wage Regulations in 2004, particularly with regard to workers in urban areas who have a local household registration (*or hukou*).

As discussed in Chapter 3, China has no uniform national minimum wage. Instead, provincial governments set the minimum wage levels within their jurisdictions. China promulgated new Minimum Wage Regulations in January

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<sup>48</sup> These different perspectives on China's minimum wages may not necessarily be in conflict. A more nuanced state of affairs is also possible where the minimum wages have some of the negative effects emphasized by their detractors but at the same time serve some of the goals advocated by their supporters. In fact, some existing evidence shows that minimum wages may result in a tradeoff between potential earnings benefits for some and job losses for others (Card and Krueger, 1995 and Neumark and Wascher, 2008).

2004 that required local governments to implement a minimum wage increase at least once every two years, extended coverage to new groups of workers such as part-time workers, and quintupled the penalties for violation or noncompliance. Since the Minimum Wage Regulations came into effect in March 2004, there have been frequent and substantial increases in minimum wages across the country.

How did these changes in minimum wages between 2002 and 2009 affect poverty in urban China? As already mentioned in Chapter 3, there is some evidence that in many contexts higher minimum wages can have a modest negative impact on poverty while creating both winners and losers (Gindling, 2014). However, the sign and magnitude of the effect of minimum wage increases on poverty will be context-specific and depend on a range of factors, including the effects of minimum wage increases on wages and employment, the degree of income sharing in society (for instance in the form of the presence or absence of unemployment insurance) and within households, the household circumstances of low-income workers, and the level of the minimum wage compared to the poverty line.

In this chapter, we present the results of our analysis of whether and to what extent the introduction of the Minimum Wage Regulations in 2004 affected China's urban poverty rate. Methodologically, we used difference-in-differences estimations that made it possible to accommodate the potential for omitted variable bias. Omitted variable bias occurs when a variable that is correlated with both the dependent variable and an explanatory variable in a regression equation is omitted from the regression equation. It is the most important challenge that has to be overcome to ensure the validity of the results of minimum wage research. Because of the potential for omitted variable bias, documenting a simple correlation between minimum wage levels and poverty is not enough to establish a causal relationship between the two variables. The difference-in-differences estimations overcome this challenge by emphasizing exogenous variation in minimum wages introduced by the policy change in 2004.

Our results show that the new Minimum Wage Regulations introduced in 2004 had a significant impact in reducing poverty, albeit to a relatively modest extent. For the sample as a whole, the introduction of the Minimum Wage Regulations reduced the incidence of poverty among affected workers by 2.6 percentage points from a baseline poverty rate between 2002 and 2009 of 13 percent. These results are qualitatively robust across different subgroups with the strongest positive effect being felt by female household heads affected by the policy change whose poverty rate decreased by 2.8 percentage points. The conclusion that the new Minimum Wage Regulations introduced in 2004 reduced poverty in a significant but relatively modest way is consistent with findings from other studies that have shown that minimum wage increases in China tend to lead to both unemployment and a reduction in wage inequality (Fang and Lin, 2015 and Lin and Yun, 2016).

The remainder of this chapter is structured as follows. Section 1.1 provides a background discussion of minimum wages and poverty in China, and in Section 2, we discuss our data sources and present summary statistics about the sample. In Section 3 we discuss the results of our analysis of the effects of the introduction of the Minimum Wage Regulations on urban poverty in China and then present our conclusions in Section 4.

### 1.1 Background on Minimum Wages and Poverty in China

Similar to Figure 5.1 in Chapter 5, Figure 6.1 shows a time series of average monthly minimum wages (in nominal terms) in China from 2002 to 2009. In addition, it depicts a second time series of the number of provinces in which minimum wages were raised in each year and the moving average of this time series over the same period.<sup>51</sup> During the investigation period covered by this chapter (from 2002 until 2009), the average national nominal minimum wage rose at a fast pace, climbing from Yuan 292 (about US\$36) in 2002 to Yuan 563 (about US\$78) in 2009. Minimum wage increases were generally also very significant if expressed relative to the level of the transfers from the minimum income guarantee program (*dibao*) for urban residents. For instance, from 2002 to 2009 the *dibao* level for one-person households in Shanghai rose from Yuan 280 to Yuan 350, while over the same time period the local minimum wage rose from Yuan 435 to Yuan 840.

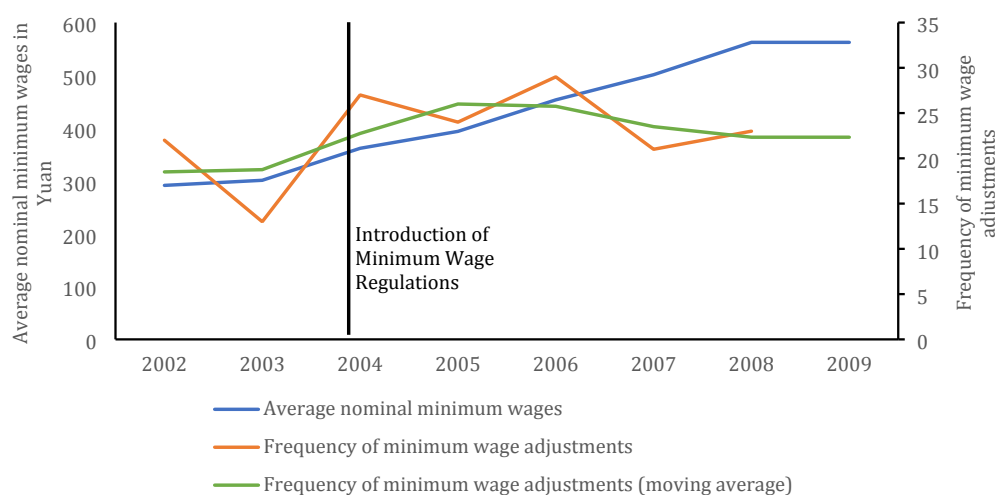
The pace of change in nominal minimum wages picked up at or around 2004. In the eight years before the 2004 Minimum Wage Regulations were put into effect, average nominal minimum wage levels increased by 90.4 percent in those parts of the country that had implemented a minimum wage by 1996. This was followed by an increase of 178.1 percent in the eight years between 2004 and 2012. Furthermore, as shown by the time series of the number of provinces that raised the minimum wage levels each year and even more clearly by the moving average of this time series, there was apparently an increase in the number of provinces that raised their minimum wage levels each year at or around 2004. This indicates that since then minimum wage adjustments have become more frequent.

Figure 6.2 shows the trends in the urban poverty rate and the minimum-to-average wage ratio over the investigation period. We defined the poverty rate as the poverty headcount ratio calculated using the international poverty line of US\$1.9 per day at purchasing power parity (PPP) exchange rates. As mentioned above and as has been documented by many studies, urban poverty in China declined quickly and steadily during the investigation period, despite a brief rebound in 2008 due to the global financial crisis. As is evident from Figure 6.2, in 2002 the urban poverty rate stood at almost 16

<sup>51</sup> In Section 2, we describe how we calculated average minimum wages for each year.

percent before falling to less than 10 percent in 2007, temporarily increasing to about 12 percent in 2008, and falling again to about 10 percent in 2009. In addition and in accordance with the findings of Chapter 5, Figure 6.2 documents that the minimum-to-average wage ratio was very low and falling before the introduction of the Minimum Wage Regulations in 2004. Thereafter, the ratio first rose steadily between 2004 and 2008 and then fell in 2009 following an almost nationwide moratorium on minimum wage increases in the wake of the global financial crisis.

**Figure 6.1: Minimum Wages and Frequency of Adjustment, 2002-2009**



Source: Authors' calculations.

**Figure 6.2: Urban Poverty Rate and the Minimum-to-average Wage Ratio, 2002-2009**



Source: Authors' calculations.

**Note:** The data have been adjusted for inflation, and we accounted for the differing living costs among provinces by applying the PPP-adjusted deflator developed by Brandt and Holz (2006). We calculated poverty rates using PPP US\$1.9 per day as the poverty line.

## 2. Data Sources and Summary Statistics

### Data Sources

The data that we used in our empirical analysis was individual-level longitudinal survey data from the Urban Household Survey (UHS) for the period between 2002 and 2009. Therefore, the survey data cover the periods both immediately before and after the new Minimum Wage Regulations were put in place in 2004. The UHS is a continuous, large-scale socio-economic survey conducted by the National Bureau of Statistics (NBS) for the purpose of studying the working conditions and living standards of urban households. The UHS defines urban households as households with both urban and rural *hukou* as long as they have been living in an urban area for at least six months. According to this definition, the UHS contains some rural-to-urban migrant households with rural residency permits. However, in practice, only very few migrants from rural parts of China working in urban areas without an urban residency permit are included in the UHS data set. Consequently, our analysis in this chapter only focuses on workers with urban residency permits. Hence, our results should not be interpreted as being representative of the entire population working in cities.

While the UHS data are not publicly available, the NBS allows limited access to the microdata of up to 16 out of 31 provinces for scientific research so our analysis is based on this 16-province sample. Importantly, this sample includes almost all of China's most economically significant provinces, represents 65 percent of the total population, and covers 60 percent of the counties in the country.<sup>51</sup> Equally importantly, the sample contained enough variation to enable us to identify the effects of minimum wages on economic outcome variables even though data on China as a whole are not available. More specifically, over the period 2004 to 2009, the 16 provinces in our UHS sample recorded 124 instances of minimum wage increases. As a result of these increases, average real minimum wages rose from Yuan 346 in 2004 to Yuan 563 in 2009 in those 16 provinces (both figures converted to constant 2009 Yuan using the consumer price index for urban residents).

It is important to note that the UHS is an unbalanced panel. The UHS handbook indicates that the sample households are to be included in the survey for three consecutive years and then replaced. However, in practice, local authorities have the flexibility to retain some households for more than three years and sometimes also for a shorter period of time. There are also

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<sup>51</sup> The 16 provinces are Beijing, Guangdong, Jiangsu, Liaoning, Shanghai, and Shandong in Eastern China; Anhui, Heilongjiang, Henan, Hubei, Jiangxi, and Shanxi in Central China; and Chongqing, Gansu, Sichuan, and Yunnan in Western China. When we compared descriptive statistics on some key variables from the UHS with 2005 data from the 2005 Census for the 15 provinces not in the UHS sample, we found that the UHS sample is representative for urban China as whole.

some challenges in terms of tracking identical households over time. However, careful use of individual characteristics (gender, age, educational attainment, year when an individual began to work, and length of stay in the current city) along with household ID numbers made it possible for us to match the same individuals over time and to create longitudinal identifiers for all observations.

As mentioned in Chapter 3, almost all existing studies of China's minimum wages use aggregate-level or, in some cases, firm-level data. In contrast, the individual-level UHS data are at the level of aggregation where wage and employment decisions in response to minimum wage changes are actually made and made it possible for us to control for observed individual-level heterogeneity. In addition, the longitudinal aspect of the UHS data made it possible for us to follow the same individuals over time and, hence, also to control for unobserved time-invariant individual-level heterogeneity.

Similar to the minimum wage data set used in Chapter 5, we constructed the minimum wage data that we used in our analysis by collecting and recording relevant information from every local government website for approximately 2,000 counties every year from 2002 to 2009. We chose to use data at the county level instead of at the provincial (or sometimes prefectural) level, as is usually done in studies covering China, because it has several advantages. First, it allowed for a more accurate measure of the minimum wage at the level where it effectively varies. Indeed, minimum wages frequently vary by counties within the same province, even between geographically contiguous neighbors (see Chapter 5). Second, it made it possible to control for local labor market conditions. Third, the large number of minimum wage changes at the county level also provided more variation in the "treatment," which helped us with identifying the effects of minimum wage changes. Because counties can change their minimum wages at different times within the same year, we used the weighting method first proposed by Rama (2001) in the context of Indonesia to obtain the mean minimum wage in any given year.<sup>52</sup>

For the empirical analysis, we merged the minimum wage data with the UHS data covering the 2002 to 2009 period. Thus, for any given year, we were able to match individuals with their county-level minimum wage. We then adjusted the minimum wages and individual wages for inflation and converted them into constant 2009 Yuan using the CPI for urban residents of the sample provinces.

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<sup>52</sup> The following example illustrates Rama's (2001) weighting method. Assume the minimum wage adjustment in county  $i$  and year  $t$  occurs on June 1 of that year. Then the weighted minimum wage for county  $i$  and year  $t$  is the average of the old and the new minimum wages, with weights of 5/12 and 7/12 respectively.

## Summary Statistics

Table 6.1 and Table 6.2 present summary statistics for the sample at the individual and household level respectively. The sample comprises the urban working-age population (that is, the population aged 16 to 60) in the relevant 16 provinces and for all years between 2002 and 2009. According to Table 6.1, the mean age of the individuals in the sample is 41 years old, and 52 percent of the individuals in the sample are men. The average annual income (adjusted for inflation and for differences in costs of living across provinces according to the method introduced by Brandt and Holz, 2006) is Yuan 19,831. Over 97 percent of sampled individuals are Han Chinese (the most prevalent ethnicity in China). With regard to marital status, about 88 percent of individuals in the sample are married with their spouses being present in their households. As mentioned above, the sample only includes individuals with an urban *hukou*. While individuals with an urban *hukou* from an urban area other than their residence at the time of sampling are not excluded, about 98 percent of the sampled individuals hold a local *hukou*. On average, the individuals in the sample have lived in the relevant urban area for 31 years.

**Table 6.1: Individual-level Characteristics, 2002-2009**

| <i>Variable</i>                   | <i>Men</i> | <i>Std. Dev</i> | <i>Minimum</i> | <i>Maximum</i> |
|-----------------------------------|------------|-----------------|----------------|----------------|
| Age                               | 40.5       | 9.29            | 16             | 60             |
| Men                               | 0.52       |                 | 0              | 1              |
| Annual income (Yuan)              | 19,831     | 18,515          | 0              | 302,654        |
| Years of schooling                | 12.41      | 2.88            | 0              | 19             |
| No schooling or elementary school | 0.04       |                 | 0              | 1              |
| Junior high school                | 0.25       |                 | 0              | 1              |
| High school                       | 0.26       |                 | 0              | 1              |
| Vocational school                 | 0.12       |                 | 0              | 1              |
| 2-year college (associate degree) | 0.22       |                 | 0              | 1              |
| 4-year college or graduate degree | 0.12       |                 | 0              | 1              |
| Han Ethnicity                     | 0.97       |                 | 0              | 1              |
| Married with spouse present       | 0.88       |                 | 0              | 1              |
| Local hukou                       | 0.98       |                 | 0              | 1              |
| Work experience (years)           | 18         | 10.96           | 0              | 45             |
| Years of residence                | 30.77      | 14.64           | 0              | 60             |

*Source:* Authors' calculations based on UHS data.

*Note:* Annual income has been adjusted for inflation and to account for the differing living costs among provinces by applying the PPP-adjusted deflator developed by Brandt and Holz (2006).



**Table 6.2: Household-level Characteristics, 2002-2009**

| <i>Variable</i>                     | <i>Mean</i> | <i>Std. Dev.</i> | <i>Minimum</i> | <i>Maximum</i> |
|-------------------------------------|-------------|------------------|----------------|----------------|
| Poverty rate                        | 0.13        | 0.34             | 0              | 1              |
| Female household head               | 0.18        |                  | 0              | 1              |
| 1 household member                  | 0.01        |                  | 0              | 1              |
| 2 household members                 | 0.17        |                  | 0              | 1              |
| 3 household members                 | 0.57        |                  | 0              | 1              |
| 4 household members                 | 0.15        |                  | 0              | 1              |
| 5 household members                 | 0.08        |                  | 0              | 1              |
| 6 or more household members         | 0.02        |                  | 0              | 1              |
| 1 working household member          | 0.31        |                  | 0              | 1              |
| 2 working household members         | 0.61        |                  | 0              | 1              |
| 3 working household members         | 0.07        |                  | 0              | 1              |
| 4 working household members         | 0.01        |                  | 0              | 1              |
| 5 working household members         | 0.00        |                  | 0              | 1              |
| 6 or more working household members | 0.00        |                  | 0              | 1              |

*Source:* Authors' calculations based on UHS data.

With regard to educational attainment, the sampled individuals had an average of 12 years of schooling. A closer look reveals that 12 percent of individuals had at least a four-year college or graduate degree, while 22 percent and 12 percent attended a two-year college and a vocational school respectively. The most common education level was a high school degree (26 percent), followed by a junior high school degree (at 25 percent). Only a small share of sampled individuals – 3.5 percent – had only elementary school level or no schooling at all.

Summary statistics on the poverty rate, which was our core dependent variable, are shown in the first row of Table 6.2. We defined the poverty rate as a headcount rate and, in accordance with the World Bank's most recent international absolute poverty line, at a per capita income of US\$1.9 per day (2011 PPP). Table 6.2 shows that the poverty rate among sampled individuals was about 13 percent over the 2002 to 2009 period.

Table 6.2 also presents detailed information about several other household characteristics, in particular about whether the household head was female, the size of the household, and the number of household members that were working. Not surprisingly given China's one-child policy that was in effect during the investigation period, the majority – or 57 percent – of households had only three members, with a further 17 percent of households being two-member households and 15 percent being four-member households, while the proportion of one-member households was less than 1 percent. With regard to the number of household members that were working, 61 percent of households had two working members, while about 31 percent of households had one working member and 8 percent had more than two

working members. Finally, Table 6.2 also shows that about 18 percent of sampled households were headed by females.

Table 6.3 presents summary statistics separately for the poor and the non-poor using the PPP US\$1.9 per day poverty line. Some notable differences between the poor and non-poor can be seen in terms of various individual-level and household-level characteristics. Maybe most importantly from the perspective of whether minimum wages can reduce poverty, the proportion of minimum wage workers was much higher among individuals living under the poverty line than among the non-poor. According to the PPP US\$1.9 per day poverty line, the proportion of minimum wage workers among the poor was 33 percent, whereas among the non-poor it was only 7 percent.

**Table 6.3: Summary Statistics by Poverty Status, 2002-2009**

|   | <i>Poor</i> |                  | <i>Non-poor</i> |                  |
|---|-------------|------------------|-----------------|------------------|
|   | <i>Mean</i> | <i>Std. Dev.</i> | <i>Mean</i>     | <i>Std. Dev.</i> |
| <i>Individual-level characteristics</i> |             |                  |                 |                  |
| Age                                     | 37.67       | 11               | 40.92           | 8.96             |
| Men                                     | 0.30        | 0.46             | 0.56            | 0.50             |
| Income (annual, Yuan)                   | 886.00      | 1,276            | 22,639          | 18,229           |
| Years of schooling                      | 10.80       | 3.02             | 12.65           | 2.78             |
| Han Ethnicity                           | 0.97        | 0.17             | 0.97            | 0.17             |
| Married with spouse present             | 0.74        | 0.44             | 0.89            | 0.31             |
| Local <i>hukou</i>                      | 0.97        | 0.17             | 0.98            | 0.13             |
| Work experience (years)                 | 8.73        | 11.42            | 19.38           | 10.2             |
| Years of residence                      | 28.26       | 14.35            | 31.15           | 14.64            |
| Minimum wage worker                     | 0.33        |                  | 0.07            |                  |
| <i>Household-level characteristics</i>  |             |                  |                 |                  |
| Female household head                   | 0.30        |                  | 0.17            |                  |

*Source:* Authors' calculations based on UHS data.

*Note:* Annual income has been adjusted for inflation and to account for the differing living costs among provinces by applying the PPP-adjusted deflator developed by Brandt and Holz (2006).

In terms of other individual-level and household-level characteristics, the non-poor were on average about three years older than the poor. Also, 70 percent of the poor were female compared with 44 percent among the non-poor, while female-headed households were also more common among the poor (30 percent versus 17 percent). With regard to education, the poor had an average of two fewer years of schooling than the non-poor. Furthermore, the poor were less likely to be married (74 percent versus 89 percent). Work experience also distinguishes the two groups, with the poor having on average only nine years of work experience while the non-poor had 19 years. On the other hand, Table 6.3 shows some notable similarities between the two groups. In particular, they had similarly high shares of individuals with Han ethnicity and a local *hukou*.

Table 6.4 provides more detail of differences in individual- and household-level characteristics between the poor and the non-poor. It reveals that the two-year difference in average years of schooling between the two groups translated into a disproportionately high share of individuals with only a high school degree or an even lower level of education among the poor. In contrast, among the non-poor, there was a higher share of individuals who had completed vocational education, a two-year college, a four-year college, or graduate studies. Other household-level characteristics worth noting include the poor having a lower share of two-member families (6 percent versus 22 percent) and being less likely to have two working members in a household (59 percent versus 62 percent).

**Table 6.4: Frequency Distributions by Poverty Status, 2002-2009**

|                                     | <i>Poor</i> | <i>Non-poor</i>  |
|-------------------------------------|-------------|------------------|
|                                     | <i>Mean</i> | <i>Std. Dev.</i> |
| Individual-level characteristics    |             |                  |
| No schooling or elementary school   | 10.08       | 2.55             |
| Junior high school                  | 38.26       | 22.73            |
| High school                         | 28.08       | 26.00            |
| Vocational school                   | 10.60       | 12.24            |
| 2-year college (associate degree)   | 9.59        | 23.44            |
| 4-year college or graduate degree   | 3.39        | 13.08            |
| Household-level characteristics     |             |                  |
| 1 household member                  | 0.00        | 0.01             |
| 2 household members                 | 0.06        | 0.22             |
| 3 household members                 | 0.61        | 0.55             |
| 4 household members                 | 0.20        | 0.13             |
| 5 household members                 | 0.10        | 0.08             |
| 6 or more household members         | 0.03        | 0.01             |
| 1 working household member          | 0.38        | 0.28             |
| 2 working household members         | 0.59        | 0.62             |
| 3 working household members         | 0.03        | 0.09             |
| 4 working household members         | 0.00        | 0.01             |
| 5 working household members         | 0.00        | 0.00             |
| 6 or more working household members | 0.00        | 0.00             |

*Source:* Authors' calculations based on UHS data.

### 3. Effects of Minimum Wages on Poverty in Urban China

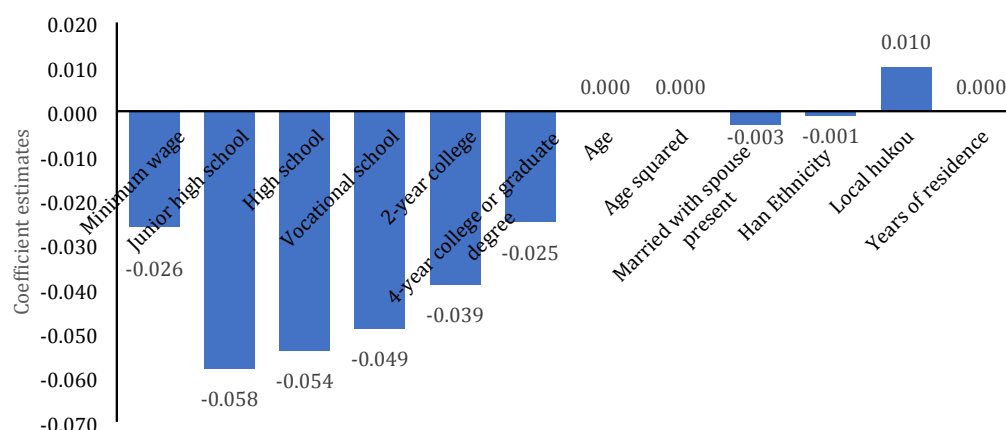
To examine the effect of the 2004 introduction of the Minimum Wage Regulations on urban poverty, we used a regression difference-in-differences model (see Annex 6A for a formal representation of this model). The baseline difference-in-differences estimates for the sample of all workers are

summarized in Figure 6.3. These and the following estimates summarized in Figure 6.4, Figure 6.5, and Figure 6.6 control for occupation, industry, city-level macroeconomic factors (such as per capita GDP, the unemployment rate, and gross FDI inflows), city and year fixed effects, and province-level time trends.<sup>53</sup> In the figures, \*\*\*, \*\*, and \* indicate statistical significance at the 1, 5, and 10 percent levels based on household cluster robust standard errors.

The first bar in Figure 6.3 reports the coefficient estimate for the core parameter of interest, the effect of minimum wages on poverty. The estimate for this parameter is negative and statistically significant on the 1 percent level. This means that the introduction of the Minimum Wage Regulations in 2004 reduced poverty among the families of urban workers in the treatment group. In quantitative terms, the effect of the new minimum wage policy was relatively modest but non-negligible. The first bar of Figure 6.3 also shows that the introduction of the Minimum Wage Regulations reduced the incidence of poverty in the sample of all workers by 2.6 percentage points.

**Figure 6.3: Difference-in-difference Estimates of Poverty Status (all workers)**

Source: Authors' calculations based on Démurger et al (2019) and UHS data.

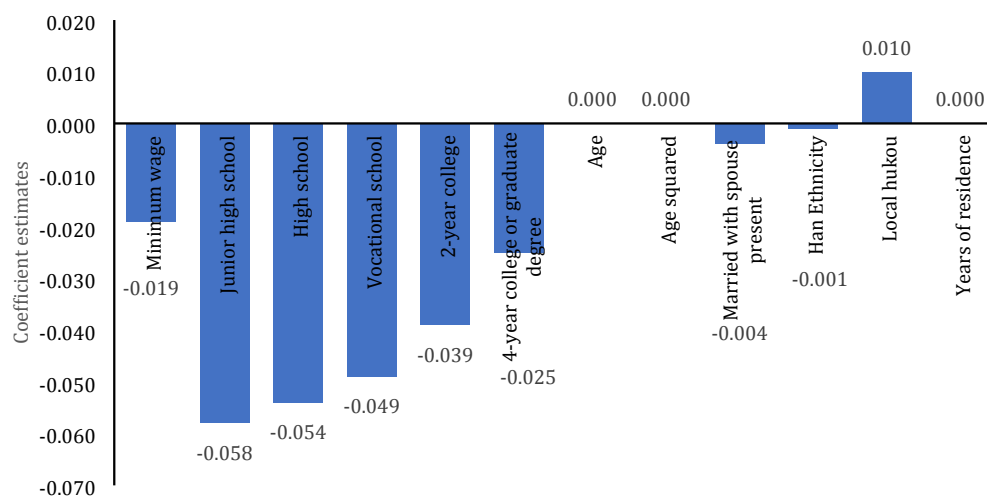


**Note:** Control variables for occupations and industries, city-level macroeconomic variables, city fixed effects, time fixed effects and province-level common time trends were also included in the regression but are not depicted here. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels based on household cluster robust standard errors.

<sup>53</sup> Robustness checks (which are not reported here but are available from the authors on request) showed that our results are qualitatively robust to alternative poverty measures such as PPP US\$1.25/day, PPP US\$3.1/day, and 50 percent of the median wage. Besides these head count indices (discrete dependent variables), our results are also qualitatively robust to using the poverty gap index FGT1 and the poverty severity index FGT2 as dependent variables as proposed by Foster et al (1984). Coupled with the plethora of control variables including city and year fixed effects and province-level time trends, the robustness of our results should alleviate any concerns that they are due to the interplay of specific policies other than the minimum wage and their impact on specific groups who were near the poverty threshold in 2004.

Some important individual characteristics such as educational attainment, local *hukou* status, and years of local residence, among other things, have a statistically significant association with an individual's poverty status. For instance, poverty incidence is 5.8 percentage points lower for workers with a junior high school education than for a worker with no formal education or only a primary education, while it is 5.4 percentage points lower for those with a high school education. While having a local *hukou* or more years of residence in a specific locality is negatively associated with poverty in a statistically significant way, the economic significance of the association is negligible. Some other individual characteristics such as age, marital status, and ethnicity do not have a statistically significant association with poverty. In any case, estimates for parameters other than the minimum wage effect on poverty should be interpreted not as the manifestation of causal effects but as illustrations of correlations between various individual characteristics and poverty.

Figure 6.4, Figure 6.5, and Figure 6.6 examine if the poverty effect of the introduction of the Minimum Wage Regulations depended on whether a treated minimum wage worker is a household head, is female, or is both. Effectively, the figures implement a series of difference-in-differences-in-differences approaches. Figure 6.4 restricts the sample to household heads, Figure 6.5 to female workers, and Figure 6.6 to female workers who were also household heads. Across the three figures, the estimates of the minimum wage effect on poverty are all negative and are statistically significant at the 1 percent level. Qualitatively, this confirms our main finding that the introduction of the Minimum Wage Regulations in 2004 reduced poverty among the families of urban workers in the treatment group. However, the size of the effects of the introduction of the Minimum Wage Regulations vary somewhat across the different samples. For the sample of female treatment workers, it reduced the incidence of poverty by 1.5 percentage points, while for the sample of household heads, it led to a reduction in the poverty incidence among treated workers of 1.9 percentage points. The strongest effect was recorded for the sample of female household heads. Among this group, the introduction of the Minimum Wage Regulations reduced the incidence of poverty by 2.8 percentage points.

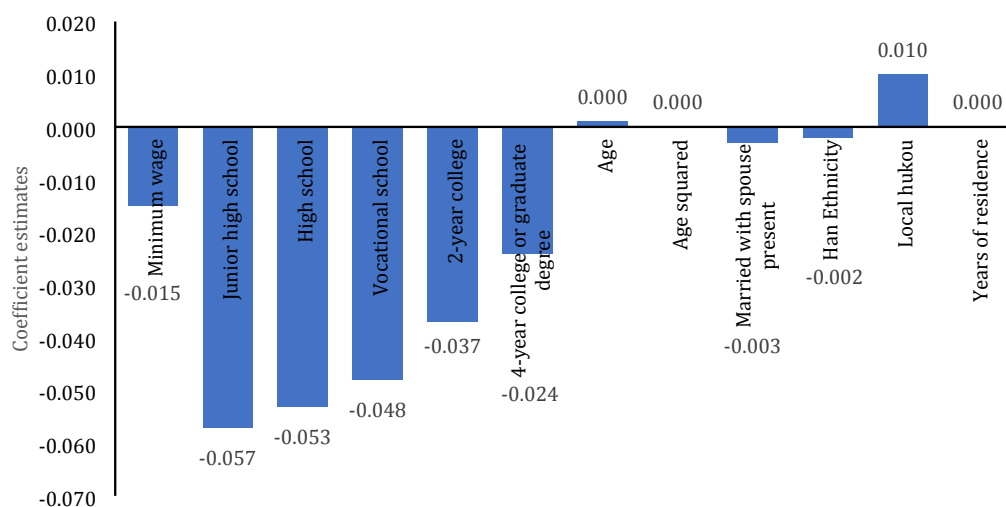
**Figure 6.4: Difference-in-difference Estimates of Poverty Status (household heads)**

*Source:* Authors' calculations based on Démurger et al (2019) and UHS data.

*Note:* Control variables for occupations and industries, city-level macroeconomic variables, city fixed effects, time fixed effects and province-level common time trends were also included in the regression but are not depicted here. \*\*\*, \*\*, and \*, indicate significance at the 1, 5, and 10 percent levels based on household cluster robust standard errors.

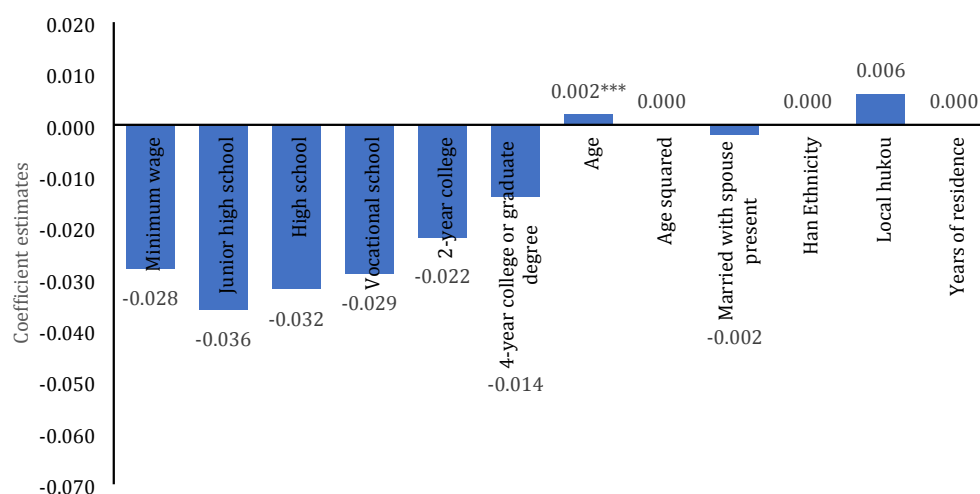
As in the case of the main parameter of interest, coefficient estimates for other control variables stayed qualitatively very robust across the different subgroups analyzed in Figure 6.3 to Figure 6.6. For instance, there is a negative association between all relevant education categories and poverty for all subgroups (compared to the reference category of no or no formal education), while the coefficient estimate for Han ethnicity stays statistically insignificant throughout. For some of the other control variables, there are slight variations in statistical significance, but, even in these cases, the magnitudes of the coefficient estimates stay roughly the same. For instance, there is a positive correlation between possessing a local *hukou* and poverty according to some specifications but not according to others. However, irrespective of the statistical significance of the relevant parameter estimate, it is never larger than 1.0 percentage point.

In sum, the empirical results from the difference-in-differences and difference-in-differences-in-differences regressions all show that the Minimum Wage Regulations of 2004 helped to reduce poverty among treated workers. The size of the effect varied somewhat across different samples and was generally fairly modest.

**Figure 6.5: Difference-in-difference Estimates of Poverty Status (female workers)**

**Source:** Authors' calculations based on Démurger et al (2019) and UHS data.

**Note:** Control variables for occupations and industries, city-level macroeconomic variables, city fixed effects, time fixed effects, and province-level common time trends were also included in regression but are not depicted here. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels based on household cluster robust standard errors.

**Figure 6.6: Difference-in-difference Estimates of Poverty Status (female household heads)**

**Source:** Authors' calculations based on Démurger et al (2019) and UHS data.

**Note:** Control variables for occupations and industries, city-level macroeconomic variables, city fixed effects, time fixed effects, and province-level common time trends were also included in the regression but are not depicted here. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10 percent levels based on household cluster robust standard errors.

## 4. Conclusions

Over the past 20 years, China has carried out a series of reforms of its minimum wage system that have led to a substantial hike in both the magnitude and the frequency of minimum wage adjustments, especially after the introduction of the Minimum Wage Regulations in 2004. In this

chapter, we used an individual-level panel data set of urban residents and a difference-in-difference approach to examine how China's minimum wages have affected poverty. Our empirical results indicate that the introduction of the Minimum Wage Regulations in 2004 reduced poverty in urban areas but that the effects were relatively modest. For the sample of all workers, the introduction of the Minimum Wage Regulations reduced the incidence of poverty by 2.6 percentage points. This conclusion is consistent with the findings of other studies that showed that minimum wage increases in China tend to lead to both unemployment and a reduction in wage inequality (Fang and Lin, 2015 and Lin and Yun, 2016). It is also consistent with findings by Démurger et al (2019) that used a multinomial logit model to examine the effect of minimum wage increases on poverty transitions in the years following the introduction of the Minimum Wage Regulations as well as with international evidence on the poverty effects of minimum wage increases in developing countries (Gindling, 2014).

Two limitations of our data and estimation strategy are worth mentioning. First, the UHS data set does not include rural-to-urban migrants. Minimum wage increases may potentially affect urban and rural-to-migrant workers differently, and thus the poverty reduction effect that we have documented might only provide part of the full picture. Second, our analysis has focused on the period from 2002 to 2009, and, while minimum wages grew very rapidly during this time period, average wages did so as well. As documented in Chapter 5, more recently minimum wages have continued to increase at a relatively rapid pace in spite of a general slowdown in wage growth. Therefore, it is possible that minimum wage increases are no longer having a negative effect on poverty as of today.

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## Annex 6A

To examine the effect of the 2004 introduction of the Minimum Wage Regulations on urban poverty, we used a regression difference-in-differences model. We also studied possible heterogeneous effects by grouping workers by their household headship and/or gender. Our estimation equation can be written as follows:

$$(5.1) \quad y_{it} = \alpha + \beta TREAT_i + \beta POST_t + \sigma (TREAT_i * POST_t) + \eta X_{it} + \phi Z_{rt} + \sigma_r + y_t + Trend_t + \varepsilon_{it}$$

where  $y_{it}$  is a binary variable (head count index) that equals 1 if individual  $i$  is poor (under the poverty line) at year  $t$  and 0 otherwise. A worker is defined as "treated" (that is, affected by a minimum wage increase) if his/her wage at time  $t-1$  is less than the minimum wage standard at time  $t$ . That is, let:

$$(5.2) \quad TREAT_i = 1 \text{ if } W_{t-1} < MW_t \\ = 0 \text{ otherwise.}$$

Analogously, we defined  $POST_t$  as a binary indicator that equals 0 before the introduction of the Minimum Wage Regulations ( $t < 2004$ ) and 1 afterwards ( $t \geq 2004$ ).  $X_i$  is a vector of explanatory variables of worker  $i$ 's characteristics and city level macroeconomic controls. Worker characteristics include educational attainment, age, age squared, marital status, Han ethnicity, local *hukou* status, years of local residence, occupation, and industrial sector. City-level macroeconomic controls are per capita GDP, the unemployment rate, and gross FDI inflows. We included gross FDI inflows because they might be correlated with both minimum wages (as cities may restrain their minimum wages to attract FDI) and wage, employment, and poverty outcomes.

In Equation (5.1), we included region fixed effects  $\sigma_r$  to capture time-invariant unobserved heterogeneity at the level of the region  $r$  and added year fixed effects  $\gamma_t$  to control for unobserved factors that are time-varying but constant across entities.  $\varepsilon_{it}$  is the idiosyncratic error term. Lastly, we included province-specific time trends to relax the common time trend assumption of the most basic difference-in-differences model. The core parameter of interest is the minimum wage policy's effect on poverty. This is captured by the ordinary least squares (OLS) estimator of  $\delta$  in Equation (5.1), an interaction term that captures whether worker  $i$  was “treated” after the introduction of the Minimum Wage Regulations.

# Strictness of Employment Protection Legislation

María-Antonia Remenyi

## 1. Introduction

This chapter provides empirical evidence about employment protection regulation in China aiming to advise the Government of China on how best to formulate or refine policy to balance workers protection with market flexibility.

A key characteristic of any country's labor market is related to the protection of employment. Employment protection legislation relates to the set of rules governing the initiation and termination of employment. What types of labor contracts are permitted? What are the legally accepted features that apply to every kind of contract? When and under what conditions can a worker be dismissed? Are there special rules regarding collective dismissals? These are some of the issues employment protection legislation considers.

The OECD Jobs Strategy (OECD 2004) promotes the idea that the role of employment protection legislation in today global economy is to balance the firm's demand for flexibility in the labor market with worker's demand for jobs and social protection. This approach sees employment protection legislation as only one of the components of a comprehensive strategy that moved the focus from protecting jobs with strict labor legislation to protect workers from the risk of labor market fluctuations. Among other things, this strategy promotes a balance between employment protection legislation and well-design unemployment insurance schemes as well as support to investment in human capital through the working life to minimize risk of associated with global markets fluctuations.

This chapter aims to provide empirical evidence on where is China standing with respect to its employment protection legislation to contribute to the discussion on the development of a more comprehensive approach. The focus is on China's employment protection legislation not on developing the broad approach to balance the need of labor market flexibility with workers protection. The contribution of this chapter is to help to understand

the present to properly develop labor protection policies in the future.

The analysis in this chapter relies on the Organization for Economic Cooperation and Development (OECD) Employment Protection Legislation (EPL) Index. This is a method developed to estimate how strict or flexible the legislation that protects employment is in a given country.

The EPL Index allows inter-country comparisons between countries. Hence, as of 2017, when the analysis of this chapter was prepared, from all the OECD members, a sample of countries with population above 15 million<sup>54</sup> was considered for comparing to the EPL legislation of China. This methodology allows addressing the research questions of this chapter. What are the main provisions of China's employment protection legislation? Are there any gaps, inconsistencies, or other noteworthy features? How cumbersome or costly is China's employment protection legislation given the stringency of its provisions compared to the norm in other countries? What are the legal and economic implications of China's employment protection legislation for employers and employees? What lessons can China learn from good practices of enforcement and governance of employment protection legislation in other countries?

This chapter shows that China's employment protection legislation is strict when it comes to individual dismissals of permanent workers, and severance pay for these workers is higher than in other countries. Furthermore, when workers are found to have been unfairly dismissed, the legislation mandates that they are reinstated or be given compensation equivalent to two times their severance pay. The law is more flexible in the case of collective dismissals than in the case of individual dismissals in that its only additional requirement of firms is that they notify the labor union of pending collective dismissal. Both fixed-term contracts (FTCs) and temporary work agency (TWA) employment are common in China, and the regulations that govern such employment are more flexible than in several other large OECD countries.

The assessment of the strictness of China's employment protection legislation does not by itself provide evidence of how strict it is in practice. If the law cannot be enforced or the government is incapable of enforcing the law, then the most stringent theoretical regulation becomes flexible in practice. The analysis of three governance indicators, government effectiveness, regulatory quality, and, the rule of law indicates that compared to OECD countries, China has difficulties enforcing laws.

Five sections are in this chapter. The methodology, describing the different indicators of employment protection legislation and explaining the governability indicators is in Section 2. In Section 3, the main provisions of China's employment protection legislation are compared with a sample of

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<sup>54</sup> Australia, Canada, Chile, France, Germany, Italy, Japan, S. Korea, Mexico, Netherlands, Poland, Spain, Turkey, United Kingdom, and the United States.

countries that are members of the Organization for Economic Cooperation and Development (OECD). The legal and economic implications of China's employment legislation are discussed in Section 4. The final section presents a summary of the findings.

## 2. Methodology

This section describes the methodology used in section 3 to evaluate the strictness of employment protection legislation as well as the indicators of governance presented in section 4.

There are three sources of information for employment protection legislation. ILO, World Bank (Doing Business) and, OECD. This section explains the three of them briefly to illustrate the rationality behind the selection of the methodology in this chapter. The OECD EPL Index (version 3) was selected for the analysis because it provides more information than the others, and the disaggregated information is summarized in the form of indexes that allow inter-country comparison. Furthermore, OECD methodology is not based only on the reading of the legislation. This methodology also incorporates information from collective agreements as well as relevant court rulings (OECD 2013); also given importance to the implementation of the legislation in practice.

In 2015 ILO estimated quantitative indicators of employment protection legislation with the information contained in its EPLex database. The indicators refer only to individual dismissals of workers with regular contracts. ILO considers eight indicators and, in order to quantify the information in the legislation, a scale between 0 and 1 with 0.25 increments was developed. In this scale, 0 represents the lowest level of protection (ILO 2016). Just one level of aggregation is considered in order to group the eight indicators in five areas: substantive requirements for dismissals, probationary period, procedural requirements for dismissals and severance, and redundancy payment. Table A.1 in the Annex shows the indicators and the five areas analyzed by ILO. A peculiarity of ILO methodology is that the indicators are constructed with explicit reference to international labor standards such as fundamental ILO conventions that contain essential principles and rights at work, specific international labor standards, and other international labor standards relevant to employment termination. These standards are the point of reference when assigning the 0 to 1 score.

The Doing Business Report, a yearly publication of the World Bank Group (IFC), started in 2003 to analyze how easy or difficult it is for a local entrepreneur in a given country to open and run a small to a medium-size business considering different areas of business regulation. As of 2016, the report ranked 189 countries on the “ease of doing business index,” which is a composite index of the different regulatory areas that allow comparison between countries. In the past, the whole index included labor market information (formerly called “employing workers”). This section provided

information about the hiring and redundancy of workers, and the rigidity of working hours. Nevertheless, this segment of the index was the center of criticism, especially from ILO, and this section has not been part of the overall Doing Business Index since 2011. The Employing Workers Index, a sub-indicator of the Doing Business Index, is no longer estimated. The section about labor has been placed in an annex to the report. As of 2016, this annex provided information for 47 indicators with answers such as "yes or no," "1-month salary payment", etc. The indicators were grouped in five main areas: the difficulty of hiring, the rigidity of hours, difficulty of redundancy, redundancy cost and social protection, and labor disputes (World Bank 2016b). Through the years, the list of indicators has been continuously revised and has been changing from time to time. Table 7.2 in the Annex to this chapter contains the list of indicators considered in 2016; the last available at the time of our analysis. (2017).

Information from Doing Business has to be interpreted with caution since the indicators refer to a specific type of business; generally, a local limited liability company operating in the country's largest business city. Hence, the information does not provide a whole picture of the regulatory framework since it focuses only on the one that is relevant to a small to medium-sized domestic business. The assumption about the type of activity performed by this small to medium-sized domestic business has changed over time. In 2010, for example, the assumption was that the business performed general industrial or commercial activities (World Bank 2010, p.79), but in 2016, the business activities were limited to the retail sector. More precisely, the business is a limited liability company with 60 employees that operates a supermarket or grocery store in the economy largest city (for larger economies the data was also collected for the second largest business city). Concerning labor, some, not all, of the data gathered correspond to a worker that is a cashier in a supermarket or grocery store, age 19, with one year of work experience. This person is a full-time employee, and he/she is not a member of the labor union unless membership is mandatory. Furthermore, the business is assumed to be subject to collective bargaining agreements only if such agreements cover more than 50% of the food retail sector and they apply even to firms that are not a party to them. In 2016 the data corresponded to 1,198 responses to a questionnaire (World Bank 2016b) that was sent out to legal practitioners with experience in the corporation/business field as well as government officials in order to respond according to the law.

The OECD EPL Index is a method developed to provide a mean for EPL inter-country comparison. The indexes are built as a multiple-step weighted average of a set of basic indicators. The methodology considers a 6-point scale in which higher scores correspond to more protective (strict) regulations. OECD divides employment protection legislation into two main areas: (i) protection against individual and collective dismissals for permanent workers and (ii) the regulation of temporary employment. The

final component of the EPL Index consists of a multiple-step weighted average of some basic indicators. As of 2017, the methodology to estimate the index has been through three revisions. Version 1 (used since 1985) contains only 14 indicators since collective dismissals were not taken into consideration. Version 2 (used since 1998) contains 18 indicators. Version 3 has been available since 2008 and contains 21 basic indicators, including three added from Version 2: *maximum time to file claim* (under difficulty of dismissal) and *authorization and reporting* of Temporary Work Agency and *equal treatment* - same pay and working conditions as employees of the user firms- (both under temporary work agency employment). Although, OECD methodology makes it possible inter-country comparisons, these changes in methodology make it impossible to compare the current indexes with those of previous versions.

Table 7.1 shows that OECD describes EPL with 21 basic indicators grouped in two main areas. One area corresponds to the employment protection of regular workers against individual and collective dismissals. The other area refers to the regulation of temporary forms of employment. The figures shown in parenthesis correspond to the weights that version 3 assigns to each of the indicators at different levels of aggregation.

**Table 7.1: Employment Protection for Permanent Workers and for Temporary Workers (EPL Index Version 3)**

| Level 4                                    | Level 3   | Level 2  | Level 1  |                                 | Weights<br>At level 1                     |
|--|---|--|--|---------------------------------|---|
| I. – Individual and collective dismissals. | A. – Individual dismissals<br>–Permanent workers<br>(5/7)     | A.1 – Procedural inconveniences<br>(1/3)                                   | 1. – Notification procedures<br>2. – Delay to start notice   |                                 | (1/2)<br>(1/2)                            |
| permanent workers                          |   | A.2 – Notice and severance pay for no-fault individual dismissals<br>(1/3) | 3. – Notice period after   | 9 months<br>4 years<br>20 years | (1/7)<br>(1/7)<br>(1/7)                   |
|  |   |  | 4. – Severance pay after   | 9 months<br>4 years<br>20 years | (4/21)<br>(4/21)<br>(4/21)                |
|  |   | A.3 – Difficulty of dismissal<br>(1/3)                                     | 5. – Definition of unfair dismissal<br>6. – Trial period<br>7. – Compensation<br>8. – Reinstatement<br>9. – Maximum time for claim                             |                                 | (1/5)<br>(1/5)<br>(1/5)<br>(1/5)<br>(1/5) |
|  | B. – Specific requirements for collective dismissals<br>(2/7) |  | 10. – Definition of collective dismissal<br>11. – Add. notification requirements<br>12. – Additional delays involved<br>13. – Other special costs to employers |                                 | (1/4)<br>(1/4)<br>(1/4)<br>(1/4)          |

| <i>Level 4</i>  | <i>Level 3</i> | <i>Level 2</i>   | <i>Level 1</i>  | <i>Weights<br/>At level 1</i> |
|---|----------------|--|---|-------------------------------|
| II. –<br>Regulation<br>on<br>temporary<br>forms<br>of<br>employment |                | C. – Fixed-term<br>contracts (FTCs)<br>(1/2)               | 14. – Valid cases for the use of<br>FTCs  | (1/2)                         |
|   |                |  | 15. – Maximum number of<br>successive FTCs  | (1/4)                         |
|   |                |  | 16. – Maximum cumulative<br>duration  | (1/4)                         |
|   |                | D. – Temporary Work<br>Agency (TWA)<br>employment<br>(1/2) | 17. – Types of work for which is legal  | (1/3)                         |
|   |                |  | 18. – Restrictions on the number of<br>renewals   | (1/6)                         |
|   |                |  | 19. – Maximum cumulated duration  | (1/6)                         |
|   |                |  | 20. – Authorization and reporting   | (1/6)                         |
|   |                |  | 21. – Equal treatment (same wage<br>and working conditions as<br>employees of user firms) | (1/6)                         |

Source: OECD, (2014).

Since 2013, OECD has also updated its methodology of collecting data. Currently, OECD relies more intensively on direct reading and interpretation of the legislation. It also incorporates information from collective agreements (when the agreements provide comprehensive additional employment protection, and they take place at the industry, regional or national level) as well as relevant court rulings (OECD 2013); given importance also to the implementation of the legislation in practice.

The selection of version 3 of the OECD EPL Index for this analysis was based on the more significant amount of information, 21 indicators, this methodology provides. Furthermore, the procedure of collecting data is more comprehensive since it combines the reading of the law with information from conventional practices.

To illustrate where China stands on governance, the analysis of section 4 focuses on three indicators from the World Bank database on governance. The first indicator, *government effectiveness*, reflects the perceptions of survey respondents and public, private, and NGO sector experts of the quality of public services, the quality of the civil service and its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The second indicator, *regulatory quality*, captures their perceptions of the government's ability to formulate and implement sound policies and regulations that permit and promote private sector development. The third indicator, *the rule of law*, reflects their perceptions of the extent to which agents have confidence in and abide by the rules of society, of the quality of contract enforcement, property rights, the police, and the courts, and of the likelihood of crime and violence. In the database, the World Bank ranked countries on these three indicators from a low of -2.5, which signals weak government performance, to a high of 2.5, which indicates strong government performance. Although



these indicators are frequently used in the literature, they should be taken only as a point of reference since there is still broad discussion about the appropriateness of the methodology used to construct them. Kaufman et al. (2010) explain the method used to estimate the indicators while the Governance and Social Development Resource Center (2010) presents a summary of the critique of the methodology.

### **3. China's Employment Protection Legislation Index**

The OECD EPL Index has two main components: (i) protection against individual and collective dismissals for permanent workers and (ii) the regulation of temporary employment. OECD methodology allows to disaggregate the data by indicators to analyze specific topics such as procedural inconveniences, advance notice and severance pay for no-fault individual dismissal, the difficulty of dismissal, additional provisions for collective dismissals and specific requirements for hiring temporary workers, among others. This section presents the results of our analysis of the most important indicators in the index. This analysis reveals the main provisions of China's employment protection legislation. Furthermore, the comparison of China's legislation with the legislation of countries that were OECD members as of 2017, shows how cumbersome or costly is China's employment protection legislation in contrast to the norm in other countries.

OECD employs 2012 data to estimate the indexes. In the case of China, this means that the estimates are based on the 2008 Labor Contract Law in addition to information from collective agreements as well as relevant court rulings. As mentioned in Chapter 3, the Labor Contract Law increased worker protection and made other significant changes to the existing 1994 Labor Law. The Chinese government passed the law intending to provide workers with more employment protection in response to recurring instances of labor abuse and violations of labor rights, particularly reports of slave labor being used in the coal mines of Shanxi and Henan Provinces (Packard and Van Nguyen, 2014). Among the 2008 law's most significant changes is the requirement that employers give employees an open-ended employment contract after two consecutive fixed-term contracts or 10 years of service. The new law also established that severance pay must be provided even to workers on fixed-term contracts if that contract expires and it is not renewed. Finally, the law also generally restricted the use of temporary work agencies (TWAs) to supplementary, ancillary, or seasonal work. All these changes show a movement towards stricter labor protection regulation in China.

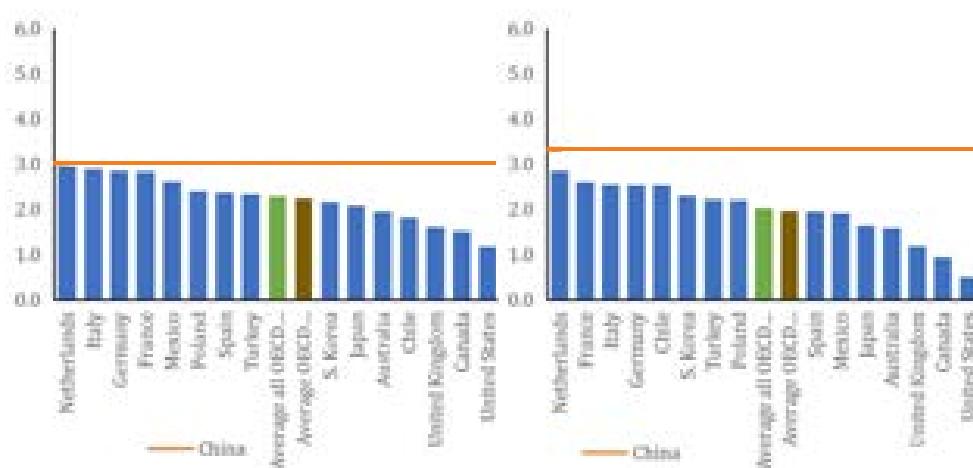
#### **7.1 Individual and Collective Dismissals of Permanent Workers**

In comparing China with the sample of large OECD countries, we found that it is harder to dismiss permanent workers in China than in any other country. Figure 7.1 shows the strength of each country's employment protection laws

concerning the protection of permanent workers against both individual and also collective dismissal (section I in Table 7.1). China scores 3.01, the highest score in the sample. This is almost the same score as Netherlands (2.94) and very close to the scores of Italy (2.89), Germany, (2.84), and France (2.82). If only individual dismissals of permanent workers are considered (section A in Table 7.1), then China's score rises but only slightly as Figure 7.2 exhibits. This shows that China has a few additional specific requirements for collective dismissals since when dismissing collectively, workers will receive the benefits the law contemplates for individual dismissals. It is the strict definition of collective dismissals- 20 workers or 10% of the labor force- and an additional notification requirement what slightly increases the value of the index when individual and collective dismissals are analyzed jointly.

**Figure 7.1: Protection of Permanent Workers Against Individual and Collective Dismissals**

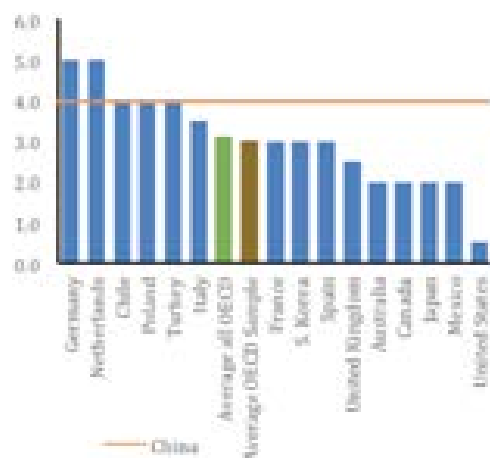
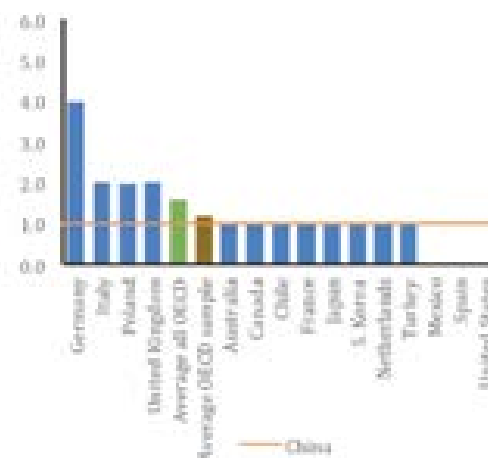
**Figure 7.2: Protection of Permanent Workers Against Individual Dismissals**



Source: Author's calculations based on the OECD's EPL Index.

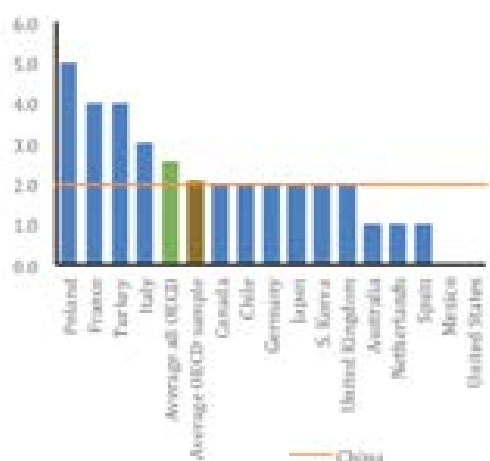
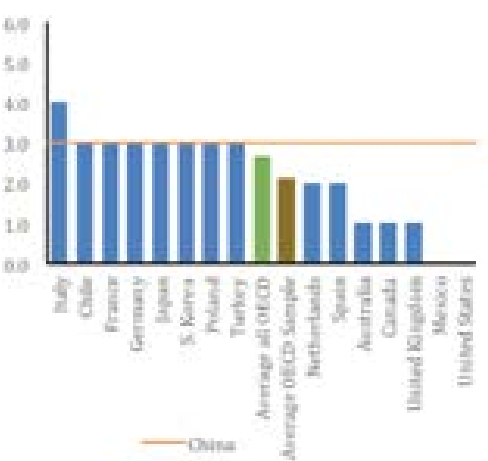
### Procedural Inconveniences Involved in Dismissing a Permanent Worker

In China, an employer may terminate an employment contract by giving a worker 30 days prior notice or by providing a month's wage in place of notice. The employer is expected to notify the labor union in advance, although third-party authorization is not required. The notification procedures for dismissing a worker are relatively strict in China, as Figure 7.3 shows (indicator 1). Only Germany and the Netherlands have more procedural requirements. China's score is similar to Poland's but higher than the large OECD countries average and the average for all OECD countries.

**Figure 7.3: Notification Procedures**

**Figure 7.4: Length of Notice Period After 20 years of Tenure**


Source: Author's calculations based on the OECD's EPL Index.

Regardless of the length of a worker's tenure, employers need to give an employee 30 days written notice. For workers with tenures of 20 years, four years, and nine months, China scores 1, 2, and 3 respectively out of a maximum of 6 on the EPL index (indicator 3). For 20 and four years of tenure, China's score is similar to the average for the large OECD countries, as shown in Figures 7.4 and 7.5 but is higher than the average for workers with only nine months tenure (Figure 7.6).

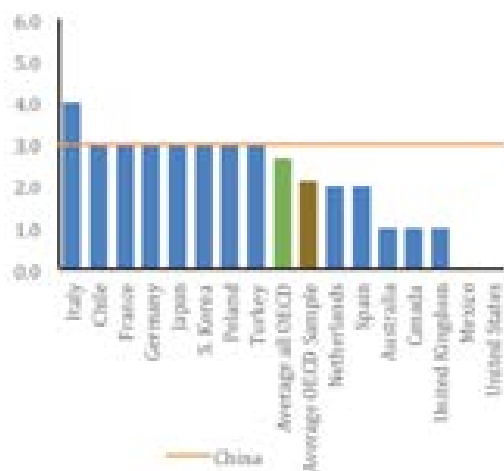
**Figure 7.5: Length of Notice Period after Four Years of Tenure**

**Figure 7.6: Length of Notice Period after Nine Months of Tenure**


Source: Author's calculations based on the OECD's EPL Index.

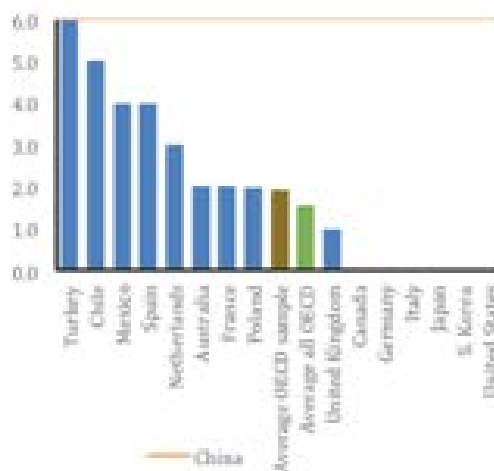
### Notice and Severance Pay for No-fault Individual Dismissals

In China, there are six statutory grounds on which an employee can be dismissed immediately- with no notice or severance pay-, for example, for violating the company's rules and regulations or because the employee is being prosecuted for a criminal offense. Otherwise, employees receive severance pay equivalent to one month's salary per year of tenure, regardless of the length of the worker's tenure (indicator 4). This means that workers who have been working for 20 years would receive severance pay equal to 20 months of their salary. An employee with four years of tenure would receive a payment equal to four months of wages. Figures 7.7 and 7.8 show the different severance payments offered by large OECD countries to employees with 20 years and four years of tenure respectively. In the case of 20 years tenure, China and several other countries exhibit a high score. However, in the case of four years tenure, China not only has the highest score, but that score is much higher than the scores of almost all of the other countries but Turkey.

**Figure 7.7: Severance Pay After 20 Years of Tenure**

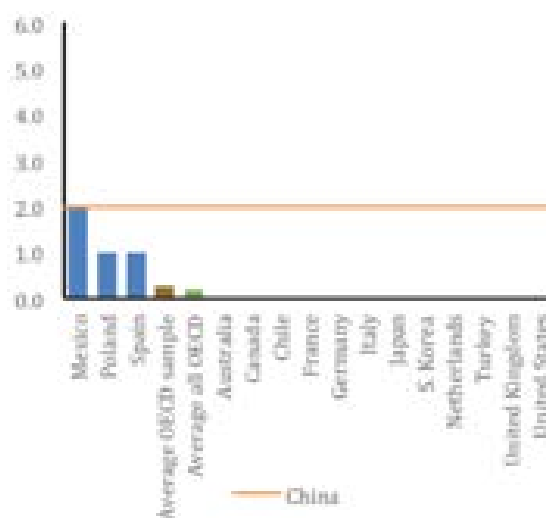


**Figure 7.8: Severance Pay After Four Years of Tenure**



Source: Author's calculations based on the OECD's EPL Index.

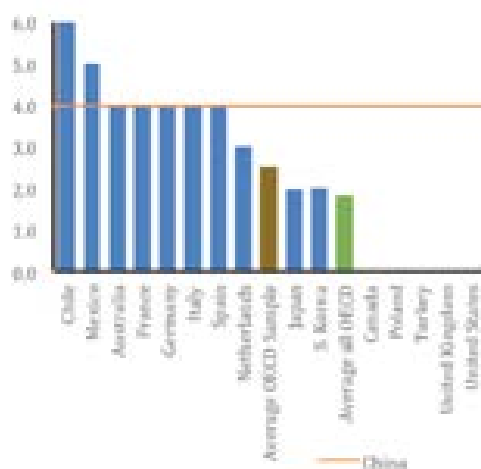
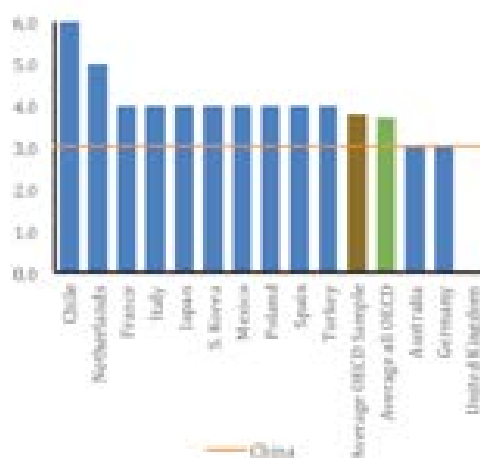
In China, even workers with only nine months of employment receive a month's salary as severance pay. Figure 7.9 shows that only four countries- China, Mexico, Poland, and Spain- provide severance pay when the worker has been employed less than a year. Among all the countries, China and Mexico offer the highest severance pay to employees with this length of tenure.

**Figure 7.9: Severance Pay After Nine Months of Tenure**


Source: Author's calculations based on the OECD's EPL Index.

## Difficulty of Dismissal

The definition of justified dismissal assesses if worker capability or redundancy of the job are adequate and sufficient grounds for dismissal - the most flexible regulation- or if the law considers restrictions for dismissals. In China, as in many of the large OECD countries, employers must give the worker an opportunity to transfer or retrain for a different job before being dismissed as shown in Figure 7.10 (indicator 5). Chile's score is the highest in this regard because of a worker's lack of capacity cannot be used as grounds for dismissal.

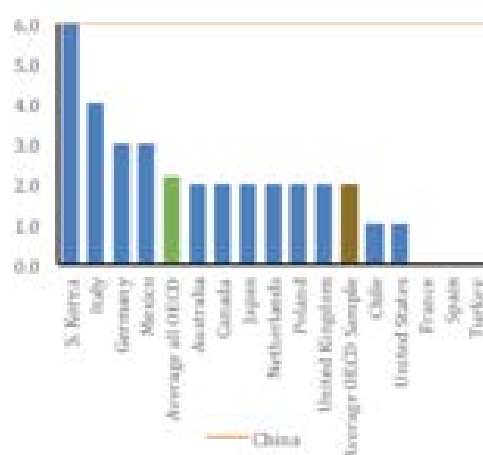
**Figure 7.10: Definition of Justified or Unfair Dismissal**

**Figure 7.11: Length of Trial Period**


Source: Author's calculations based on the OECD's EPL Index.

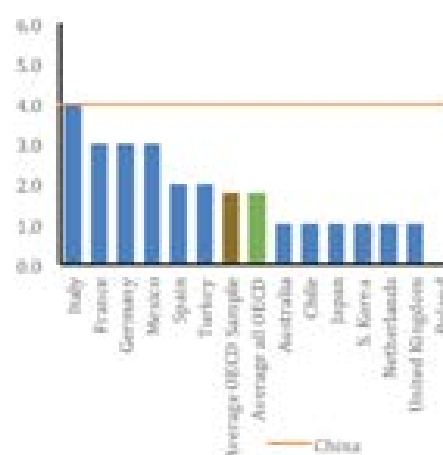
Newly hired workers must usually go through a trial period during which they are not covered by employment protection provisions, and they usually cannot make any unfair dismissal claims. The longer the trial period, the more flexible the country's labor protection regulations are. In China, the trial (probation-) period depends on the length of the contract. If the contract is between three months and one year, the trial period may not exceed one month. If the contract is between one and three years, the trial period may not exceed two months. For fixed-term contracts of three years or more and open-ended contracts, the probation period may not exceed six months. This policy is more flexible than all of the countries except Australia, Germany, and the United Kingdom, as shown in Figure 7.11 (indicator 6).

Protection against unfair dismissals is a significant component of workers' protection against abuses in the workplace. Monetary compensation (indicator 7) and the possibility of reinstatement (indicator 8) are protection mechanisms when unfair dismissals happen. Of all of the countries surveyed, China has the strictest legislation regarding unfair dismissals. If a contract is terminated in violation of the law – the termination is not based on statutory grounds-, then the worker can request reinstatement (Figure 7.12). If the employer chooses not to reinstate the employee, then it must pay the employee compensation equivalent to twice the amount of severance pay to which the worker would have been entitled. Hence, for an employee with 20 years of tenure (Figure 7.13), compensation without reinstatement would be equivalent to 40 months of their salary since severance pay equals one month of wages per year of tenure. China and Italy have the strictest regulations in this area.

**Figure 7.12: Possibility of Reinstatement Following Unfair Dismissal**



**Figure 7.13: Compensation Following Unfair Dismissal**



Source: Author's calculations based on the OECD's EPL Index.

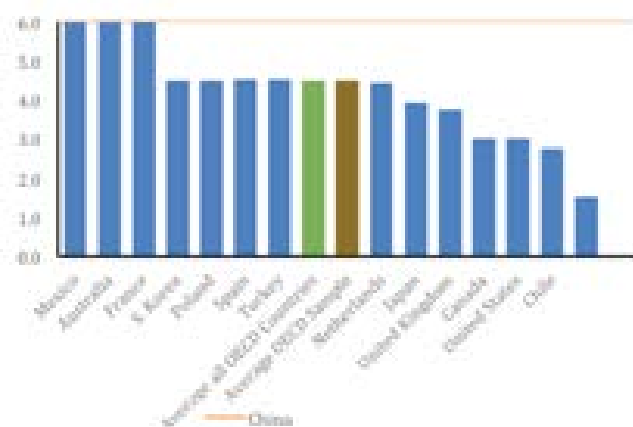
In summary, the analysis shows that it is more costly for firms to dismiss a permanent worker in China than in other large OECD countries. China's

labor protection regulation is relatively more flexible regarding the length of notice period before dismissal for workers with tenure of four years and 20 years, and on the duration of the trial (probation) period. On the length of the trial period, only legal provisions in Australia, Germany, and the United Kingdom are more flexible than the Chinese. The analysis shows that for all the other indicators considered in the Indicator of Individual Dismissals of Permanent Workers (section A), China's regulations are stricter than those of most of the other countries.

## Specific Requirements for Collective Dismissals

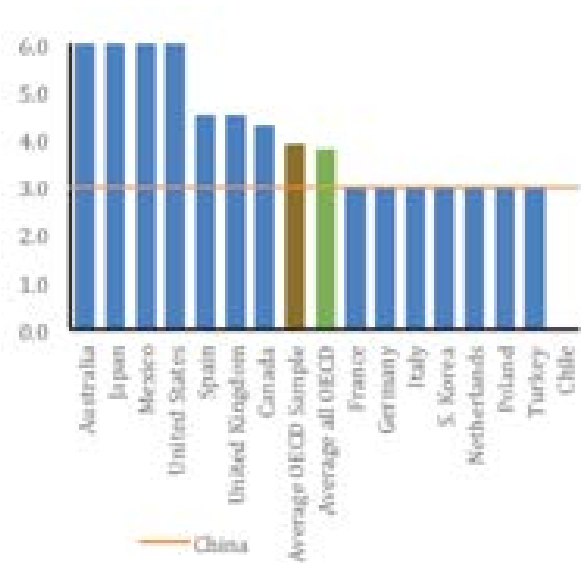
China has some of the strictest rules regarding the definition of collective dismissal of workers since special provisions apply for personnel reductions of at least 20 workers or at least 10 percent of the workforce. Furthermore, only when a business is restructuring due to bankruptcy, having difficulties with its production and operations, or switching a production line, for example, is it allowed to make collective dismissals. Figure 7.14 shows that most countries have strict restrictions on the definition of collective dismissal, but China's are even stricter; the average score for OECD countries is 4 but China has a score of 6 (indicator 10).

**Figure 7.14: Definition of Collective Dismissal**



Although China's definition of collective dismissal is strict in absolute and relative terms, a few additional provisions apply (indicator 11). The additional provisions are supplemental to the provisions any worker is entitled under individual dismissal. Figure 7.15 shows that on additional notification requirements for collectively dismiss workers, China scores below the average for the sample of large OECD members as well as the average for the OECD as a whole. In China, 30 days in advance the employer is required to explain the circumstances of the collective dismissal to the labor union and/or to all workers, to listen to their opinions, and to report a personnel cutback plan to the local labor bureau of the Ministry of Human Resources and Social Security.

Figure 7.15: Additional Notification Requirements for Collective Dismissals



Source: Author’s calculations based on the OECD’s EPL Index. However, the legislation specifies no additional delays related to collective dismissal in China, nor do those workers receive any additional severance pay that the one they are entitled under individual dismissal.<sup>55</sup> Therefore, in this respect, China’s labor protection standards are more flexible than those of most large OECD countries as well as of all OECD countries as Figures 7.16 and 7.17 show (indicators 12 and 13)

Figure 7.16: Additional Delays Involved in Collective Dismissals

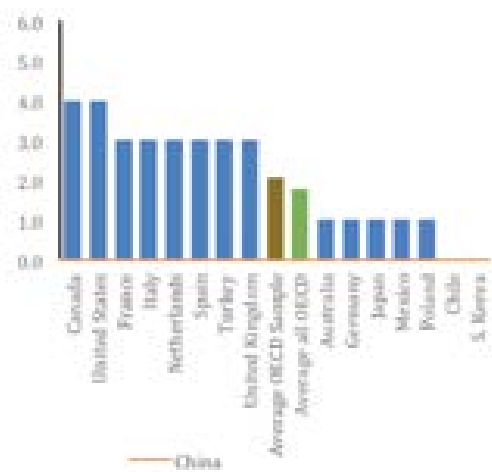
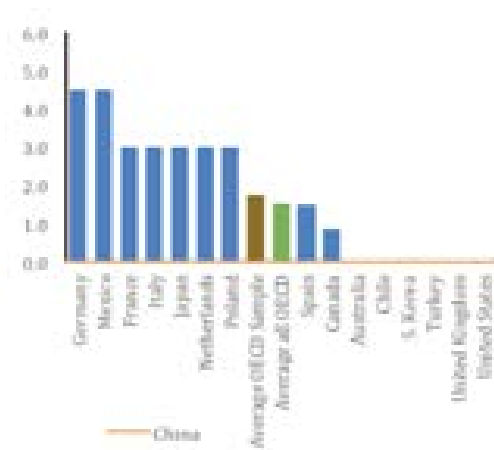


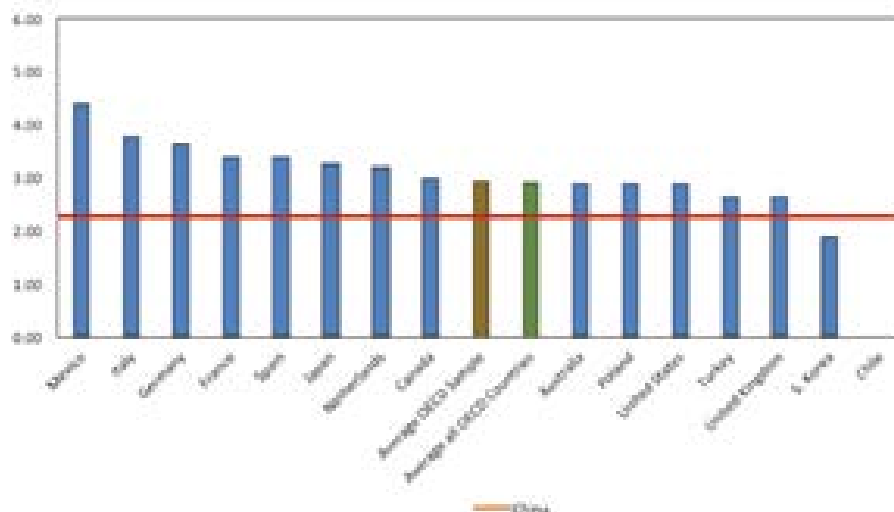
Figure 7.17: Other Special Costs of Collective Dismissals



Source: Author’s calculations based on the OECD’s EPL Index. Figure 7.18 shows the relative flexibility of China’s law about specific requirements for collective dismissals (section B in Table 7.1)

<sup>55</sup> The OECD methodology for the EPL Index only considers additional requirements on top of those that apply to individual dismissals.



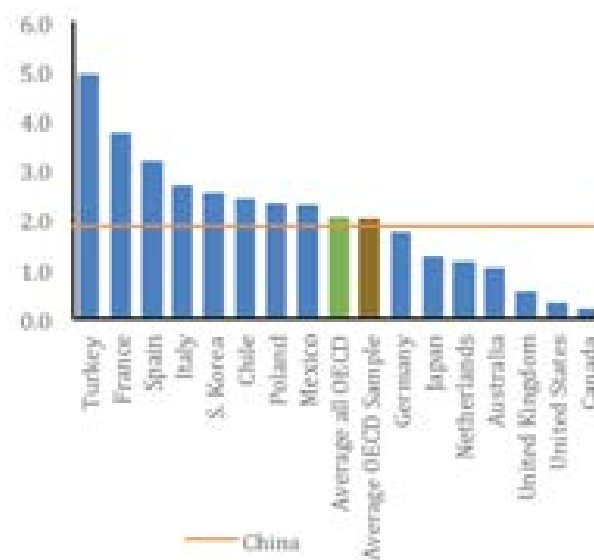
**Figure 7.18: Specific Requirements for Collective Dismissal**

Source: Author's calculation based on the OECD's EPL Index

The relative flexibility regarding collective dismissal reduces the overall indicator pertaining individual and collective dismissals of permanent workers in China (section I in Table 7.1), since the Chinese legal standards for dismissing individual workers (section A in Table 7.1) are stricter than those governing collective dismissals (section B in Table 7.1). This could be observed in Figures 7.1 and 7.2 above

### Temporary Employment

Concerning temporary forms employment (section II in Table 7.1), the flexibility of China's regulations is about the same as the average for the large OECD countries and the average for all OECD countries as Figure 7.19 exhibits. The figure also illustrates that on the strictness of regulation of temporary forms of employment, there is wide dispersion among OECD countries. In comparison with Figure 7.1, regulations about temporary forms of employment are much more flexible than the regulations governing the dismissal of a worker with open-ended (permanent) contracts.

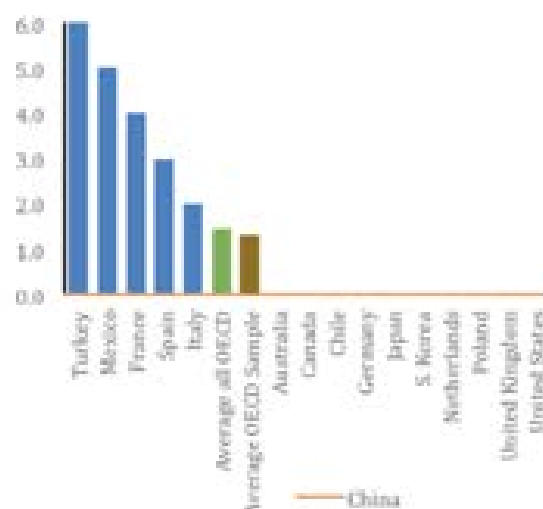
**Figure 7.19: Regulations Governing Temporary Forms of Employment**

Source: Author's calculations based on the OECD's EPL Index.

Following OECD methodology, under temporary forms of employment, the analysis distinguishes between employment protection standards for temporary workers with fixed-term contracts (FTCs) and those employed through temporary work agencies (TWA). Although both are temporary forms of employment, the legislation has special provisions if a company uses an intermediary agency to hire workers.

### Fixed-Term Contracts

In China, there are no restrictions on the type of work for which direct (without TWAs intervention) fixed-term contracts may be used. Figure 7.20 shows that this is also the case for the other countries; except for Turkey, Mexico, France, Spain, and Italy (indicator 14).

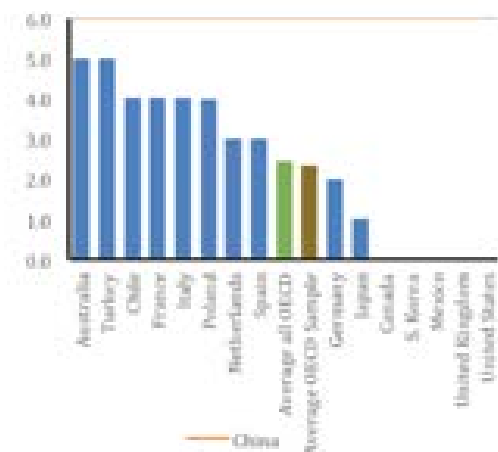
**Figure 7.20: Valid Situations for Using Fixed-term Contracts**

Source: Author's calculations based on the OECD's EPL Index.

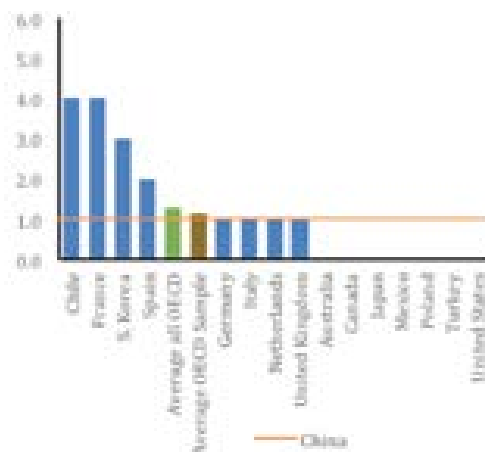
In China, if a worker has completed two successive fixed-term contracts and his or her contract is up for renewal, the new contract must be open-ended. An additional directive is that together the two successive fixed-term contracts with the same employer could not last more than 10 years in total. Hence, a worker could be under FTC for up to ten years with the same employer. This requirement creates a perverse incentive for employers to use FTCs as other benefits, such as annual leave and severance pay, also depend on tenure. For example, employees with more than one year but less than 10 years of service are entitled to five days of paid annual leave, while employees with at least 20 years of service are entitled to 15 days of leave (Baker and McKenzie International, 2013). Consequently, it is not clear what the purpose of the regulation is. It is not to provide workers with stable employment given that ten years (the maximum length of two consecutive fixed-term contracts) is a significant share of anyone's working life.

When compared to other OECD countries, China shows the strictest regulation regarding the maximum number of successive fixed-term contracts permitted (only two). However, other countries have stricter regulations (shorter length permitted) than China regarding the total length of successive fixed-term contracts (Figures 7.21 and 7.22).

**Figure 7.21: Maximum Number of Successive Fixed-term Contracts**



**Figure 7.22: Maximum Cumulative Duration of Successive Fixed-term Contracts**



Source: Author's calculations based on the OECD's EPL Index.

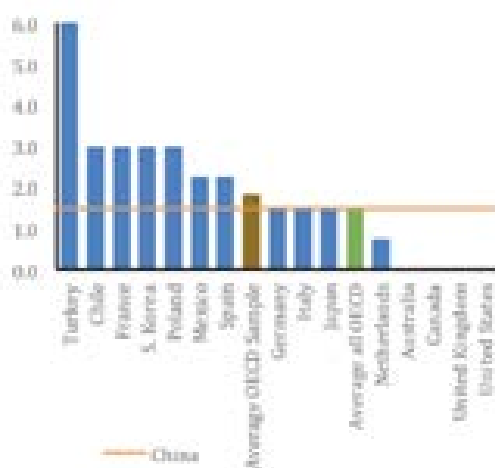
In summary, China legislation of FTCs is flexible in all aspects but the limitation of a maximum of two successive contracts.

## Temporary Work Agency (TWA) Employment

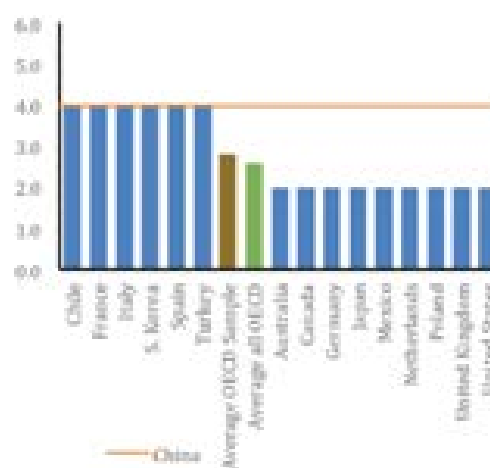
In China, temporary work agencies (TWAs) are known as Labor Dispatch Agencies since these agencies dispatch employers to work at another organization. Under the 2008 Labor Code, employers are only supposed to

use workers from TWAs for temporary, ancillary, and substitute situations.<sup>56</sup> However, in practice, TWA workers were widely used in many situations. Labor dispatch is naturally attractive to employers since the risk of labor disputes is assumed by the TWAs and not by the company where the worker actually performs the job. Furthermore, , in China the fact that foreign companies could only recruit their Chinese employees through an intermediary Chinese company added to the widely use of this form of employment. Because the OECD's methodology for the EPL Index takes into consideration not only what the legislation specifies but also case law, and common practices, it therefore assigned China a score of only 1.5 out of the maximum 6 when evaluating strictness regarding types of works for which TWAs employment is legal. As Figure 7.22 exhibits, this score is close to the average score for all OECD countries but is lower than the OECD countries in the sample (indicator 17).

**Figure 7.23: Types of Work for which Temporary Work Agency Employment is Legal**

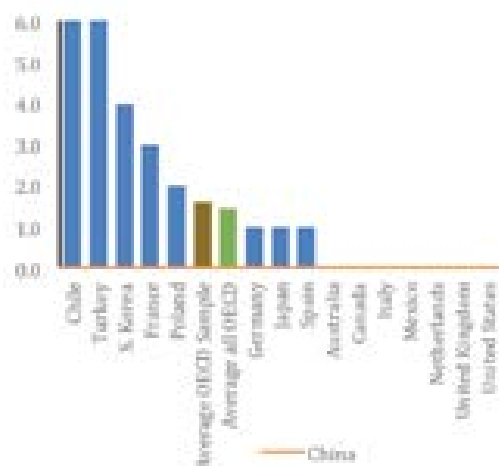
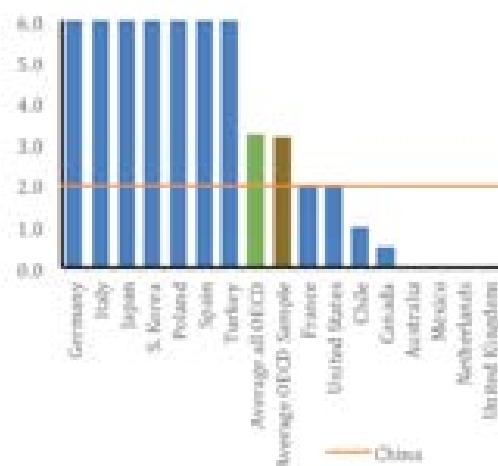


**Figure 7.24: Restrictions on the Number of Renewals of Temporary Work Agency Assignments**



Source: Author's calculations based on the OECD's EPL Index.

<sup>56</sup> "Temporary" refers to a temporary role of fewer than six months. "Ancillary" refers to a position providing support services to the primary business of the employer; and "substitute" refers to a position in which the worker engaged through a TWA or labor dispatch company temporarily replaces an existing employee who is unable to work due to further study, leave, or another reason.

**Figure 7.25: Maximum Cumulative Duration of Temporary Work Agency Assignments****Figure 7.26: Temporary Work Agency Authorization or Reporting Obligations**

Source: Author's calculations based on the OECD's EPL Index.

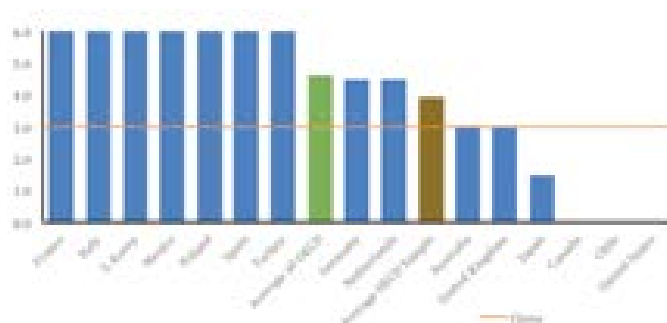
As with FTCs, TWA contracts with the employee should be for at least two years, and they may only be renewed once (indicator 18 in Table 7.1). As Figure 7.23 shows, China – as well as Chile, France, Italy, S. Korea, Spain, and Turkey- have the strictest regulation among OECD countries. However, in China, there is no limitation on the duration of TWA assignments to the other company as long as the worker is appointed to temporary, ancillary or substitute positions. As Figure 7.24 shows, China's lack of regulation of the maximum cumulative duration of TWA assignments is not unique as many other countries in the sample also fail to limit the duration of TWA assignments (indicator 19).

In China, TWAs require authorization and registration from the local labor bureau of the Ministry of Human Resources and Social Security, but after that, they do not need to make any further reports to the authorities. Hence, TWA workers are supervised by the labor authority only at the beginning of their assignments but not after that. As Figure 7.25 indicates, in this respect, China's regulatory approach is far more flexible than those followed by the more developed OECD countries such as Germany, Italy, Japan, South Korea, Poland, Spain, and Turkey (indicator 20).

The law in China is designed to protect temporary workers hired through a TWA. They are supposed to receive the same pay for the same work as the employees of the company for which they work. The law also specifies that agency workers are entitled to the same statutory benefits and the same severance pay in case of termination as the other employees. Most OECD countries also require that TWA workers should be treated the same as employees of the company (indicator 21). However, in practice in China, they are often underpaid and do not receive such benefits (Dezan Shira and Associates 2013). This explains why the OECD assigned a lower than average

score to China (Figure 7.22).

**Figure 7.27: Equal Treatment of Regular and Agency Workers by User Firms**



Source: Author's calculations based on the OECD's EPL Index.

In 2013, the government amended the 2008 Contract Law to tighten loopholes related to hire TWA workers and to protect those workers better, as this type of employment became more popular and increasingly prone to abuse. In the same line of reasoning, in 2014 the government promulgated Temporary Provisions (2014-2016) on Labor Dispatch that contained even more restrictive regulations while requesting a plan from employers to limit labor dispatch workers to only 10 percent of the total number of employees (Dezan Shira and Associates, 2016). These regulations limited the share of workers that a company could hire through Labor Dispatch Agencies (TWAs) and allowed foreign companies to hire their workforce directly (Dezan Shira and Associates, 2013). The amendment intended to strengthen enforcement and accountability by also increasing the registered capital of the agencies, and by imposing stricter penalties for violations. The Labor Contract Law stated that dispatched workers could “generally” be hired for supplementary, ancillary and temporary positions. In the 2013 amendment the word “generally” was deleted. Now, dispatch work can only be hired under the circumstances described above. If estimated again, these changes would elevate the score of the EPL Index for China showing stricter regulation concerning TWAs than before the amendment.

In comparison to OECD countries, the EPL Index shows that China has the strictest regulation concerning individual dismissal of permanent workers since, regardless of tenure, severance pay is relatively high and under unfair dismissal, workers could request reinternment or compensation equal to twice the amount of severance pay he would have been entitled to. China has a strict definition of collective dismissal. Special provisions for collective dismissal start apply for personnel reductions of at least 20 workers or 10% of the workforce, whichever is smaller. Furthermore, there are specific circumstances that allow employers to dismiss this number of workers. There are no many additional provisions for collective dismissals since workers are

entitled to their individual dismissal benefits. Regulation of temporary forms of employment (fixed-term contracts and TWAs) is more flexible than in most OECD countries.

A World Bank study (Packard and Nguyen, 2014) used a different methodology (version 2 of the OECD EPL Index) to compare employment protection legislation in the ASEAN countries plus China and Mongolia, which are not members of the organization. Some of the study's findings are relevant to our analysis. For example, the authors found that while many high and middle-income countries around the world had relaxed their employment protection regulations between the early 90s and 2013, the dominant tendency until 2012 in ASEAN countries was to make no changes or to make them more restrictive; as it is the case of the 2008 Labor Contract Law. The study also reveals significant variations on the strictness of the law, with Malaysia and Singapore being the least restrictive and China, Indonesia, The Philippines, and Vietnam being the most restrictive. Regarding the dismissal of permanent workers, Lao and China were the countries with the most restrictive regulations. These results are similar to what the analysis of this section reveals when comparing China with the large countries that as of 2017 were members of the OECD. This section evidence differences in the strictness of employment protection legislation between permanent and temporary jobs in China. Already in 2004, OECD raised concerns about the impact that these differences could have in the composition of the job market since these differences are considered an important factor behind the increase incidence of temporary work for low-skilled and young people in many OECD countries (OECD 2004, p.3). The same effect has been reported in China. As Chapter 3 of this publication denotes, to the strictness of the labor law with respect to permanent positions in China, firms have responded strategically to minimize its impact. It is mentioned that there have been reports of firms firing and then rehiring the same workers, to keep them from obtaining the right to open-ended contracts. This is a way firms could obtain the flexibility that they need to compete in global markets. Hence, the current legislation has significant implications if China is thinking to adopt a more comprehensive approach to employment protection legislation. On the one hand, temporary work weakens job attachment and has detrimental effects on training and human capital formation since neither employers nor employees perceive the long-term benefits of investing resources in develop job related skills. On the other hand, temporary work calls for an efficient unemployment benefit program to cope with personal income fluctuations that are associated with this type of employment.

#### 4. Legal and Economic Implications of China's Employment Protection Legislation

Our analysis of the strictness of China's employment protection legislation does not by itself provide evidence of how strict it is in practice. If the law cannot be enforced or the government is incapable of enforcing the law, then the strictest theoretical regulation becomes flexible in practice. Likewise, when the law is not adequately enforced, workplace abuses are frequent, and workers have to resort to legal actions to claim their rights. Hence, the cost of labor market transactions becomes high. As North (1993, p. 248) states, "When it is costly to transact then institutions matter." Transaction costs in China's labor market are higher than they ought to be due to asymmetric information and to informality. It is costly to transact not only for the employer but also for employees and the entire society. North explains the importance of labor institutions' effectiveness by stating that if institutions are the rules of the game, organizations are the players,<sup>57</sup> and in any society, the organizations that come into existence will reflect the opportunities provided by the institutional framework. In this respect, North (1993) affirms that, if an institutional framework rewards piracy, then piratical organizations will come into existence. On the other hand, if an institutional framework rewards productive activity, then organizations – in this case, firms and job seekers – will come into existence and engage in productive activities.

Although contracts are mandatory after one month of employment, penalties are high, and the proportion of workers with labor contracts has increased, data in Chapter 8 of this publication shows that in China there is still a large proportion of workers that are employed without contract. Hence, China's institutional framework rewards informal employment -without the mandatory contract-and no compliance with the law. Some employers know they can get away with not offering formal employment and full benefits because governance is limited, corruption is widespread, and informal constraints such as customs, traditions, and codes of conduct take precedence over formal institutions. It is under this context that this section analyses how China is doing concerning governance indicators.

Governance can be understood as "the process through which state and non-state actors interact to design and implement policies within a given set of formal and informal rules that shape and are shaped by power; that is, by the ability of groups and individuals to make others act in the interest of those groups and persons and to bring about specific outcomes" (World Bank, 2017 p.3). In other words, governance has to do with institutions that are

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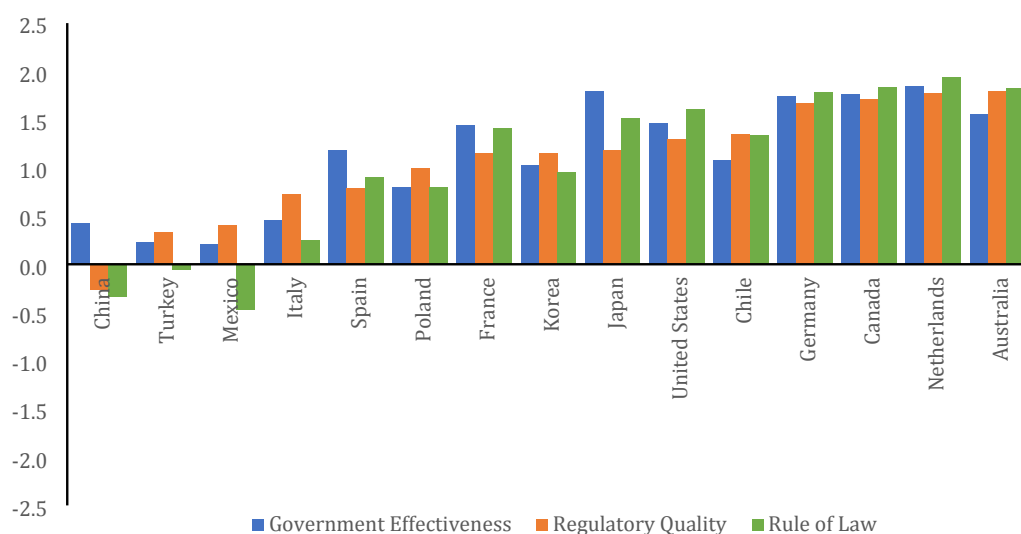
<sup>57</sup> In any society, organizations include political bodies (such as political parties, Parliament, and regulatory bodies), economic bodies (such as firms, trade unions, and family farms), social bodies (such as churches and clubs), and educational bodies (such as schools and universities).



“the condoned structures, norms, and agreed procedures by which interested parties exert their influence and make and carry out decisions that shape regulations and interventions” (World Bank, 2013, p. 123).

As explained in Section 2, to illustrate where China stands on governance, we used three worldwide governance indicators from the World Bank governance database: *government effectiveness*, *regulatory quality*, and *the rule of law*. In the database, the World Bank ranked countries on these three indicators from a low of -2.5, which signals weak government performance, to a high of 2.5, which signals strong government performance. 2015 data shows that compared to larger OECD countries, China is not doing well on any of these indicators of governance. It performs slightly better on the government effectiveness metric than on regulatory quality or the rule of law. Nevertheless, all three values are low or even negatives, which indicates weak performance. Compared to the other OECD countries in the sample, China rates last in regulatory quality and second to last in the rule of law, both negative values. On government effectiveness, China’s value is positive but small, surpassing only Mexico, Turkey, and Italy. There are vast differences between the Chinese values and those of the countries that are doing relatively well regarding governance (Figure 7.27).

**Figure 7.28: Worldwide Governance Indicators, 2015**

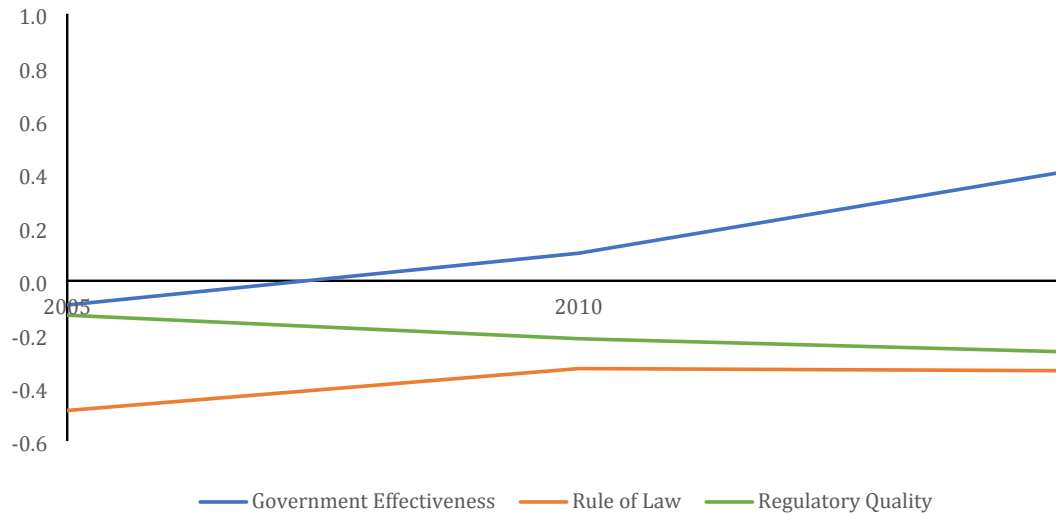


*Source:* Author’s calculations based on World Bank Worldwide Governance Indicators

Between 2005 and 2015, China made some progress on the government effectiveness indicator but little progress on the rule of law. Its performance on the regulatory quality metric declined. This, of course, is a concern not only because it raises concerns about the implementation of employment protection regulations but also because of the government’s intention to intensify China’s transition to a market-oriented model characterized by

foreign investment and local small- and medium-size enterprises. Good governance and stability are of the utmost importance to entrepreneurs looking for investment opportunities (Figure 7.28).

**Figure 7.29: Governance Indicators for China, 2005-2015**



Source: Author's calculations based on World Bank: Worldwide Governance Indicators

Although these macro data indicate that China has made little progress on governability indicators, Chapter 8 shows that, with the Labor Contract Law, the proportion of workers with labor contracts increased and the number of labor disputes also increased significantly between 2010 and 2016. This is a good sign for employment protection since it means that workers are now more aware of their rights. Nevertheless, although the situation is improving, reports of workplace abuses and poor labor conditions continue as Chapter 3 of this volume describes. The government needs to give a high priority to solving these problems since labor disputes and strikes are costly for employers, employees, and society as a whole.

In China, it is the responsibility of local governments to enforce labor laws. They are currently actively working on making employees more aware of the provisions of the law and on improving enforcement. Nevertheless, there is still much room for improvement as results have varied. One of the areas in which the government of China is trying to improve in order to better enforce the law is labor inspection.

Given this scenario in order to plan for the future, the government of China could consider the recommendations of the International Labor Organization (ILO) that places the role of labor inspections above the detection of labor law infractions. As Box 7.1 summarizes, ILO recommends a broad approach that includes preventive measures, education, and advice to improve the effectiveness of labor inspections.

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**Box 7.1: ILO Guidelines for Effective Labor Inspections**

The International Labor Organization (ILO) defines the role of labor inspections as twofold: (i) supervising the enforcement of legal provisions, particularly regarding workers' rights and (ii) providing information, advice, and training to employers and workers.

***The ILO recommends that labor inspections should be:***

- Organized as a system applying to all workplaces where the law relating to conditions of work and the protection of workers is enforceable.
- Placed under the supervision and control of a central authority so far as is compatible with the administrative practice of the country.
- Capable of carrying out both their educational and enforcement functions in relation to conditions of work (such as hours of work, wages, safety, health and welfare, the employment of children and young persons and other connected matters) and to alerting the competent authorities of any defects or abuses not covered by existing relevant legal provisions.

***It also recommends that labor inspectors must be:***

- Public officials assured of the stability of their employment and independent of any changes of government and improper external influences.
- Recruited with the sole regard to their qualifications and adequately trained to perform their duties.
- Sufficient in number to secure the effective discharge of these duties.
- Adequately equipped with local offices and transport facilities and measurement material.
- Provided with proper credentials and legally empowered.
- Able to supply information and advice to employers and workers on how to comply with the law.

Inspections of workplaces should be carried out as often and as thoroughly as is necessary to ensure the effective application of the relevant laws. They should include adequate penalties for any violations of the legal provisions enforceable by labor inspectors and for any attempts to obstruct inspectors in the performance of their duties.

The labor inspection system can operate most effectively in cooperation with other government services and private institutions engaged in labor protection as well as with employers and workers and their organizations.

Source: Author based on ILO (2010).

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## 5. Summary

The analysis in this chapter shows that China's employment protection legislation is strict when it comes to individual and collective dismissals of permanent workers. However, the regulation of temporary forms of employment is more flexible.

For permanent workers, China's labor protection regulation is relatively flexible regarding the length of notice period before dismissal for workers with tenure of four years and 20 years, and on the duration of the trial (probation) period. Nonetheless, the analysis shows that for all the other indicators of individual dismissal, China's regulations are stricter than in most large OECD. It is costly to dismiss a permanent worker in China. Workers severance pay is higher than in other countries. Furthermore, when workers are found to have been unfairly dismissed, the legislation mandates that they are reinstated or be given compensation equivalent to two times their severance pay.

China has some of the strictest rules regarding the definition of collective dismissal of workers since special provisions apply for personnel reductions of at least 20 workers or 10% of the workforce, whichever is smaller. Furthermore, only when a business is restructuring due to bankruptcy, having difficulties with its production and operations, or switching a production line, for example, it is allowed to make collective dismissals. However, since the additional provisions are supplemental to the provisions any worker is entitled under individual dismissal, the law is relatively flexible. The only additional requirement of firms is that thirty days in advance they should notify the labor union or the workers of pending collective dismissal and report the personnel cutback plan to the local labor bureau of the Ministry of Human Resources and Social Security.

Both fixed-term contracts (FTCs) and temporary work agency (TWA) employment are common in China. Since regulations that govern such employment are more flexible than regulations about workers with an open-ended (permanent) contract. This has been an incentive to offer FTCs instead of permanent positions affecting not only some workers' benefits that depend on tenure. Temporary work also has effects on training, human capital development, and family income fluctuation. Aspects that the government of China should take into account when planning for the future of the labor market.

China's employment protection legislation does not by itself provide evidence of how strict it is in practice. If the law cannot be enforced or the government is incapable of enforcing the law, then the most stringent theoretical regulation becomes flexible in practice. The analysis of three governance indicators, government effectiveness, regulatory quality, and, the rule of law indicates that compared to OECD countries, China has difficulties enforcing laws. This is an important element in explaining the existence of a

significant proportion of the labor force that is employed without a contract in China when it is mandatory and penalties are high.

All these findings on employment protection regulation should be taking into account when planning for the future of the labor market in China. What the country needs is to adapt to the worldwide changing nature of work with a comprehensive approach that offers market flexibility to employers and an efficient social protection system to workers. Enforcing regulation should go hand in hand with efficient unemployment and human capital formation programs.

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## ANNEX

### TABLE A.1

#### ILO. - Indicators of Individual Dismissal of Workers with regular Contracts

| <i>Area</i>                  | <i>Indicators</i>                                       | <i>Weight</i> |
|------------------------------|---|---------------|
| 1.- Substantive requirements | 1. Valid Grounds for dismissals                         | (1/9)         |
|                              | 2 Prohibited Grounds for dismissals                     | (1/9)         |
| 2.- Probationary Period      | 3 Maximum Probationary Period (trial) period            | (1/9)         |
| 3.-Procedural Requirements   | 4.-Procedural notifications requirements for dismissals | (1/9)         |
|                              | 5.- Notice periods (average across tenures)             | (1/9)         |
| 4.- Severance and Redundancy | 6.- Severance pay (average across tenures)              | (1/9)         |
|                              | 7.-Redundancy pay (average across tenures)              | (1/9)         |
| 5.-Redress                   | 8.-Redress  | (2/9)*        |

Source: ILO (2015) p.41



**TABLE A.2**
**2016 Doing Business Report. - Labor Market Regulation Indicators**

| <i>GROUPS</i>                 | <i>INDICATORS</i>   |
|-------------------------------|---|
| I. Difficulty of hiring       | 1. Fixed-term contracts prohibited for permanent tasks?<br>2. Maximum length of a single fixed-term contracts (months)<br>3. Maximum cumulative duration (including renewals) of fixed-term contracts (months)<br>4. Minimum wage for a cashier, age 19, with 1 year of work experience (US\$/month)<br>5. Ratio of minimum wage to value added per worker (value added = GNI per capita to the working-age population as a percentage of total population).<br>6. Are there incentives (tax incentives, lower minimum wage for youth allowed etc.) for employing workers under the age of 25? (NEW)  |
| II. Rigidity of Hours         | 7. Hours in a standard work day<br>8. Maximum number of days allowed in the workweek for permanent employees in the food retail industry<br>9. Premium for night work (% of hourly pay)<br>10. Premium for work on weekly rest day (% of hourly pay)<br>11. Premium for overtime work (% of hourly pay) (NEW)<br>12. Are there restrictions on night work? (NEW)<br>13. Non-pregnant and non-nursing women permitted to work same night hours as men? (NEW)<br>14. Are there restrictions on weekly holiday work?<br>15. Are there restrictions on overtime work?<br>16. Paid annual leave for a worker with 1 year of tenure (working days)<br>17. Paid annual leave for a worker with 5 years of tenure (working days)<br>18. Paid annual leave for a worker with 10 years of tenure (working days) |
| III. Difficulty of Redundancy | 19. Maximum length of probationary period (months)<br>20. Is dismissal due to redundancy allowed by law?<br>21. Third-party notification if one worker is dismissed?<br>22. Third-party approval if one worker is dismissed?<br>23. Third-party notification if nine workers are dismissed?<br>24. Third-party approval if nine workers are dismissed?<br>25. The law requires the employer to reassign or retrain a worker before making him redundant?<br>26. Priority rules for redundancy?<br>27. Priority rules for reemployment?  |

| <i>GROUPS</i>   | <i>INDICATORS</i>   |
|---|---|
| IV. Redundancy Cost<br>(in weeks of salary)               | 28. Notice period for redundancy dismissal for a worker with 1 year of tenure (salary in weeks)   |
|   | 29. Notice period for redundancy dismissal for a worker with 5 years of tenure (salary in weeks)  |
|   | 30. Notice period for redundancy dismissal for a worker with 10 years of tenure (salary in weeks) |
|   | 31. What is the formula for calculating notice period for redundancy dismissal (salary in weeks)  |
|   | 32. Severance pay for redundancy dismissal for a worker with 1 year of tenure (salary in weeks)   |
|   | 33. Severance pay for redundancy dismissal for a worker with 5 years of tenure (salary in weeks)  |
|   | 34. Severance pay for redundancy dismissal for a worker with 10 years of tenure (salary in weeks) |
|   | 35. What is the formula for calculating severance pay for redundancy dismissal (salary in weeks)  |
| V. Social Protection and Labor Disputes (all of them NEW) | 36. Equal remuneration for work of equal value?   |
|   | 37. Gender non-discrimination in hiring?  |
|   | 38. Paid or unpaid maternity leave mandated by law?   |
|   | 39. Minimum length of maternity leave (calendar days)   |
|   | 40. Receive 100% of wages on maternity leave?   |
|   | 41. Five fully paid days of sick leave a year?  |
|   | 42. On-the-job training at no cost to employee?   |
|   | 43. Unemployment protection after 1 year of employment?   |
|   | 44. Minimum contribution period for unemployment protection (months)                              |
|   | 45. Can employee create or join a union?  |
|   | 46. Administrative or judicial infringement of relief for infringement of employee's rights?      |
|   | 47. Labor inspection system?  |

Source: World Bank (2016)

# Implementation of Employment Protection Legislation

Meiyan Wang and Peng Jia

## 1. Introduction

The impact of China's Labor Contract Law on the Chinese labor market is one of the most debated issues in China's economic community. Supporters of the law believe that it may help to safeguard workers' legitimate rights. In fact, some researchers argue that the protection given to workers is so extensive that the law should be modified to increase labor market flexibility (Xie, 2017). This argument is based on the fact that the law makes it more difficult for firms to fire workers, while also increasing their labor costs and decreasing their labor market flexibility. As a result, some researchers argue that the law is not helpful for boosting employment and maintaining economic growth. They worry that some of its provisions, such as that on the open-ended labor contract, may have overprotected workers. They also argue that the Labor Contract Law will increase firms' labor costs, which in turn would decrease firms' competitiveness in the international context.

The Labor Contract Law is the most important employment legislation in China. The law was adopted by the Standing Committee of the National People's Congress and went into effect on January 1, 2008. It was formulated to improve the labor contract system, to specify the rights and obligations of the parties to labor contracts, to protect the lawful rights and interests of employees, and to build and develop harmonious and stable labor relationships.

Unlike in countries where labor markets are relatively stable, the Chinese labor market has undergone significant changes in recent years, having reached the Lewis turning point, which is defined by a transition from unlimited labor supply to a labor shortage and sustained wage increases for unskilled workers. From the perspective of seeking to implement productive and effective policies, any evaluation of the law should focus not only on whether it has fulfilled its legislative purpose but also on its impact on companies and different groups of workers.

As discussed in Chapter 3, both domestic and international scholars have done extensive studies on the implementation of the Labor Contract Law. Building on this existing literature, in this chapter we describe the observed changes in key labor market indicators that occurred before and after the Labor Contract Law took into effect using detailed information from the China Urban Labor Survey (CULS) and China Employer-Employee Survey (CEES).

The remainder of this chapter is organized as follows. Section 2 briefly introduces the data used in this chapter. Section 3 investigates trends in the issuing of labor contracts and the determinants of whether a worker is or is not offered a labor contract. Then, in Chapter 4 we explore the impact of the Labor Contract Law on workers' social insurance coverage, and this is followed in Section 5 by a discussion of the determinants of labor disputes. In Section 6, we study the impact of the Labor Contract Law on firms' labor costs. Finally, in Section 8, we present our conclusions and discuss the policy implications of our findings.

## **2. Data**

The analysis in this chapter is based on data from four waves of the China Urban Labor Survey (CULS1 in 2001, CULS2 in 2005, CULS3 in 2010, and CULS4 in 2016) and two waves of the China Employer-Employee Survey (CEES) in 2015 and 2016. We also used some key macroeconomic indicators from other sources.

### **China Urban Labor Survey**

The four waves of the CULS collected detailed information on households and household members. The information on households included responses on housing, household income, and household consumption, while the information on household members included their demographic and education characteristics, employment, labor contracts, wages, and social insurance.

The CULS exists as a result of the efforts made by Chinese researchers to expand and improve household survey data. At the end of 2001, a group of researchers (including the authors of this chapter) from the Institute of Population and Labor Economics (IPLE) at the Chinese Academy of Social Sciences (CASS) conducted the first wave of the China Urban Labor Survey (CULS 1) in five cities: Shanghai, Wuhan, Shenyang, Fuzhou, and Xi'an. Using a stratified sample method, in each city, we selected 700 urban households in 70 communities as well as and 600 rural migrants. In 2005 in the second wave (CULS2), seven additional cities (Baoji, Benxi, Daqing, Shenzhen, Wuxi, Yichang, and Zhuhai) were added to those surveyed in 2001. Continuing to use a stratified random sampling method, we sampled 500 urban households and 500 migrant households in Shanghai, Wuhan,

Shenyang, Fuzhou, and Xi'an (the five original cities) and 400 migrant households in the seven new cities. The third wave of data collection (CULS3) was conducted between the end of 2009 and the beginning of 2010 and covered Guangzhou and the five cities that were surveyed in both CULS1 and CULS2. In each city, we sampled 700 urban households and 600 migrant households.

In 2016, the fourth wave of data collection (CULS4) was carried out in Shanghai, Wuhan, Shenyang, Fuzhou, Xi'an, and Guangzhou. We used a two-stage sampling method in this survey. In the first stage, we sampled communities. In Shanghai, Wuhan, Fuzhou, and Guangzhou, communities were sampled using the probability proportional to size (PPS) method (proportional to the residential population in each community), while in Shenyang and Xi'an, communities were sampled using a stratified PPS method. In the second step, we sampled households in the selected communities. In Shanghai and Guangzhou, the target sample size was 1,200 households (700 local households and 500 migrant households), while in the other four cities, the target sample size was 1,000 households (600 local households and 400 migrant households).<sup>58</sup>

### **China Employer-Employee Survey**

The China Employer-Employee Survey (CEES) was co-sponsored by the Institute of Population and Labor Economics, Wuhan University, Stanford University, and the Hong Kong University of Science and Technology. It was the first employer-employee matching survey to be successfully conducted in mainland China. The CEES team conducted the pilot survey in 2015 in Guangdong. In 2016, the survey was expanded to include Hubei and re-interviewed the firms and workers in Guangdong who had been interviewed in 2015. The sample frame was based on the list of manufacturing firms compiled from the third wave of the China Economic Census in 2013. The sample frame was also dynamically adjusted using information from the local Administration of Industry and Commerce and local Administration of Quality and Technology Supervision.

The survey used a three-stage sampling method. In the first stage, 19 and 20 counties (or districts) were selected in Guangdong and Hubei respectively using the PPS method (proportional to county-level or district-level manufacturing employment). Then in the second stage, 50 firms were selected in each county (or district) using the PPS method (proportional to firm employment). The interviewers were then asked to pay a field visit

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<sup>58</sup> First, we asked local officials to prepare lists of all buildings in each selected community, and then we randomly selected three to five buildings from each community using the systematic sampling method. Then we asked interviewers to prepare lists of all of the households living in the selected buildings. Finally, we randomly selected 20 to 25 households in each community using the systematic sampling method.

to each of the 50 selected firms and then prepare a list of the first 36 firms whose existence could be verified by the field visit. In the third stage, two to three medium- and high-level managers and four to seven other types of workers (including production workers, technicians, and sales people) were randomly selected in each firm using the systematic sampling method. In the 2015 survey, we interviewed 573 firms and 4,838 employees in Guangdong. In the 2016 survey, we surveyed 585 firms and 4,114 employees in Hubei and 537 firms and 4,989 employees in Guangdong (of the 2016 Guangdong sample, 487 of the firms and 2,575 of the employees had been interviewed in 2015). The CEES firms' questionnaire included questions about the firms' basic information, production, sales, technology innovation, and human resources. The employees' questionnaire, besides the questions that typically appeared in a labor survey, asked questions about the type of labor contracts held by the employees. types Changes in Labor Contract Signing and Their Determinants

### **3. Changes in Labor Contract Signing and Their Determinants**

In this section, we attempt to answer two questions using data from the four waves of the CULS. First, what has been the trend in the rate of labor contract signing before and after the implementation of the Labor Contract Law? And second, what changes in key labor market indicators have been observed since the law came into effect? In particular, the 2010 and 2016 CULS include information on labor contract types, which allowed us to examine the characteristics of firms and workers with different types of labor contracts.

#### **3.1. Trends in Labor Contract Incidence**

The proportion of urban workers with a labor contract in compliance with the Labor Contract Law has increased in the last 15 years. Table 8.1 shows the proportion of workers who had a labor contract, by gender and by migrant and local (in other words, non-migrant) workers in 2001, 2005, 2010, and 2016.<sup>59</sup> A few interesting findings emerge. First, the increase in the prevalence of labor contracts has been much higher among migrant workers than local workers. The proportion of migrant workers rose from 31.95 percent in 2001 to 77.45 percent in 2016, an increase of 46 percentage points. Meanwhile, the proportion for local workers rose from 74.06 percent in 2001 to 82.22 percent in 2016, an increase of 8 percentage points. Second, the rise in the proportion of both migrant and local workers who have a labor contract has increased since the implementation of the Labor Contract Law. From 2001 to 2005, the proportion of migrant workers with a labor contract increased by 5 percentage points, whereas it decreased slightly among

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<sup>59</sup> Throughout this section, "workers" refers to wage workers aged between 16 and 60 years old.

local workers. However, between 2005 and 2016, the proportions of both migrant and local workers with labor contracts increased substantially – by 41 percentage points among migrant workers and by 9 percentage points among local workers.

**Table 8.1: Proportion of Workers with a Labor Contract, 2001 to 2016**

| Year | Migrant Workers |        |       | Local Workers |        |       |
|------|-----------------|--------|-------|---------------|--------|-------|
|      | Male            | Female | Total | Male          | Female | Total |
| 2001 | 34.52           | 28.19  | 31.95 | 77.23         | 69.76  | 74.06 |
| 2005 | 39.15           | 33.19  | 36.85 | 76.37         | 68.90  | 73.14 |
| 2010 | 60.44           | 59.01  | 59.76 | 81.24         | 78.78  | 80.20 |
| 2016 | 77.41           | 77.49  | 77.45 | 81.93         | 82.62  | 82.22 |

*Source:* Authors' calculations based on data from CULS1, CULS2, CULS3, and CULS4.

*Note:* The table uses data from five cities (Shanghai, Wuhan, Shenyang, Fuzhou, Xi'an, and Guangzhou) for a direct comparison among the four waves of the CULS; see the main text for details.

Third, the incidence of labor contracts varied between men and women. The proportion of both migrant and local workers with a labor contract was higher among males than females in 2001, 2005, and 2010. However, the gap shrank to the extent that the pattern was reversed in 2016 when the proportion of female workers with a labor contract was slightly higher than the proportion of males for the first time. Fourth, the proportion of workers with a labor contract was lower among migrant workers than among local workers, although the gap in the proportions did gradually shrink. The gap was 42 percentage points in 2001, 36 percentage points in 2005, 20 percentage points in 2010, and finally decreased to only 5 percentage points in 2016.

### 3.2. Labor Contract Types

According to the Labor Contract Law, labor contracts can be divided into four types: (i) open-ended labor contracts; (ii) fixed-term labor contracts; (iii) labor contracts to expire after the completion of a certain job; and (iv) labor dispatch contracts. Both the 2010 and the 2016 CULS include information on each type of labor contract as summarized in Table 8.2.

**Table 8.2: Distribution of Types of Labor Contracts, 2010 and 2016**

| Labor Contract Types                                       | Migrant Workers |       | Local Workers |       |
|--|-----------------|-------|---------------|-------|
|  | 2010            | 2016  | 2010          | 2016  |
| Open-ended labor contract                                  | 15.62           | 23.11 | 39.33         | 34.06 |
| Fixed-term labor contract                                  | 81.63           | 75.43 | 59.11         | 64.32 |
| Labor contract to expire after completion of a certain job | 1.47            | 0.90  | 1.09          | 0.44  |
| Labor dispatch contract                                    | 1.28            | 0.57  | 0.46          | 1.19  |
| Total  | 100             | 100   | 100           | 100   |

*Source:* Authors' calculations, based on data from CULS3 and CULS4.

*Note:* The analysis uses data in six cities (Shanghai, Wuhan, Shenyang, Fuzhou, Xi'an, and Guangzhou).

There are two interesting facts to notice. First, open-ended labor contracts and fixed-term labor contracts are the most prevalent types of contracts among all types of workers. The proportion of migrant workers who have either open-ended or fixed-term labor contracts totaled 97 percent in 2010 and 99 percent in 2016, while the equivalent proportions for local workers were 98 percent in both years. Second, while the proportion of urban workers with open-ended contracts was always higher than among migrant workers, the latter group has been catching up. Between 2010 and 2016, while the proportion of migrant workers with open-ended labor contracts increased by 7 percentage points, the proportion of local workers with open-ended contracts decreased by 5 percentage points.

### 3.3. Duration of Labor Contracts

For those workers who did not have an open-ended contract, we investigated the duration of their labor contracts. Table 8.3 presents data on the duration of the contracts of those workers with fixed-term or labor dispatch contracts<sup>60</sup> or contracts that expired after the completion of a certain job. In this regard, we made three important findings. First, between 2010 and 2016, the proportion of both migrant workers and local workers with contracts lasting one year or less increased slightly and the proportion of those with contracts between one and three years decreased significantly, while the proportion with contracts of three years or more increased by 48 percentage points among migrant workers and by 30 points among local workers.

Second, more than 60 percent of migrant workers had labor contracts of one to three years in 2010, but by 2016, 65 percent had contracts of three years or more. For local workers, the proportion of workers with contracts of one to three years and of those with contracts of three years or more were very similar at more than 40 percent in 2010, whereas by 2016, 71 percent of these workers had contracts of three years or more. Third, in 2016, the proportion of workers with contracts of one year or less and the proportion with contracts of one to three years were higher among migrant workers than among local workers. However, the proportion of workers with contracts of three years or more was 6 percentage points lower among migrant workers than among local workers.

**Table 8.3: Distribution of Labor Contracts by Term Length, 2010 and 2016**

| <i>Labor Contract Term</i> | <i>Migrant Workers (%)</i> |       | <i>Local Workers (%)</i> |       |
|----------------------------|----------------------------|-------|--------------------------|-------|
|                            | 2010                       | 2016  | 2010                     | 2016  |
| One year or less           | 21.74                      | 22.02 | 14.68                    | 18.24 |
| One to three years         | 60.72                      | 12.75 | 44.03                    | 10.47 |
| Three years and more       | 17.54                      | 65.23 | 41.29                    | 71.29 |

*Source:* Authors' calculations based on data from CULS3 and CULS4.

*Note:* The analysis uses data from six cities (Shanghai, Wuhan, Shenyang, Fuzhou, Xi'an and Guangzhou).

<sup>60</sup> A labor dispatch contract refers to the use by firms of temporary workers acquired through third party employment agencies.



### 3.4 Wage Differences Associated with Having a Labor Contract

Wages increased during the whole period for all categories of workers. Table 8.4 shows hourly wages for migrant and local workers with labor contracts and those without. For both migrant workers and local workers, the hourly wage increased steadily from 2001 for workers both with and without a labor contract. Between 2001 and 2016, the average hourly wage for migrant workers with a labor contract rose from 5.92 yuan to 37.24 yuan, an annual growth rate of 13.0 percent. Among migrant workers with no labor contract, the hourly wage rose from 3.17 yuan to 20.23 yuan, an annual growth rate of 13.2 percent. For local workers during the same period, the hourly wage for those with a labor contract rose from 6.93 yuan to 32.69 yuan, an annual growth rate of 10.9 percent, and for those with no labor contract, the hourly wage rose from 4.24 yuan to 20.08 yuan, an annual growth rate of 10.9 percent. The growth rates in hourly wages for migrant workers were higher than those for local workers.

Moreover, the labor contract premium varied over time in all categories of workers. During the period from 2001 to 2016, the wage gap between workers with a contract and those without first grew wider and then shrank. In 2016, among migrant workers, the hourly wage of those workers with a contract was 84.1 percent higher than the hourly wage of those without one, and among local workers, the hourly wage of those with a contract was 62.8 percent higher than the wage of those without one. Table 8.4 also compares the monthly wages of workers with a labor contract and those without. We found two similarities with the hourly wage findings. First, for both migrant workers and local workers, their monthly wage increased steadily regardless of their labor contract status. Second, for both migrant workers and local workers, their monthly wage was significantly higher for those with a contract than for those without one, and this was true in all four years. However, there was a key difference between the monthly and hourly wage patterns. Migrant workers appear to have worked more hours in better quality jobs.

**Table 8.4: Wages of Migrant and Local workers, 2001-2016**

| Year | Hourly Wage         |                   |                     |                   | Monthly Wage        |                   |                     |                   |
|------|---------------------|-------------------|---------------------|-------------------|---------------------|-------------------|---------------------|-------------------|
|      | Migrant Workers     |                   | Local Workers       |                   | Migrant Workers     |                   | Local Workers       |                   |
|      | With labor contract | No labor contract | With labor contract | No labor contract | With labor contract | No labor contract | With labor contract | No labor contract |
| 2001 | 5.92                | 3.17              | 6.93                | 4.24              | 1,170               | 773               | 1,210               | 766               |
| 2005 | 7.35                | 3.52              | 9.17                | 4.81              | 1,410               | 810               | 1,593               | 871               |
| 2010 | 15.94               | 8.35              | 15.57               | 7.68              | 2,894               | 1,858             | 2,714               | 1,458             |
| 2016 | 37.24               | 20.23             | 32.69               | 20.08             | 6,790               | 4,221             | 5,737               | 3,739             |

*Source:* Authors' calculations based on data from CULS1, CULS2, CULS3, and CULS4.

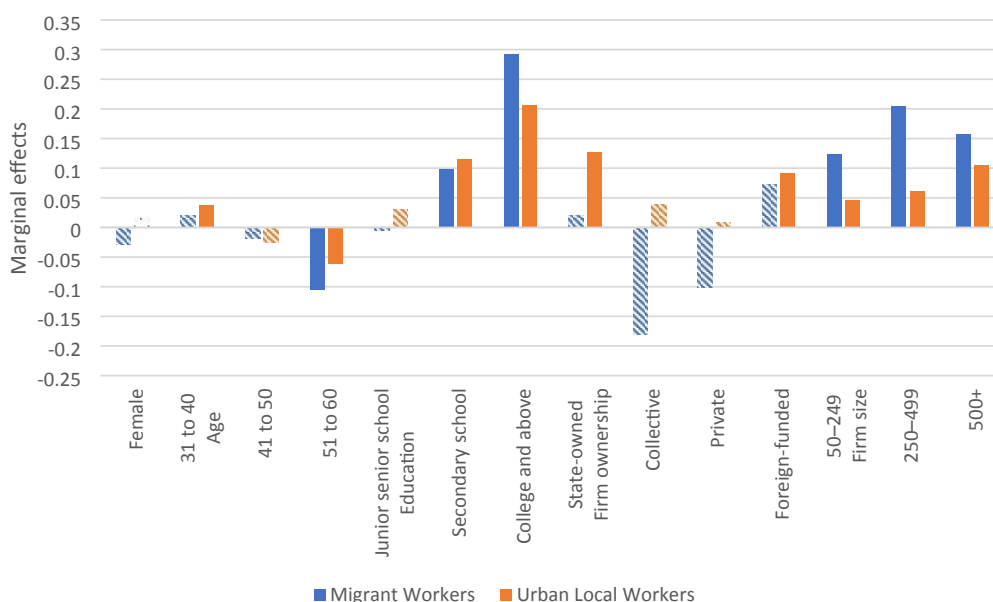
*Note:* Wages in Yuan. The table uses data on five cities (Shanghai, Wuhan, Shenyang, Fuzhou, and Xi'an) to compare workers among four waves of the CULS.

### 3.5. Factors Associated with Having a Labor Contract

To examine which factors are associated with having a labor contract, we conducted a regression analysis. We used logit regression models to explore the correlation between having a contract and individuals' and firms' characteristics for migrant and local workers separately. Specifically, we looked at the gender, age, and educational level of workers and the ownership, sector, and size of firms. The regression models controlled for city location. Figure 8.1 presents the main factors that we found to be associated with having a contract with respect to a reference group. Table 1 in Annex 8A explains the regression models in full and shows the detailed regression results.

Some interesting findings arose from this analysis. First, workers aged between 51 and 60 were less likely to have a labor contract than those aged between 16 and 30 all other factors being constant. Second, workers with a primary school education or less were less likely to have a labor contract than workers with senior high or technical secondary school and also than workers with a college degree or higher. In short, workers with higher educational levels were more likely to have a labor contract than those with less education. Third, workers at larger firms (those with more than 50 employees) had a higher probability of having a labor contract than those working for smaller firms. Finally, having a contract does not seem to vary significantly (in statistical terms) by gender or across economic activities (when using an industry classification at a one-digit level).

**Figure 8.1. Factors Associated with Having a Labor Contract**



Source: Authors.

Notes: The solid bars indicate variables that were statistically significant in the regression analysis, and the shaded bars are those that were not statistically significant. The variables were as follows: *contract* signifies whether a worker has a labor contract or not; *female* is a female dummy variable (male is the reference group); *age* is a group of age-group dummy variables (16-30 years old is the reference group); *edu* is a group of educational-level dummy variables (primary

school and below is the reference group); *ownership* is a group of ownership dummy variables (government agencies and institutions are the reference group); *sector* is a group of sector dummy variables (manufacturing is the reference group); *firmsize* is a group of firm-size dummy variables (less than 50 workers is the reference group); *city* is a group of city dummy variables (Shanghai is the reference group); and  $\varepsilon$  is the error term. The figure shows the marginal effects of the model 2 regression model as shown in Table 1 of Annex 8A.

#### 4. The Labor Contract Law and Social Insurance Coverage

As pointed out by Gallagher et al (2015), one of the most important benefits of signing a labor contract for workers is being able to participate in government-funded social security programs. The International Labor Organization (ILO) specifies participation in social insurance programs as a core criterion in defining formal employment. In this section, we investigate the association between signing a labor contract and accessing social insurance coverage. The 2008 Labor Contract Law applies mainly to enterprises, self-employed economic organizations, and private non-enterprise units. As a result, we focused only on firm employees and have excluded self-employed workers and workers employed by state agencies, institutions, and public organizations.<sup>61</sup> The 2010 and 2016 CULS include information on both local workers and migrant workers in urban areas. Migrant workers are specifically defined as rural-to-urban migrant workers, as urban-to-urban migrant workers are excluded. As for the social insurance programs, we considered only those programs that require firms to contribute and exclude any programs that apply only to people without jobs. Table 8.5 illustrates the relationship between signing a labor contract and having social insurance coverage. We drew several conclusions from these data. First, a larger proportion of local workers than rural-to-urban migrant workers were protected by labor contracts and were covered by social insurance programs. In 2010, 70 percent of local workers and 43 percent of migrant workers had signed labor contracts with their employers, and by 2016, these two percentages had increased to 81 and 63 percent respectively, with a much larger increase in coverage among migrant workers. Taking the basic pension program as an example, in 2010 its coverage of local workers was 3.13 times higher than its coverage of migrant workers, but by 2016, this gap had decreased to only 0.49 times. Other social insurance programs also showed the same trend.

Second, compared with not having labor contracts, signing labor contracts increased workers' social insurance coverage by 100 to 250 percent. For local workers, the increase was 60 to 200 percent, while for migrant workers, the increase was 240 to 820 percent. It is evident that signing a labor contract

<sup>61</sup> The 2008 Labor Contract Law also stipulates that "state organs, institutions, and public organizations and the workers with whom they are to establish labor relationships shall conclude, perform, modify, revoke, or terminate labor contracts in accordance with this Law." However, in practice, employees of state organs, institutions, and public organizations generally do not sign a formal labor contract with their employers. Moreover, they are generally covered by special social insurance programs (for example, the reimbursement of medical expenses even for those without medical insurance). As a result, we did not include these workers in our analysis.

is more likely to be associated with accessing to social insurance for migrant workers than for their local counterparts.

Third, regardless of whether or not they were protected by labor contracts, coverage of basic pension program and basic medical insurance among local workers did not change a lot between 2010 and 2016, whereas coverage of unemployment insurance and work-related injury insurance increased substantially. Among migrant workers, we found that coverage of all types of social insurance programs increased between 2010 and 2016 (except maternity insurance and housing fund, for which no data were available for 2010).

Fourth, despite the fact that the Social Insurance Law stipulates that employees should enroll in basic pension program, basic medical insurance, work-related injury insurance, unemployment insurance, and maternity insurance, the actual coverage of unemployment insurance, work-related injury insurance, and maternity insurance was much lower than the coverage of basic pension program and basic medical insurance. The coverage of the housing fund and enterprise annuities fund, which represents a higher level of social protection, was even lower.

**Table 8.5: Coverage of Labor Contracts and Social Insurance, 2010 and 2016**

| <i>Social Insurance</i>                 | <i>Labor Contract<sup>a</sup></i> | <i>2010</i>                |                |                 | <i>2016</i>                |                |                 |
|---|-----------------------------------|----------------------------|----------------|-----------------|----------------------------|----------------|-----------------|
|   |                                   | Local Workers <sup>b</sup> | Migrant Worker | Average (total) | Local Workers <sup>b</sup> | Migrant Worker | Average (total) |
| No. of observations <sup>c</sup>        | No                                | 1,111                      | 1,115          | 2,226           | 488                        | 446            | 934             |
|   | Yes                               | 2,591                      | 831            | 3,422           | 2,079                      | 758            | 2837            |
| Basic pension program (%)               | No                                | 57.99                      | 5.31           | 45.99           | 57.51                      | 21.98          | 45.09           |
|   | Yes                               | 94.68                      | 37.05          | 90.03           | 94.33                      | 75.44          | 90.54           |
| Basic medical insurance (%)             | No                                | 53.97                      | 5.41           | 42.91           | 54.38                      | 18.88          | 41.97           |
|   | Yes                               | 91.54                      | 35.47          | 87.04           | 93.11                      | 74.35          | 89.35           |
| Unemployment insurance (%)              | No                                | 27.28                      | 3.13           | 21.76           | 36.51                      | 14.80          | 28.92           |
|   | Yes                               | 69.62                      | 28.93          | 66.36           | 83.69                      | 64.14          | 79.77           |
| Work-related injury ins. (%)            | No                                | 19.65                      | 4.19           | 16.11           | 36.23                      | 16.31          | 29.27           |
|   | Yes                               | 56.50                      | 31.48          | 54.47           | 82.25                      | 67.97          | 79.38           |
| Maternity insurance <sup>d</sup> (%)    | No                                |                            |                |                 | 29.01                      | 11.38          | 22.85           |
|   | Yes                               |                            |                |                 | 74.71                      | 55.22          | 70.80           |
| Housing fund <sup>d</sup> (%)           | No                                |                            |                |                 | 25.92                      | 8.73           | 19.91           |
|   | Yes                               |                            |                |                 | 74.57                      | 51.56          | 69.96           |
| Enterp. annuities fund <sup>d</sup> (%) | No                                |                            |                |                 | 5.86                       | 1.62           | 4.38            |
|   | Yes                               |                            |                |                 | 17.32                      | 6.98           | 15.25           |

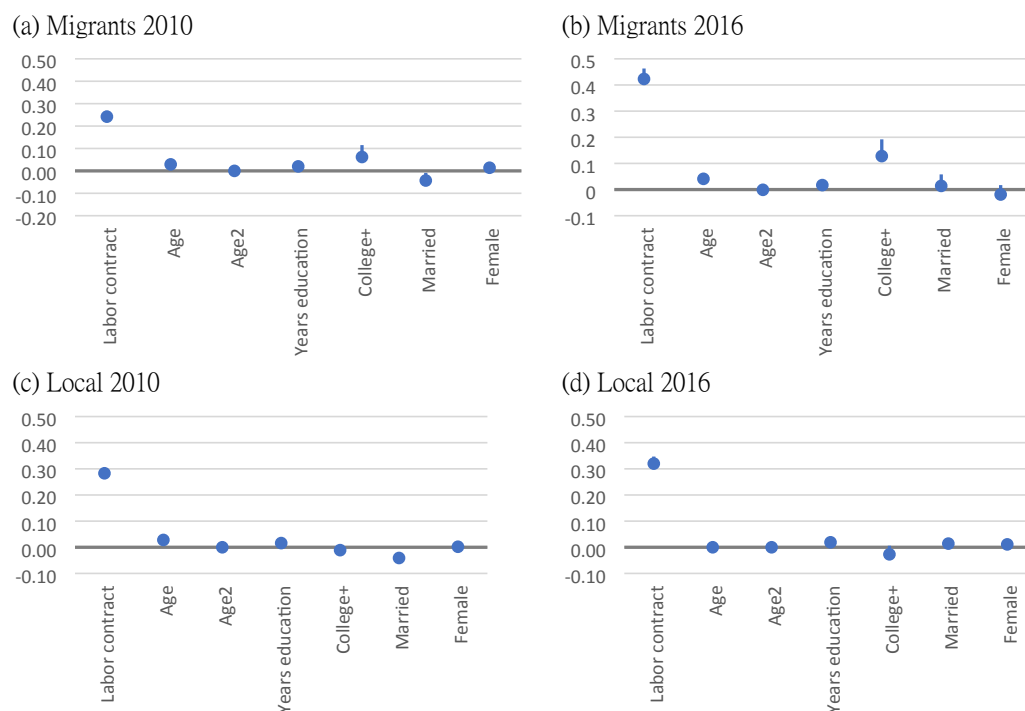
*Source:* Authors' calculations based on data from CULS 3 and CULS 4.

*Notes:* (a) Open-ended labor contracts, fixed-term labor contracts, labor contracts that expire after the completion of a certain job, and labor dispatch contracts were all considered valid contracts. (b) "Local workers" refer to workers who have a local *hukou*, while "migrant workers" refer to workers who work in the city but have an agricultural *hukou* in a different city. (c) Besides the two lines about observations, sample weights were used when calculating all other statistics. Only firm employees were included in the analysis. (d) The 2010 CULS did not ask questions about maternity insurance, the housing fund, and the enterprise annuities fund. The 2010 survey also asked questions on pension program and medical insurance, which apply only to migrant workers, but those workers only account for a small proportion of the whole sample and thus are not reported here.

To explore the relationship between the coverage of labor contracts and of social insurance coverage, we conducted an ordinary least squares (OLS) regression analysis to control for the effects of multiple variables. Figure 8.2 depicts the regression coefficient for the dependent variable that takes a value of one when the worker participated in a social insurance program and 0 otherwise. The core explanatory variable is whether an individual had signed a labor contract with his/her employer, and other explanatory variables include workers' characteristics (such as age, gender, education, and marital status) and firms' characteristics (such as industry and ownership type). Further details can be found in Annex 8A.

First, under all regression specifications signing a labor contract increased the likelihood of workers' participating in basic pension program and basic medical insurance by at least 20 percent. Second, the association was greater for local workers than for migrant workers in 2010, while in 2016, this was reversed as the Labor Contract Law had strengthened protections for migrant workers in labor contracts. Having a labor contract increased migrant workers' participation in basic pension program by 26.1 percent in 2010, while in 2016 it increased it by 44.4 percent. Even after industry and ownership-type variables were included in the regression, the positive effects of labor contracts remained significant. We observed the same effect with regard to basic medical insurance. These results are similar to the findings of Gallagher et al (2015).

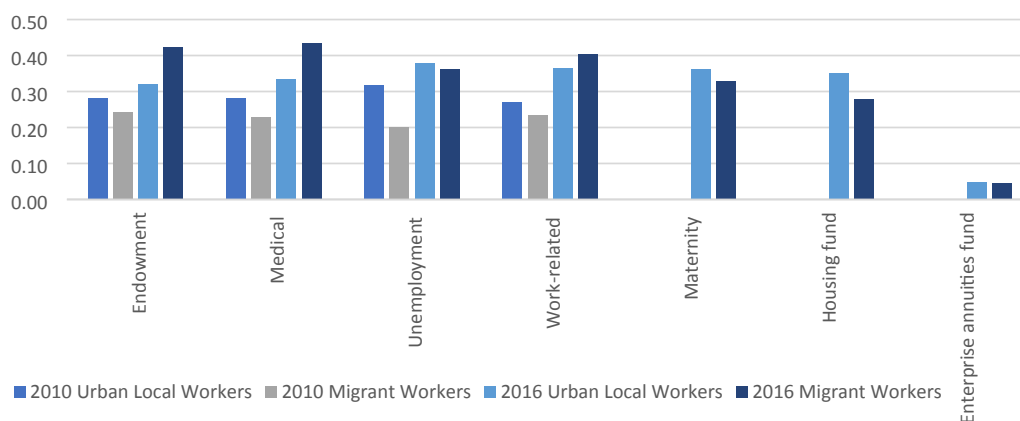
Third, the protective effect of a labor contract for migrant workers also lies in the fact that local workers may be enrolled in basic pension program and basic medical insurance even without a labor contract, whereas for migrant workers, signing a labor contract may be the only way they can be enrolled in social insurance. In Table 8.5 above, the labor contract signing rate for local workers was 70 percent and 81 percent in 2010 and 2016 respectively, while the social insurance coverage rate was much higher. Gallagher et al (2015) explains the mechanism behind this phenomenon. Gallagher et al. (2015) explains that it is possible that some workers, especially long-time employees, enjoy open-ended employment relationships that include social insurance benefits, but were never asked to sign a written contract, and it is also possible for an employer to register workers for local public social insurance schemes without formally presenting a signed contract.

**Figure 8.2: Participation of Migrant and Local Workers in Basic Pension Program, 2010 and 2016**

Source: Authors' calculations based on data from CULS3 and CULS4.

Notes: Linear probability models were used in all specifications. Robust standard errors are in parenthesis. \*\*\* =  $p < 0.01$ ; \*\* =  $p < 0.05$ ; \*  $p < 0.10$ . Corresponds to Table 8.7 in Annex 8A.

Studies of other social insurance programs (including housing benefits) have found similar results (Table 8.9 in Annex8A) There is one small difference in our results, however. In our regression for enterprise annuities funds, although the coefficient of the labor contract variable was positive and statistically significant, its value was much lower than that of the labor contract coefficients in other regressions. One key reason for this is that enterprise annuities funds are supplementary to the basic pension program and are not mandatory.

**Figure 8.3. Relationship between Having a Labor Contract and Participating in Social Insurance Programs**

*Source:* Authors' calculations based on data from CULS3 and CULS4.

*Note:* Results correspond with the labor contract coefficient in the tables in Annex 8.2. In all cases, it refers to model 2 including firm type of ownership. Linear probability models are used in all specifications, and only the coefficients on the labor contract variable are reported here. Robust standard errors are in parenthesis. The 2010 survey did not ask questions on maternity insurance, housing fund, or the enterprise annuities fund. \*\*\* =  $p < 0.01$ ; \*\* =  $p < 0.05$ ; \*  $p < 0.10$ .

## 5. Labor Disputes

In this section, we present our findings related to the basis situation and determinants of labor disputes in China. We first use administrative data to look at the aggregate trends in the number of labor disputes and reasons for labor disputes. We then use micro-survey data to look at the situation of labor disputes and examine the determinants of initiating a labor dispute.

According to the Labor Disputes Mediation and Arbitration Law passed in 2008, there are four ways to solve labor disputes: (i) consultation; (ii) mediation; (iii) arbitration; and (iv) litigation. Currently, there are two sources of labor dispute statistics. One is the annual statistical report on human resources and social security development, published by the Ministry of Human Resources and Social Security, which includes the number of labor dispute cases accepted by mediation and arbitration institutions. The other is the *China Labor Statistical Yearbook*, published jointly by the National Bureau of Statistics and the Ministry of Human Resources and Social Security, which includes information on labor dispute cases accepted by arbitration institutions as well as mediated cases, the major reasons for disputes, the common methods used to resolve them, and the outcomes.

### Trends in the Number of Disputes

Since the end of the 20th century, the number of labor dispute cases accepted and mediated by arbitration institutions has been increasing steadily, although there have been fluctuations (Figure 8.4). The number of labor dispute cases took a big jump in 2008, almost doubling over the 2007 total, since several labor-related laws were issued or updated that year. The number of cases fell slightly in 2009 and 2010 compared with the 2008 number, but since 2010, the number of cases has been gradually climbing. There were 1.287 million cases in 2010 and 1.497 million in 2013, and by 2016 the number had reached 1.771 million.<sup>62</sup> The trend in labor dispute incidence – which is measured as the number of labor disputes in proportion to the number of people in urban employment – is basically consistent with the trend in the number of labor disputes cases.

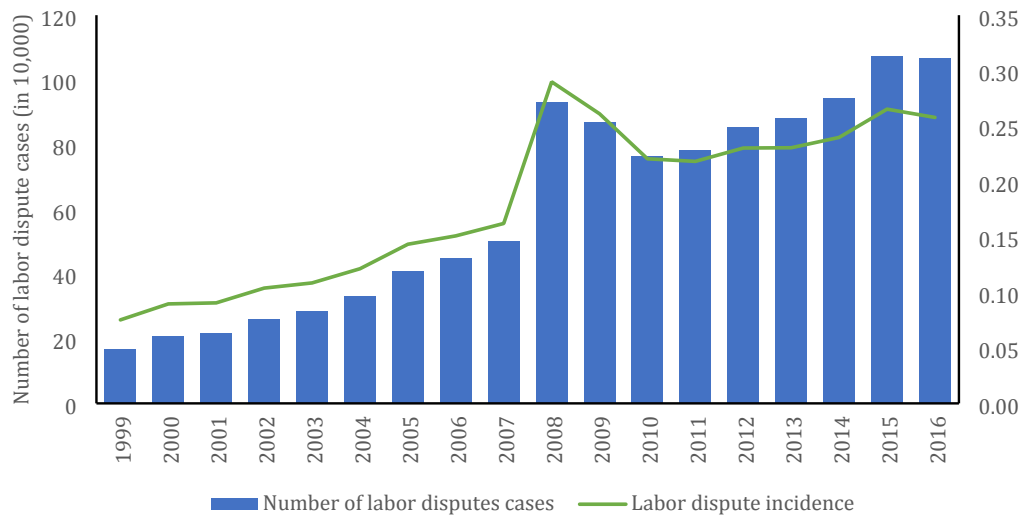
The sudden growth in the number of labor dispute cases in 2008 is likely related to the enforcement of the Labor Contract Law and the Labor Disputes Mediation and Arbitration Law. The Labor Contract Law improved

<sup>62</sup> These data come from the website of the Ministry of Human Resources and Social Security, <http://www.mohrss.gov.cn/SYrlzyhshbzb/zwgk/szrs/tjgb/>.

protection for workers' rights and interests to the extent that some scholars think the provisions for "open-ended" labor contracts in the Labor Contract Law are excessive (Cheung, 2009). The Labor Disputes Mediation and Arbitration Law reduces the costs incurred by workers in safeguarding their rights and interests and extends the time limit for applying for arbitration by stipulating that "the arbitration of labor disputes is free of charge" and also that "the time limit for applying for arbitration in labor disputes is one year." This was an extension of time from 60 days that had been allowed under the Labor Law of 1994. Taking all these factors into consideration, it is not hard to understand why there was a jump in the number of labor dispute cases in 2008.

**Figure 8.4: Number and Incidence of Labor Disputes, 1999-2016**

*Source:* Authors' calculations based on National Bureau of Statistics and Ministry of Human Resources and Social



Security (various years).

**Note:** Labor disputes incidence refers to the proportion of the number of labor dispute cases in proportion to the number of people in urban employment.

### Evolution of Reasons for Disputes

The data showed that workers had a range of different reasons for initiating labor disputes, including wage compensation, social insurance, labor protection, professional training, and the termination or expiration of a labor contract. The relevant time series are presented in Figure 8.5.

Wage compensation was the most common reason for initiating labor disputes. For example, workers may not have been satisfied with their wage compensation level or may not have been paid their wages. The proportion of labor dispute cases initiated by wage compensation disagreements has been on a rising trend. Although there have been some fluctuations, the proportion reached a high of 32.4 percent in 2016.

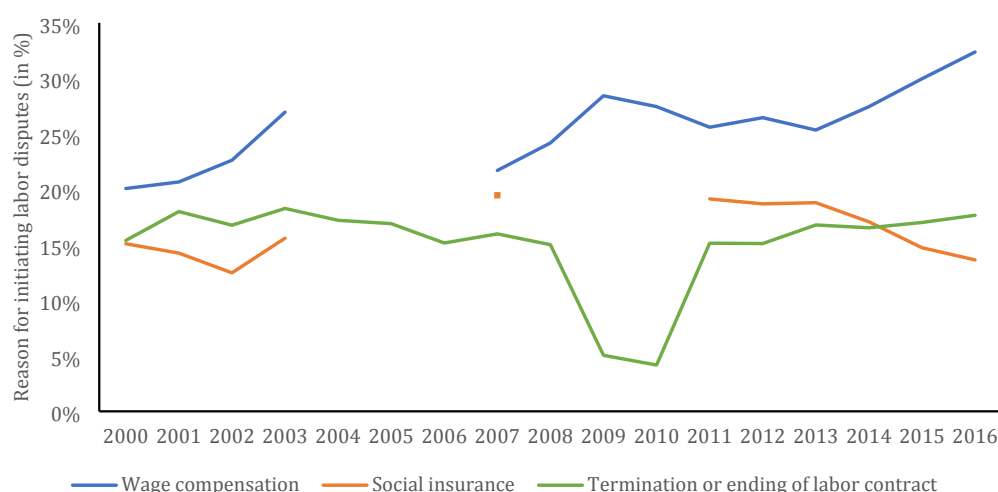
A lack of coverage by social insurance was another important reason why workers initiated disputes. The proportion of labor dispute cases initiated



by social insurance claims remained relatively stable at about 15 percent of all disputes throughout our investigation period. Meanwhile, proportion of disputes prompted by the termination or expiration of a labor contract was between 15 and 20 percent in most years, apart from 2009 and 2010 (when it dropped to 5 percent and 4.2 percent respectively).

The data on labor disputes in the *China Labor Statistical Yearbook* only includes “cases accepted” and “cases mediated.” “Cases accepted” refers to the number of cases that arbitration institutions at different levels agree to consider, and “cases mediated” refers to the number of cases in which mediation has been tried before they are referred to arbitration institutions. However, it would be impossible to know the overall situation of labor disputes just by looking at these data. Therefore, we also used data from two waves of the China Urban Labor Survey (CULS) to analyze trends in labor disputes among both migrant and local workers and the factors that influence the initiation of disputes.

**Figure 8.5: Reasons for Initiating Labor Disputes, 2000-2016**



Source: Authors' calculations based on data from China Labor Statistical Yearbook (various years).

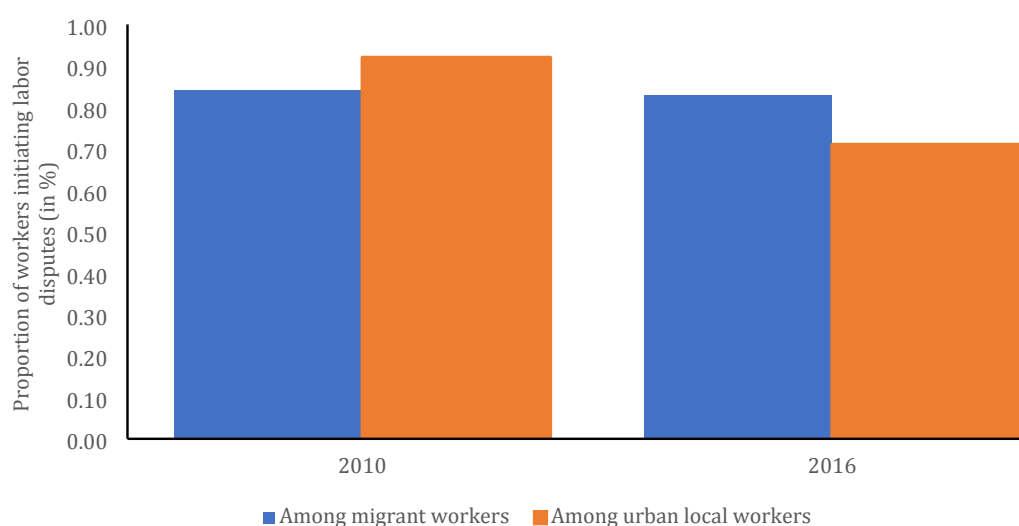
## 6. Measures of Labor Market Disputes from Survey Data

While aggregate number of labor disputes has been on the rise, their incidence as a percentage of total employment remains small. In 2010 (CULS3), only 0.84 percent of migrant workers and 0.92 percent of urban local workers had ever initiated a labor dispute, while in 2016 (CULS 4), these two proportions had declined slightly to 0.83 percent and 0.71 percent respectively (Figure 8.6). In 2010, the proportion of migrant workers initiating labor disputes was lower than that of local workers, whereas the opposite was the case in 2016.

In 2010 and 2016, wage compensation was the main reason for initiating a labor dispute among for both migrant workers and local workers. In 2010,

76 percent of migrant workers declared wage compensation to be the main reason for initiating their labor disputes, while among local workers, this proportion was 54.9 percent (Table 8.6). In 2016, workers cited more varied reasons for initiating labor disputes. Other than wage compensation, they cited the “conclusion or amending of labor contracts” as another important reason for initiating labor disputes. The proportions of migrant and local workers who declared the latter to be the main reason for initiating their disputes were 40.6 percent and 32.5 percent respectively. In addition, 25.5 percent of local workers declared that “social insurance and welfare” was their major reason for initiating labor disputes in 2016.

**Figure 8.6: Proportion of Workers Initiating Labor Disputes, 2010 and 2016**



Source: Authors' calculations based on data from CULS3 and CULS4.

**Table 8.6: Reasons for Initiating Labor Disputes, 2010 and 2016**

| Major Reason (% of labor disputes)        | 2010            |              | 2016            |               |
|---|-----------------|--------------|-----------------|---------------|
|   | Migrant Workers | Local Worker | Migrant Workers | Local Workers |
| Wage compensation                         | 76.0            | 54.9         | 43.5            | 36.0          |
| Conclusion or amending of labor contracts | 0.6             | 6.0          | 40.6            | 32.5          |
| Social insurance and welfare              | 1.7             | 3.8          | 0.0             | 25.5          |
| Work time, rest, and vocation             | 0.0             | 21.2         | 14.6            | 6.1           |
| Other reasons                             | 21.7            | 14.1         | 1.4             | 0.0           |
| Total                                     | 100             | 100          | 100             | 100           |

Source: Authors' calculations based on data from CULS3 and CULS4.

We observed little change in terms of workers' satisfaction with the resolution of their labor disputes. The responses to the question "Are you satisfied with the resolution results of labor disputes?" from the 2010 and 2016 CULS are presented in Table 8.6. The table shows that the proportion choosing "Satisfied and somewhat satisfied"<sup>63</sup> was higher among migrant workers than local workers in both 2010 and 2016. However, among migrant workers, the proportion responding this way rose by 18.1 percentage points between 2010 and 2016, and among local workers, it rose by 38.4 percentage points. This sharply narrowed the gap between local and migrant workers from 27.3 percentage points in 2010 to 7 percentage points in 2016.

**Table 8.6: Satisfaction with Labor Dispute Resolutions, 2010 and 2016**

| <i>Satisfaction (%)</i>          | <i>2010</i>     |              | <i>2016</i>     |               |
|----------------------------------|-----------------|--------------|-----------------|---------------|
|                                  | Migrant Workers | Local Worker | Migrant Workers | Local Workers |
| Satisfied and somewhat satisfied | 69.5            | 42.2         | 87.6            | 80.6          |
| Not satisfied                    | 30.5            | 57.9         | 12.5            | 19.4          |

*Source:* Authors' calculations based on data from CULS3 and CULS4.

*Note:* There were four allowable responses to the satisfaction question in the 2010 CULS (CULS3): "Very satisfied," "Satisfied," "Not very satisfied," and "Very unsatisfied." In the 2016 CULS, five responses were allowed for this question: "Very satisfied," "Satisfied," "Somewhat satisfied," "Not very satisfied," and "Very unsatisfied."

## **6.1 Worker and Firm Characteristics Associated with the Initiation of Labor Disputes**

When we investigated the characteristics associated with initiating labor disputes, we found that educated workers were more likely than less educated workers to take part in such disputes, but there were no differences by gender or type of worker. Table 8.7 presents data on the differences in individual and job characteristics between those workers who had ever initiated a labor dispute and those who had never done so. It shows that, in the case of both migrant workers and local workers, there were no significant differences in gender or age between these two categories. However, there were educational differences. For

<sup>63</sup> The variable was coded in the following way: the choices "Very satisfied," "Satisfied," and "Somewhat satisfied" were combined into a single "Satisfied and somewhat satisfied" and "Not very satisfied" and "Very unsatisfied" were combined into "Not satisfied. Only the 2016 CULS offered the option of "Somewhat satisfied."

both migrant workers and local workers, the proportion of workers with at least a college degree was much higher among those who had ever initiated a labor dispute than among those who had never done so. This was the case in both 2010 and 2016. The gap was largest among migrant workers. Take the year 2016 as an example. Among migrant workers who had ever initiated a labor dispute, the proportion of workers with a college degree or higher was 60.8 percent, while among migrant workers who had never initiated a labor dispute, this proportion was 33.5 percent. The gap was 27.3 percentage points, whereas for local workers, the equivalent gap was only 5.7 percentage points.

We also found some differences in job characteristics between workers who had ever initiated a labor dispute and those who had never done so. First, as shown in Table 8.8, for both migrant and urban local workers in both 2010 and 2016, the proportion of workers from government agencies and institutions was lower among workers who had ever initiated a labor dispute than among workers who had never done so. Meanwhile, the proportion of workers from private enterprises was higher among workers who had ever initiated a labor dispute than among who had never done so. Second, again for both migrant and local workers and in both years, the proportion of workers from the manufacturing sector was lower among workers who had ever initiated a labor dispute than among workers who had never done so.

**Table 8.7: Worker Characteristics and the Initiation of Labor Disputes, 2010 and 2016**

|                               | <i>Migrant Workers</i>   |                           | <i>Local Workers</i>     |                           |
|-------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|
|                               | Ever initiated a dispute | Never initiated a dispute | Ever initiated a dispute | Never initiated a dispute |
| 2010                          |                          |                           |                          |                           |
| Gender (%)                    |                          |                           |                          |                           |
| Male                          | 50.6                     | 53.5                      | 59.2                     | 56.9                      |
| Female                        | 49.4                     | 46.6                      | 40.8                     | 43.1                      |
| Age (years)                   | 30.8                     | 34.2                      | 37.5                     | 41.4                      |
| Educational level (%)         |                          |                           |                          |                           |
| Primary school or less        | 0.0                      | 10.3                      | 0.0                      | 2.2                       |
| Junior high school            | 35.7                     | 42.0                      | 11.9                     | 21.0                      |
| Sen. high / techn sec. school | 26.7                     | 26.9                      | 48.2                     | 40.8                      |
| College and above             | 37.7                     | 20.8                      | 39.9                     | 36.1                      |
| 2016                          |                          |                           |                          |                           |
| Gender (%)                    |                          |                           |                          |                           |
| Male                          | 62.9                     | 59.1                      | 60.0                     | 57.7                      |
| Female                        | 37.1                     | 40.9                      | 40.0                     | 42.3                      |
| Age (years)                   | 41.2                     | 36.0                      | 39.9                     | 40.0                      |
| Educational level (%)         |                          |                           |                          |                           |
| Primary school or less        | 3.3                      | 9.1                       | 0.0                      | 1.3                       |
| Junior high school            | 12.2                     | 33.4                      | 21.3                     | 15.4                      |
| Sen. high / techn sec. school | 23.8                     | 24.0                      | 16.7                     | 27.1                      |
| College and above             | 60.8                     | 33.5                      | 62.0                     | 56.3                      |

*Source:* Authors' calculations based on data from CULS3 and CULS4.

**Table 8.8: Job Characteristics and the Initiation of Labor Disputes, 2010 and 2016**

|  | <i>Migrant Workers</i>   |                           | <i>Local Workers</i>     |                           |
|--|--------------------------|---------------------------|--------------------------|---------------------------|
|  | Ever initiated a dispute | Never initiated a dispute | Ever initiated a dispute | Never initiated a dispute |
| <b>2010</b>  |                          |                           |                          |                           |
| Labor contract (%)                                       |                          |                           |                          |                           |
| Have labor contract                                      | 77.6                     | 65.0                      | 41.0                     | 28.7                      |
| No labor contract  | 22.4                     | 35.0                      | 59.0                     | 71.3                      |
| Ownership (%)  |                          |                           |                          |                           |
| Government agencies and institutions                     | 3.8                      | 4.1                       | 16.8                     | 21.4                      |
| State-owned or collective enterprises                    | 3.0                      | 7.2                       | 9.3                      | 32.6                      |
| Private enterprises                                      | 84.0                     | 80.5                      | 59.1                     | 37.9                      |
| Foreign-funded enterpr. or joint vent.                   | 9.2                      | 8.3                       | 14.8                     | 8.1                       |
| Sector (%)   |                          |                           |                          |                           |
| Manufacturing  | 8.4                      | 12.6                      | 15.4                     | 16.9                      |
| Other sectors in secondary industry                      | 8.6                      | 6.1                       | 6.6                      | 8.6                       |
| Wholesale and retail trade & hotel and catering services | 21.2                     | 42.4                      | 8.7                      | 18.9                      |
| Leasing, business, personal and other services           | 53.4                     | 18.7                      | 25.7                     | 16.3                      |
| Other sectors in tertiary industry                       | 8.5                      | 20.3                      | 43.6                     | 39.2                      |
| Firm size (%)  |                          |                           |                          |                           |
| 1 person   | 11.6                     | 6.8                       | 3.1                      | 3.8                       |
| 2-7 workers  | 39.3                     | 41.6                      | 14.7                     | 12.7                      |
| 8-19 workers   | 27.8                     | 11.3                      | 15.6                     | 7.8                       |
| 20+ workers  | 21.3                     | 40.3                      | 66.5                     | 75.7                      |
| <b>2016</b>  |                          |                           |                          |                           |
| Labor contract (%)                                       |                          |                           |                          |                           |
| Have labor contract                                      | 47.8                     | 53.2                      | 30.0                     | 26.7                      |
| No labor contract  | 52.2                     | 46.8                      | 70.0                     | 73.3                      |
| Ownership (%)  |                          |                           |                          |                           |
| Government agencies and institutions                     | 0.0                      | 3.8                       | 6.0                      | 17.7                      |
| State-owned or collective enterprises                    | 15.0                     | 9.2                       | 39.0                     | 24.7                      |
| Private enterprises                                      | 85.0                     | 82.0                      | 51.4                     | 50.7                      |
| Foreign-funded enterpr. or joint vent.                   | 0.0                      | 5.0                       | 3.6                      | 7.0                       |
| Sector (%)   |                          |                           |                          |                           |
| Manufacturing  | 0.3                      | 13.5                      | 11.9                     | 14.2                      |
| Other sectors in secondary industry                      | 25.0                     | 9.5                       | 6.3                      | 8.4                       |
| Wholesale and retail trade & hotel and catering services | 57.2                     | 34.8                      | 10.5                     | 18.2                      |
| Leasing, business, personal and other services           | 7.1                      | 16.2                      | 7.6                      | 11.6                      |
| Other sectors in tertiary industry                       | 10.3                     | 26.0                      | 63.7                     | 47.6                      |
| Firm size (%)  |                          |                           |                          |                           |
| 1 person   | 3.3                      | 6.4                       | 3.3                      | 3.5                       |
| 2-7 workers  | 28.8                     | 31.0                      | 0.0                      | 11.1                      |
| 8-19 workers   | 0.0                      | 10.7                      | 14.9                     | 11.4                      |
| 20+ workers  | 68.0                     | 52.0                      | 81.9                     | 74.1                      |

Source: Authors' calculations based on data from CULS3 and CULS4.

Various factors can affect whether workers initiate a labor dispute or not, including their own (individual) characteristics and the characteristics of their jobs. However, it was impossible for us to conclude which factors affect a worker's probability of initiating labor disputes just from the results of our descriptive analysis. Therefore, we carried out further econometric analysis in order to identify those factors. The results of a logit model that we used to examine the factors associated with initiating labor disputes among both migrant and local workers are shown in Table 8.9.<sup>64</sup> We used data from both the 2010 and 2016 waves of the CULS and estimated two models for each wave. Model (1) included individual characteristics and city dummy variables, while in model (2), job characteristics were added to the first model. The marginal effects are shown in Table 8.10.<sup>65</sup> The effects of most independent variables were very similar in 2010 and 2016. For both years, there was no difference between migrant workers and local workers in their probability of initiating a labor dispute. Gender and age also had little effect on whether a worker had ever initiated a labor dispute or not. However, educational level did significantly affect the likelihood of initiating a labor dispute, and there was some difference in this effect between 2010 and 2016. In 2010, all workers with more than a primary education had a higher probability of initiating a labor dispute whereas in 2016, only workers with a college or higher education had a higher probability of doing so.

We also observed some job and firm characteristics more often among those who had initiated labor disputes than among those who had not. We found that having a labor contract was associated with a lower likelihood of initiating a labor dispute than not having such a contract in both 2010 and 2016, while workers in private enterprises were more likely to initiate a labor dispute than workers in government agencies and institutions. The size of the worker's firms seems not to be associated with the probability of initiating a

<sup>64</sup> The dependent variable is whether a worker has ever initiated a labor dispute or not (yes = 1, no = 0). The independent variables include whether a worker is a migrant worker or not (migrant worker = 1, urban local worker = 0), individual characteristics (gender, age and educational level), whether a worker has a labor contract or not (have labor contract = 1, no labor contract = 0) and job characteristics (ownership, sector, firm size) and city dummy variables. The model is constructed as follows:

$$\begin{aligned} \text{dispute} = & \beta_0 + \beta_1 \text{migrant} + \beta_2 \text{female} + \beta_3 \text{age} + \beta_4 [\text{age}]^2 + \beta_5 \text{edu} \\ & + \beta_6 \text{contract} + \beta_7 \text{ownership} + \beta_8 \text{sector} + \beta_9 \text{firmsize} + \beta_{10} \text{city} + \epsilon \end{aligned}$$

Where *dispute* indicates whether a worker has ever initiated a labor dispute or not, *migrant* is a migrant dummy variable, *female* is a female dummy variable, *age* is *age*, *age*<sup>2</sup> is age squared, *edu* is a group of educational-level dummy variables, *contract* is a labor contract dummy variable (have labor contract = 1, no labor contract = 0), *ownership* is a group of ownership dummy variables, *sector* is a group of sector dummy variables, *firmsize* is a group of firm-size dummy variables, *city* is a group of city dummy variables, and  $\epsilon$  is the error term.

<sup>65</sup> The marginal effects were calculated at the means of the independent variables.

labor dispute.

In summary, educational level significantly affects the probability of initiating a labor dispute. This may be because workers with higher levels of education are more aware of labor market institutions and laws than others with lower levels of education, and thus, when their rights and interests are violated, they are more likely to initiate a labor dispute. Workers with labor contracts are less likely to less likely to initiate labor disputes than those without such contracts, probably because they are usually better protected in areas such as wage compensation, social insurance, and working hours. Also, workers in private enterprises have a higher probability of initiating labor disputes, possibly because their rights and interests are not protected as well as those of workers in other sectors.

**Table 8.9: Determinants of the Initiation of Labor Disputes, 2010 and 2016**

| <i>Independent variable</i>                | <i>2010</i>         |                     | <i>2016</i>         |                      |
|--|---------------------|---------------------|---------------------|----------------------|
|  | Model 1             | Model 2             | Model 1             | Model 2              |
| Migrant worker                             | -0.001<br>(0.001)   | -0.001<br>(0.001)   | 0.002<br>(0.004)    | 0.001<br>(0.003)     |
| Female                                     | -0.001*<br>(0.001)  | -0.001<br>(0.001)   | 0.000<br>(0.003)    | 0.000<br>(0.002)     |
| Age  | -0.000<br>(0.000)   | -0.000<br>(0.000)   | 0.001<br>(0.002)    | 0.000<br>(0.001)     |
| Age2                                       | -0.000<br>(0.000)   | -0.000<br>(0.000)   | -0.000<br>(0.000)   | -0.000<br>(0.000)    |
| Junior high school                         | 0.955***<br>(0.026) | 0.953***<br>(0.027) | 0.010<br>(0.008)    | 0.008<br>(0.006)     |
| Senior high or techn. secondary school     | 0.966***<br>(0.016) | 0.966***<br>(0.017) | 0.010<br>(0.006)    | 0.007<br>(0.005)     |
| College and above                          | 0.987***<br>(0.007) | 0.987***<br>(0.007) | 0.014***<br>(0.002) | 0.012***<br>(0.002)  |
| Have labor contract                        |                     | -0.001**<br>(0.000) |                     | -0.002***<br>(0.001) |
| State-owned or collective enterprises      |                     | -0.001<br>(0.001)   |                     | 0.020<br>(0.014)     |
| Private enterprises                        |                     | 0.001*<br>(0.001)   |                     | 0.007**<br>(0.003)   |
| Foreign-fund. enterpr. or joint ventures   |                     | 0.005***<br>(0.001) |                     | 0.005<br>(0.013)     |
| Other sectors in secondary industry        |                     | 0.004<br>(0.003)    |                     | 0.005<br>(0.003)     |
| Trade & hotel and catering services        |                     | -0.001<br>(0.001)   |                     | 0.007<br>(0.006)     |
| Leasing, business, person., other services |                     | 0.003*<br>(0.001)   |                     | 0.002<br>(0.003)     |
| Other sectors in tertiary industry         |                     | 0.001<br>(0.001)    |                     | 0.004<br>(0.003)     |
| 2-7 workers                                |                     | -0.001<br>(0.001)   |                     | -0.001<br>(0.003)    |

|                      | <i>Migrant Workers</i>   |                           | <i>Local Workers</i>     |                           |
|----------------------|--------------------------|---------------------------|--------------------------|---------------------------|
|                      | Ever initiated a dispute | Never initiated a dispute | Ever initiated a dispute | Never initiated a dispute |
| 8-19 workers         |                          | 0.001<br>(0.001)          |                          | 0.002<br>(0.004)          |
| 20+ workers          |                          | 0.001<br>(0.001)          |                          | 0.003<br>(0.002)          |
| City dummy variables | Yes                      | Yes                       | Yes                      | Yes                       |
| No. of observations  | 7,500                    | 7,500                     | 6,121                    | 6,121                     |

*Source:* Authors' calculations based on data from CULS3 and CULS4.

*Note:* Robust standard errors are in parenthesis. Estimation results on city dummy variables are abbreviated for simplicity.

\*\*\* =  $p < 0.01$ ; \*\* =  $p < 0.05$ ; \* =  $p < 0.10$ .

## 7. Impact of the Labor Contract Law on Labor Costs

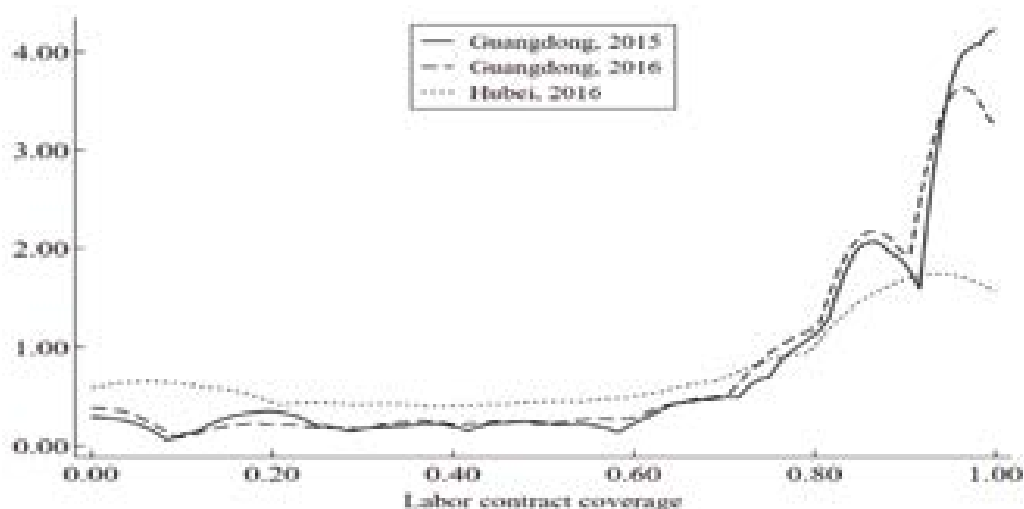
Chapter 3 summarized the existing studies of the effects of the Labor Contract Law on firms. These studies either used data on listed firms or data collected during case interviews or field trips. Any inferences made on the basis of these studies, therefore, may not be reliable because of the data was not representative. In this section, we will study the effects of the Labor Contract Law on manufacturing firms' labor costs using data from the China Employer-Employee Survey (CEES).

### 7.1. Labor Contract Coverage in Manufacturing Firms

The Labor Contract Law and other labor regulations, such as the Social Insurance Law and the minimum wage regulation, have increased protection for workers. In fact, their protection for workers is so extensive that some researchers argue that the law should be modified to increase labor market flexibility (Xie, 2017). This argument is based on the fact that the law makes it more difficult for firms to fire workers, while also increasing their labor costs and decreasing their labor market flexibility. As a result, some researchers argue that the Labor Contract Law is not helpful for boosting employment and maintaining economic growth.

The CEES questionnaire did not ask firms directly about their labor contract coverage, but the employee questionnaire asked each employee whether he or she had signed a formal contract with his or her employer. Based on this information, it was possible for us to calculate labor contract coverage as the proportion of employees who had signed a labor contract in the total number of employees. In Guangdong, labor contract coverage among manufacturing firms was 82.54 percent in 2015, but this had decreased to 80.82 percent in 2016. In Hubei, the labor contract coverage in 2016 was 65.54 percent, much lower than in Guangdong.



**Figure 8.7: Distribution of Labor Contract Coverage, Guangdong and Hubei, 2015- 2016**

*Source:* Authors' calculations based on data from the China Employee-Employee Survey.

*Note:* Manufacturing firms only.

In 2015, 47.13 percent of manufacturing firms in Guangdong had full labor contract coverage (that is, all of the employees in these firms were protected by labor contracts), while in 2016 the share slightly decreased to 40.59 percent. In Hubei, 32.33 percent of manufacturing firms had full labor contract coverage in 2016. In 2015, 3.30 percent of Guangdong's manufacturing firms had zero labor contract coverage (in other words, with no employees protected by labor contracts), and in 2016, that proportion had increased to 4.80 percent. In Hubei, 13.60 percent of manufacturing firms had zero labor contract coverage in 2016.

Figure 8.7 presents the distribution of labor contract coverage in Guangdong and Hubei in 2015 and 2016. It is evident that the decrease in labor contract coverage in Guangdong between 2015 and 2016 was caused by the decrease in the proportion of firms that had full labor contract coverage (or almost full coverage). The lower labor contract coverage in Hubei compared with Guangdong was caused by the low proportion of firms that had high labor contract coverage. These differences between Guangdong and Hubei may reflect differences in labor law enforcement and industry structure in the two provinces.

## **7.2. Firm Characteristics, Labor Contract Coverage, and Labor Costs**

Table 8.10 presents the relationship among firm characteristics, labor contract coverage, and labor costs. Although labor contract coverage in Hubei was 15 percent lower than in Guangdong in 2016, average labor costs (total labor costs divided by number of workers) in Hubei were similar to those in Guangdong or even higher.

**Table 8.10: Firm Characteristics, Labor Contract Coverage and Labor Costs, Guangdong and Hubei, 2015 and 2016**

| Firm characteristics      | Share (%) |         |            | Labor Contract Coverage (%) |         |            | Average Labor Cost (10,000 Yuan) |         |            |
|---------------------------|-----------|---------|------------|-----------------------------|---------|------------|----------------------------------|---------|------------|
|                           | 2015 GD   | 2016 GD | 2016 Hubei | 2015 GD                     | 2016 GD | 2016 Hubei | 2015 GD                          | 2016 GD | 2016 Hubei |
| Employment size           |           |         |            |                             |         |            |                                  |         |            |
| Less than 800             | 73.51     | 73.48   | 88.49      | 77.91                       | 76.27   | 63.64      | 4.02                             | 4.02    | 4.22       |
| More than 800 (incl.)     | 26.49     | 26.52   | 11.51      | 93.00                       | 91.96   | 87.75      | 4.62                             | 4.85    | 4.55       |
| Ownership                 |           |         |            |                             |         |            |                                  |         |            |
| State- and col.-owned     | 6.06      | 6.06    | 17.01      | 94.55                       | 87.69   | 86.12      | 3.54                             | 4.74    | 4.60       |
| Private                   | 53.85     | 53.85   | 76.80      | 73.32                       | 72.09   | 60.20      | 4.12                             | 3.92    | 4.16       |
| Foreign                   | 40.10     | 40.10   | 6.19       | 92.55                       | 90.47   | 85.10      | 4.39                             | 4.60    | 4.56       |
| Has exports               |           |         |            |                             |         |            |                                  |         |            |
| No                        | 34.36     | 36.14   | 77.32      | 74.42                       | 74.99   | 63.10      | 3.81                             | 3.80    | 4.17       |
| Yes                       | 65.64     | 63.86   | 22.68      | 86.43                       | 83.78   | 76.93      | 4.36                             | 4.48    | 4.50       |
| Years since founding      |           |         |            |                             |         |            |                                  |         |            |
| Less than 10 years        | 39.15     | 32.74   | 46.92      | 77.47                       | 77.04   | 59.29      | 4.02                             | 4.00    | 4.37       |
| More than 10 yrs. (incl.) | 60.85     | 67.26   | 53.08      | 85.46                       | 82.22   | 72.99      | 4.29                             | 4.33    | 4.15       |
| Technology type           |           |         |            |                             |         |            |                                  |         |            |
| No CNC and robot          | 52.63     | 52.63   | 50.00      | 78.14                       | 76.31   | 63.06      | 4.07                             | 3.99    | 4.01       |
| Only CNC                  | 35.34     | 35.34   | 44.01      | 84.19                       | 82.90   | 66.48      | 4.20                             | 4.36    | 4.36       |
| Robot                     | 12.03     | 12.03   | 5.99       | 91.26                       | 92.34   | 94.46      | 4.58                             | 4.98    | 5.50       |

*Source:* Authors' calculations based on data from China Employer-Employee Survey.

*Note:* CNC stands for computer numerically controlled machines.

The CEES sample firms include not only small and micro firms with only a few employees but also giant firms like BYD Auto Co. Ltd, which hires more than 40,000 workers. The operational formality of firms increases with employment size, and so does the likelihood of firms complying with the law. The CEES sample firms have an average of 800 workers. To simplify, we classified firms with 800 or more employees as large firms and those with fewer than 800 employees as small and medium firms.<sup>66</sup> As is evident from Table 8.10, the proportion of large firms was 15 percentage points higher in Guangdong than in Hubei. As expected, labor contract coverage in large firms was approximately 90 percent, which was 15 to 24 percentage points higher than the coverage rate among medium and small firms. Average labor costs were also higher in large firms than in medium and small firms by a margin of 9 to 21 percent.

Firm ownership type also affects labor contract coverage. We classified all firms into the following three categories: (i) state- and collective-owned firms; (ii) private firms, and (iii) foreign-owned firms. Because of

<sup>66</sup> This classification is different from the standards used by the National Bureau of Statistics of China.

Guangdong's geographic advantage in attracting foreign investment, the share of foreign-invested firms in Guangdong was 34 percentage points higher than in Hubei. Hubei is a typical inland province, and its share of state- and collective-owned firms was higher than Guangdong's share. We found that foreign-owned firms and state- and collective-owned firms were more likely than those in the private sector to comply with the law because they generally faced softer budget constraints. Labor contract coverage was generally much higher in foreign-owned firms, probably because they tend to be more aware of the need to comply with the labor laws. Consistent with the findings of existing studies, we found that foreign-owned firms and state- and collective-owned firms had higher labor contract coverage and average labor costs than private firms.

**Table 8.11: Factors Associated with Labor Costs**

| Variable                    | Average labor cost (log) |                     |                     | Unit labor cost (log) |                      |                      |
|-----------------------------|--------------------------|---------------------|---------------------|-----------------------|----------------------|----------------------|
|                             | (1)                      | (2)                 | (3)                 | (4)                   | (5)                  | (6)                  |
| Labor contract coverage (%) | 0.275***<br>(0.075)      | 0.156*<br>(0.086)   | 0.162*<br>(0.094)   | -0.218**<br>(0.092)   | -0.371***<br>(0.108) | -0.390***<br>(0.118) |
| Employment size (log)       |                          | -0.007<br>(0.020)   | -0.015<br>(0.021)   |                       | 0.012<br>(0.029)     | -0.006<br>(0.028)    |
| Ownership: private          |                          | -0.156**<br>(0.071) | -0.136*<br>(0.075)  |                       | -0.055<br>(0.110)    | -0.149<br>(0.114)    |
| Ownership: foreign          |                          | -0.056<br>(0.079)   | -0.015<br>(0.087)   |                       | 0.249**<br>(0.115)   | -0.027<br>(0.129)    |
| Years since founding        |                          | -0.001<br>(0.003)   | -0.000<br>(0.003)   |                       | -0.011**<br>(0.005)  | -0.011**<br>(0.005)  |
| Has export                  |                          | 0.096*<br>(0.057)   | 0.118*<br>(0.061)   |                       | 0.222***<br>(0.072)  | 0.152**<br>(0.075)   |
| Technology: CNC             |                          | 0.110**<br>(0.050)  | 0.116**<br>(0.050)  |                       | -0.021<br>(0.064)    | 0.040<br>(0.064)     |
| Technology: robot           |                          | 0.323***<br>(0.071) | 0.350***<br>(0.073) |                       | -0.055<br>(0.112)    | -0.007<br>(0.113)    |
| Constant                    | 1.021***<br>(0.061)      | 1.160***<br>(0.124) | 1.146***<br>(0.175) | -2.141***<br>(0.074)  | -2.062***<br>(0.170) | -1.665***<br>(0.245) |
| Observations                | 918                      | 908                 | 908                 | 840                   | 831                  | 831                  |
| R2                          | 0.017                    | 0.046               | 0.079               | 0.006                 | 0.056                | 0.122                |
| City dummies                | No                       | No                  | Yes                 | No                    | No                   | Yes                  |

*Source:* Authors' calculations based on data from China Employer-Employee Survey.

*Note:* CNC stands for computer numerically controlled machines. Robust standard errors are in parenthesis. \*\*\* =  $p < 0.01$ ;

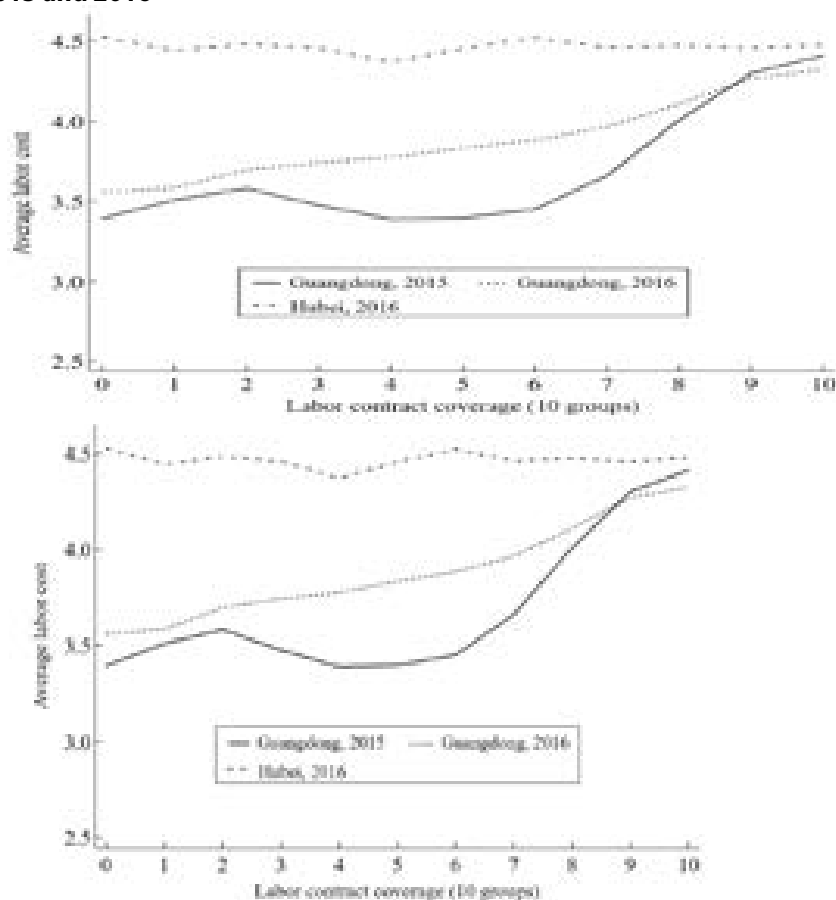
\*\*  $p < 0.05$ ; \*  $p < 0.10$ .

The proportion of export-oriented firms was also higher in Guangdong than in Hubei. Compared with firms that do not export at all, firms that do are more likely to operate more formally, so their labor contract coverage and costs tend to be higher as well. The share of firms that have survived for at least 10 years was also higher in Guangdong than in Hubei. Older firms tend to be more formal in their operation and are more likely to survive in

competition than younger firms, and they also tend to have higher labor contract coverage. However, this relationship between firms' survival years and labor costs was not obvious in our findings. For example, we found that in Guangdong the older firms had higher average labor costs, but in Hubei it was the younger firms that had higher average labor costs.

The kind of technology used in firms may also be related to firms' labor costs and labor contract coverage. The CEES firm questionnaire asked firms whether they used computerized, digitally controlled machines and industrial robots in their production. Based on the technology that they reported using, we classified all firms into three categories: (i) firms that do not use computer-controlled machines and industrial robots; (ii) firms that use computer-controlled machines but not industrial robots; and (iii) firms that use industrial robots. The results in Table 8.10 indicate that firms with more advanced technologies had higher labor contract coverage and higher labor costs. The relationship between labor contract coverage and firms' average labor costs also varied by region. In Guangdong, firms' average labor costs increased with labor contract coverage in both 2015 and 2016, while in Hubei, firms' average labor costs did not seem to have any close relationship with labor contract coverage.

**Figure 8.8: Labor Contract Coverage and Average Labor Costs, Guangdong and Hubei, 2015 and 2016**

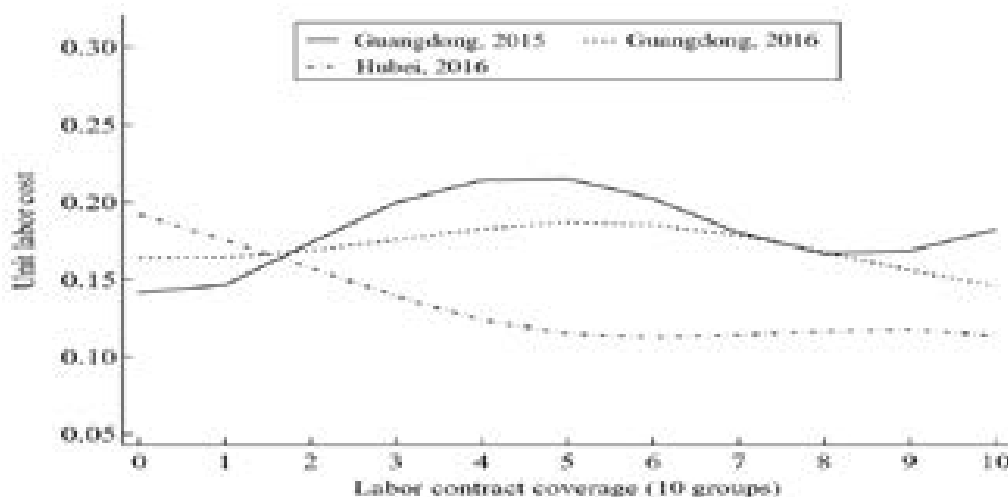


Source: Author's calculations based on data from China Employer-Employee Survey.

In Table 8.11 and Figure 8.8, we calculated a firm's average labor costs by dividing its total labor cost by the number of its workers. The average labor cost only measures a firm's payment to workers and not the contributions made by workers to the firm. Thus, a more appropriate measure of labor cost would be unit labor cost, which is a firm's average labor cost divided by its average labor productivity. Labor productivity is measured by total output divided by employment size. The unit labor cost measures the proportion of a firm's unit production that is paid to its workers. If an increase in labor costs coincides with an increase in labor productivity, then unit labor cost will not necessarily increase. Even if expanding the coverage of labor contracts increases firms' average labor costs, as is evident in Figure 7.2, it will not necessarily increase firms' unit labor costs.

Figure 8.9 presents our findings regarding the relationship between labor contract coverage and firms' unit labor cost in Guangdong and Hubei in 2015 and 2016. It makes it evident that increases in labor contract coverage lowered unit labor costs in Hubei during these two years.

**Figure 8.9: Labor Contract Coverage and Unit Labor Costs, Guangdong and Hubei, 2015 and 2016**



Source: Author's calculations based on data from China Employer-Employee survey.

### 7.3. The Labor Contract Law and Labor Costs

As indicated by the analysis in the previous sections, firms' labor costs can be affected by many factors including labor contract coverage. Therefore, we used the following model to study the effects of the Labor Contract Law on labor costs:

$$(7.3) \ln\_laborcost = a + \beta_1 labor\_contract + \beta_2 \ln\_firmsize + \beta_3 ownership + \beta_4 export + \beta_5 age + \beta_6 tech\_type + \beta_7 city + \varepsilon$$

where  $\ln\_laborcost$  is the logarithm of a firm's labor cost. We used two labor cost measures in the analysis: (i) the log of average labor costs and

(ii) the log of unit labor cost. *labor\_contract* is the proportion of workers protected by labor contracts, and *ln\_firm\_size* is the logarithm of the firm's employment size. *ownership* is a dummy variable, representing the firm's ownership type, with 1 standing for the state- and collective-owned firms, 2 standing for private firms, and 3 standing for foreign-owned firms. State- and collective-owned firms are used as a reference group. *export* is a dummy variable, representing whether a firm exports its products to foreign countries, with 0 signifying no exports. *age* is years since the firm's foundation. *tech\_type* represents firms' technology used in production, with 1 meaning that a firm does not use either computer numerically controlled machines or industrial robots in production, 2 meaning that a firm uses computer numerically controlled machines but does not use industrial robots in production, and 3 meaning that a firm uses industrial robots in production. *city* is *city* dummy, and  $\epsilon$  the error term.

Table 8.11 presents our results from regressing average labor costs on the labor contract coverage using data from the 2016 China Urban Labor Survey. In columns (1) and (4), only the labor contract variable is included in the right hand. In columns (2) and (4), firm-level characteristics are also included. In columns (3) and (6), city dummies are also included in the regressions. In the regression, the explained variables are labor cost indicators.

Without controlling for other factors, the regression showed that expanding labor contract coverage increased firms' average labor costs. A 10 percent increase in labor contract coverage increased average labor costs by 3.17 percent. After controlling for firm-level characteristics, the effects of labor contract coverage decreased to 1.69, in other words, a 10 percent increase in labor contract coverage increased average labor costs by 1.69 percent. After controlling for city dummies, the effect slightly increased to 1.76. Private firms had lower average labor costs than state- and collective-owned firms, and export-oriented firms had higher average labor costs than firms that did not have any exports. Firms with more advanced technologies also had higher average labor costs.

**Table 8.12: Impact of Social Insurance on Labor Costs**

| Variable                  | Average Labor Cost (log) |                     |                     | Unit Labor Cost (log) |                      |                      |
|---------------------------|--------------------------|---------------------|---------------------|-----------------------|----------------------|----------------------|
|                           | (1)                      | (2)                 | (3)                 | (4)                   | (5)                  | (6)                  |
| Social insurance coverage | 0.374***<br>(0.076)      | 0.268***<br>(0.091) | 0.318***<br>(0.102) | -0.217**<br>(0.099)   | -0.374***<br>(0.114) | -0.454***<br>(0.130) |
| Employment size (log)     |                          | -0.013<br>(0.020)   | -0.022<br>(0.021)   |                       | 0.009<br>(0.028)     | -0.004<br>(0.028)    |
| Ownership: private        |                          | -0.127*<br>(0.071)  | -0.104<br>(0.074)   |                       | -0.074<br>(0.108)    | -0.178<br>(0.112)    |
| Ownership: foreign        |                          | -0.042<br>(0.079)   | 0.005<br>(0.086)    |                       | 0.229**<br>(0.113)   | -0.052<br>(0.127)    |

| Variable             | Average Labor Cost (log) |                     |                     | Unit Labor Cost (log) |                      |                      |
|----------------------|--------------------------|---------------------|---------------------|-----------------------|----------------------|----------------------|
|                      | (1)                      | (2)                 | (3)                 | (4)                   | (5)                  | (6)                  |
| Years since founding |                          | -0.002<br>(0.003)   | -0.001<br>(0.003)   |                       | -0.010**<br>(0.005)  | -0.010*<br>(0.005)   |
| Has export           |                          | 0.097*<br>(0.057)   | 0.127**<br>(0.061)  |                       | 0.225***<br>(0.072)  | 0.143*<br>(0.075)    |
| Technology: CNC      |                          | 0.111**<br>(0.050)  | 0.115**<br>(0.050)  |                       | -0.021<br>(0.064)    | 0.046<br>(0.064)     |
| Technology: robot    | 0.995***<br>(0.054)      | 0.309***<br>(0.071) | 0.332***<br>(0.072) | -2.168***<br>(0.069)  | -0.045<br>(0.110)    | 0.013<br>(0.112)     |
| Constant             | 919<br>0.029             | 1.136***<br>(0.120) | 1.069***<br>(0.174) | 841<br>0.006          | -2.095***<br>(0.170) | -1.648***<br>(0.244) |
| Observations         | No                       | 909                 | 909                 | No                    | 832                  | 832                  |
| R2                   |                          | 0.052               | 0.087               |                       | 0.055                | 0.122                |
| City dummies         |                          | No                  | Yes                 |                       | No                   | Yes                  |

*Source:* Authors' calculations based on data from China Employer-Employee Survey.

*Note:* CNC stands for computer numerically controlled machines. Robust standard errors are in parenthesis. \*\*\* =  $p < 0.01$ ; \*\* =  $p < 0.05$ ; \* =  $p < 0.10$ .

Regarding the effects of labor contract coverage on unit labor costs, we found that an increase in labor contract coverage decreased unit labor costs as seen in Table 8.11. Without considering other factors, a 10 percent increase in labor contract coverage decreased unit labor costs by 2.44 percent. After controlling for firm-level characteristics and city dummies, the effects increased to 4.49 percent and 4.77 percent respectively.

One of the major ways in which labor contracts can affect labor costs is by increasing workers' social security coverage, as found by Gao et al (2012), Li and Freeman (2015), Cheng et al (2015), and Meng (2017) and as described earlier in this chapter. However, although the nominal rate of a firm's social security burden (the firm's social security payments in total labor costs) is about 40 percent according to the law, firm have various options for decreasing the actual burden, meaning that the actual rate of the social security burden is around 16 percent, according to Cheng et al (2017). Nevertheless, it still made sense to study the effects of social security payments on firms' labor costs. For this purpose, we constructed a firm-level social security participation index and then, using similar specifications as in Table 8.11, studied the social security payments' effect on labor costs (Table 8.12).

**Table 8.13: Impact of Labor Contract and Social Insurance Coverage on Productivity**

| Variable                  | Labor Contract Coverage |                      |                     | Social Insurance Coverage |                     |                     |
|---------------------------|-------------------------|----------------------|---------------------|---------------------------|---------------------|---------------------|
|                           | (1)                     | (2)                  | (3)                 | (1)                       | (2)                 | (3)                 |
| Labor contract coverage   | 0.496***<br>(0.096)     | 0.525***<br>(0.108)  | 0.538***<br>(0.117) |                           |                     |                     |
| Social insurance coverage |                         |                      |                     | 0.573***<br>(0.099)       | 0.631***<br>(0.115) | 0.753***<br>(0.126) |
| Employment size (log)     |                         | -0.030<br>(0.025)    | -0.020<br>(0.025)   |                           | -0.036<br>(0.025)   | -0.032<br>(0.025)   |
| Ownership: private        |                         | -0.125<br>(0.104)    | 0.023<br>(0.107)    |                           | -0.084<br>(0.104)   | 0.069<br>(0.106)    |
| Ownership: foreign        |                         | -0.311***<br>(0.114) | 0.058<br>(0.120)    |                           | -0.279**<br>(0.112) | 0.093<br>(0.117)    |
| Years since founding      |                         | 0.008*<br>(0.004)    | 0.010**<br>(0.004)  |                           | 0.006<br>(0.004)    | 0.008*<br>(0.004)   |
| Has export                |                         | -0.075<br>(0.068)    | -0.004<br>(0.069)   |                           | -0.079<br>(0.068)   | 0.012<br>(0.067)    |
| Technology: CNC           |                         | 0.210***<br>(0.064)  | 0.141**<br>(0.062)  |                           | 0.212***<br>(0.064) | 0.133**<br>(0.062)  |
| Technology: robot         |                         | 0.436***<br>(0.103)  | 0.401***<br>(0.103) |                           | 0.421***<br>(0.100) | 0.376***<br>(0.102) |
| Constant                  | 3.207***<br>(0.079)     | 3.310***<br>(0.164)  | 2.842***<br>(0.216) | 3.223***<br>(0.072)       | 3.337***<br>(0.162) | 2.791***<br>(0.211) |
| Observations              | 955                     | 941                  | 941                 | 956                       | 942                 | 942                 |
| R2                        | 0.029                   | 0.068                | 0.162               | 0.037                     | 0.074               | 0.173               |
| City dummies              | No                      | No                   | Yes                 | No                        | No                  | Yes                 |

Source: Authors' calculations based on data from China Employer-Employee Survey.

Note: CNC stands for computer numerically controlled machines. Robust standard errors are in parenthesis. \*\*\* =  $p < 0.01$ ; \*\* =  $p < 0.05$ ; \* =  $p < 0.10$ .

After replacing the labor contract variables with social security participation index variables in the regression, we reached similar results as shown in Table 8.12. A 10 percent increase in the social security participation index increased the average labor cost and unit labor cost by 3.07 to 4.54 percent and by 2.42 to 5.75 percent respectively. The magnitudes of these social security effects were larger than the labor contract effects, which indicates that the impact of social security on labor cost is more direct and that social security effects may be the main way in which labor contracts affect labor costs.

The expansion of labor contracts increases social security coverage, which in turn increases average labor costs. The logic of this seems reasonable. However, it appears that expanding labor contract coverage does not increase *unit* labor costs. In some cases, it may actually decrease them. Because the numerator of the unit labor cost is average labor cost and the denominator is average labor productivity, it seems that labor contracts and social security



coverage may help to increase labor productivity.

Using similar specifications as in Table 8.11 and Table 8.12, Table 8.13 studied the effects of the coverage of labor contracts and social security participation on labor productivity. It is evident that both labor contract coverage and social security participation do increase labor productivity, and because labor contract coverage and social security participation are by nature forms of wage compensation, these results are consistent with efficiency wage theories (Levine, 1992).

## 8. Conclusions and Policy Implications

The evidence analyzed in this chapter shows that expanding labor contract coverage is positively associated with firms' average labor costs, mostly likely driven by the cost to employers of their social security contributions for their workers. We also found evidence that expanding labor contract coverage decreases firms' unit labor costs because it increases firm's labor productivity.

Since the implementation of the Labor Contract Law in 2008, labor market formality as measured by the labor contract signing rate has increased significantly. However, policymakers should pay attention to one worrying trend. According to the Annual Monitoring Survey of Migrant Workers conducted by the National Bureau of Statistics of China, while the coverage of migrant workers by labor contracts increased from 2009 to 2012, it then decreased in 2016. In the face of such evidence, governments often move to reduce firms' costs by lowering workers' protections. However, according to our findings in this chapter, increasing labor contract coverage may actually lower firms' unit labor costs by increasing their labor productivity. Therefore, any policies that aim to reduce workers' protection with the aim of increasing labor market flexibility and reducing firms' costs should therefore be corrected. Instead, we recommend that policy makers adopt more careful and nuanced approaches.

Based on the empirical findings of our analysis, we came to the following conclusions, all of which have policy implications. *First*, the supervision of the Labor Contract Law enforcement should be further strengthened. The law must be firmly implemented to protect the lawful rights and interests of both employees and employers. The 13th Five-Year-Plan for promoting employment, issued by the State Council in January 2017, states that the labor contract system should be executed thoroughly and that the collective bargaining system and the collective contract system should be implemented in order to achieve high-quality employment. *Second*, migrant workers and local workers must be treated equally under the Labor Contract Law. The gap in the proportions of workers with a labor contract between migrant workers and local workers must be reduced and finally eliminated. *Third*, labor dispatch must be better regulated, and the related regulations in the 2012 revision of the Labor Contract Law and in the Temporary Provisions on Labor Dispatch must be strictly enforced. Firms should strictly control

the proportion of their labor-dispatched employees, and these employees should receive equal pay as that received by the firms' full employees for doing equal work. *Fourth*, the Labor Contract Law should be implemented in coordination with related laws such as the Social Insurance Law in order to protect the lawful rights and interests of both employees and employers.

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## Annex 8A

### Regression Model for Having a Labor Contract

We estimated logit models to examine what factors affect whether a worker has a labor contract or not. We ran the models for migrant workers and local workers separately. The dependent variable is whether a worker has a labor contract or not (yes = 1, no = 0). The independent variables include workers' individual characteristics (gender, age, and educational level) and the characteristics of the firm (ownership, sector, and number of employees), and city dummy variables. The model was constructed as follows:

$$\begin{aligned} \text{contract} = & \beta_0 + \beta_1 \text{female} + \beta_2 \text{age} + \beta_3 \text{edu} + \beta_4 \text{ownership} + \beta_5 \text{sector} \\ & + \beta_6 \text{firmsize} + \beta_7 \text{city} + \varepsilon \end{aligned}$$

where *contract* signifies whether a worker has a labor contract or not; *female* is a female dummy variable (male is the reference group); *age* is a group of age-group dummy variables (16 to 30 years old is the reference group); *edu* is a group of educational-level dummy variables (primary school and below is the reference group); *ownership* is a group of ownership dummy variables (government agencies and institutions are the reference group);

*sector* is a group of sector dummy variables (manufacturing is the reference group); *firmsize* is a group of firm-size dummy variables (less than 50 workers is the reference group); *city* is a group of city dummy variables (Shanghai is the reference group); and  $\epsilon$  is the error term.

We estimated model 1 and model 2 for migrant and local workers separately. In model 1, only individual characteristics and city dummy variables were included added. In model 2, job characteristics are also added, based on the first model. The marginal effects of the models are presented in Table 1.

**Annex 8 Table 1: Determinants of Having a Labor Contract**

| <i>Independent Variables</i>                     | <i>Migrant Workers</i> |                      | <i>Local Workers</i> |                     |
|--|------------------------|----------------------|----------------------|---------------------|
|  | Model 1                | Model 2              | Model 1              | Model 2             |
| Female   | - 0.029<br>(1.40)      | - 0.029<br>(1.40)    | - 0.005<br>(0.33)    | 0.019<br>(1.45)     |
| Ages 31 to 40                                    | 0.021<br>(0.91)        | 0.021<br>(0.91)      | 0.046<br>(2.71)***   | 0.038<br>(2.35)**   |
| Ages 41 to 50                                    | - 0.018<br>(0.58)      | - 0.018<br>(0.58)    | - 0.008<br>(0.41)    | - 0.026<br>(1.33)   |
| Ages 51 to 60                                    | - 0.106<br>(1.95)*     | - 0.106<br>(1.95)*   | - 0.030<br>(1.27)    | - 0.061<br>(2.36)** |
| Junior senior school                             | 0.001<br>(0.03)        | - 0.005<br>(0.13)    | 0.054<br>(0.97)      | 0.030<br>(0.54)     |
| Senior high or technical secondary school        | 0.119<br>(3.27)***     | 0.099<br>(2.72)***   | 0.150<br>(3.34)***   | 0.115<br>(2.59)***  |
| College and above                                | 0.360<br>(9.30)***     | 0.292<br>(7.21)***   | 0.270<br>(3.39)***   | 0.206<br>(2.70)***  |
| Other sectors in secondary industry <sup>a</sup> |                        | - 0.050<br>(1.09)    |                      | 0.014<br>(0.51)     |
| Trade & hotel and catering services              |                        | - 0.040<br>(1.05)    |                      | - 0.038<br>(1.39)   |
| Leasing, business, personal, other services      |                        | - 0.033<br>(0.77)    |                      | - 0.027<br>(0.91)   |
| Other sectors in tertiary industry <sup>b</sup>  |                        | - 0.027<br>(0.76)    |                      | - 0.004<br>(0.19)   |
| State-owned enterprises                          |                        | 0.021<br>(0.44)      |                      | 0.127<br>(9.01)***  |
| Collective enterprises                           |                        | - 0.180<br>(1.35)    |                      | 0.038<br>(1.09)     |
| Private enterprises                              |                        | - 0.102<br>(2.80)*** |                      | 0.009<br>(0.53)     |
| Foreign-funded enterprises and joint ventures    |                        | 0.073<br>(1.19)      |                      | 0.092<br>(4.29)***  |
| 50–249 workers                                   |                        | 0.123<br>(6.06)***   |                      | 0.046<br>(3.46)***  |

| Independent Variables | Migrant Workers |                    | Local Workers |                    |
|-----------------------|-----------------|--------------------|---------------|--------------------|
|                       | Model 1         | Model 2            | Model 1       | Model 2            |
| 250–499 workers       |                 | 0.205<br>(9.02)*** |               | 0.062<br>(3.18)*** |
| 500+ workers          |                 | 0.158<br>(6.59)*** |               | 0.105<br>(7.46)*** |
| No. of observations   | 2,061           | 2,061              | 3,229         | 3,229              |

Source: Authors' calculations based on data from CULS4.

**Notes:** Marginal probabilities from logit models. Z values are in parentheses. \*\*\* =  $p < 0.01$ , \*\* =  $p < 0.05$ , \* =  $p < 0.10$ . City dummies were included in the regressions, and the estimation results abbreviated for simplicity. (a) Other sectors in secondary industry refers to all sectors in secondary industry except manufacturing, such as mining and quarrying, the production and supply of electricity, gas, and water, and construction. (b) Other sectors in tertiary industry refers to sectors in tertiary industry except wholesale and retail trade, hotel and catering services, leasing, business, personal and other services including transport, storage, post and telecommunication services, data transmission, computer service and software, banking, real estate, scientific research, technical services and geological prospecting, water conservancy, environment and public utility management, education, public health, social securities and social welfare, culture, sports and entertainment, public administration, and social organizations and international organizations.

## Regression Model for Participating in Social Insurance

**Annex 8 Table 2: Determinants of Participation by Migrant and Local Workers in Basic Pension Program, 2010 and 2016**

| Independent Variables                  | 2010                 |                      |                      |                      | 2016                |                     |                      |                     |
|--|----------------------|----------------------|----------------------|----------------------|---------------------|---------------------|----------------------|---------------------|
|  | Local Workers        |                      | Migrant Workers      |                      | Local Workers       |                     | Migrant Workers      |                     |
| Labor contract                         | 0.359***<br>(0.016)  | 0.283***<br>(0.017)  | 0.261***<br>(0.024)  | 0.242***<br>(0.026)  | 0.351***<br>(0.027) | 0.320***<br>(0.027) | 0.444***<br>(0.040)  | 0.423***<br>(0.040) |
| Age                                    | 0.027***<br>(0.005)  | 0.028***<br>(0.005)  | 0.033***<br>(0.007)  | 0.029***<br>(0.007)  | 0.000<br>(0.006)    | -0.000<br>(0.006)   | 0.041***<br>(0.015)  | 0.041***<br>(0.015) |
| Age2                                   | -0.000***<br>(0.000) | -0.000***<br>(0.000) | -0.000***<br>(0.000) | -0.000***<br>(0.000) | 0.000<br>(0.000)    | 0.000<br>(0.000)    | -0.001**<br>(0.000)  | -0.001**<br>(0.000) |
| Years of education                     | 0.018***<br>(0.004)  | 0.016***<br>(0.004)  | 0.024***<br>(0.005)  | 0.020***<br>(0.004)  | 0.022***<br>(0.006) | 0.019***<br>(0.006) | 0.019**<br>(0.009)   | 0.017*<br>(0.009)   |
| Education: college and above (yes = 1) | -0.010<br>(0.020)    | -0.011<br>(0.020)    | 0.090*<br>(0.051)    | 0.062<br>(0.053)     | -0.033<br>(0.033)   | -0.027<br>(0.033)   | 0.158**<br>(0.062)   | 0.128**<br>(0.064)  |
| Marital status (married = 1)           | -0.036**<br>(0.015)  | -0.041***<br>(0.014) | -0.047<br>(0.034)    | -0.043<br>(0.034)    | 0.017<br>(0.018)    | 0.014<br>(0.018)    | 0.021<br>(0.045)     | 0.014<br>(0.044)    |
| Female (yes = 1)                       | -0.009<br>(0.011)    | 0.002<br>(0.011)     | 0.011<br>(0.023)     | 0.014<br>(0.024)     | 0.004<br>(0.014)    | 0.011<br>(0.014)    | -0.031<br>(0.034)    | -0.019<br>(0.036)   |
| Constant                               | -0.284***<br>(0.102) | -0.203*<br>(0.115)   | -0.749***<br>(0.133) | -0.551***<br>(0.201) | 0.203<br>(0.147)    | 0.188<br>(0.168)    | -0.776***<br>(0.288) | -0.612*<br>(0.314)  |
| No. of obs.                            | 3,678                | 3,638                | 1,942                | 1,924                | 2,560               | 2,560               | 1,192                | 1,192               |
| R2                                     | 0.250                | 0.302                | 0.218                | 0.278                | 0.209               | 0.231               | 0.318                | 0.349               |
| Ind./owners. type                      | No                   | Yes                  | No                   | Yes                  | No                  | Yes                 | No                   | Yes                 |

Source: Authors' calculations based on data from CULS3 and CULS4.

**Notes:** Linear probability models are used in all specifications. Robust standard errors are in parentheses. \*\*\* =  $p < 0.01$ ; \*\* =  $p < 0.05$ ; \* =  $p < 0.10$ .

**Annex 8 Table 3: Determinants of Participation in Basic Medical Insurance, 2010 and 2016**

| <i>Independent Variables</i>           | <i>2010</i>          |                      |                      |                      | <i>2016</i>         |                     |                      |                      |
|--|----------------------|----------------------|----------------------|----------------------|---------------------|---------------------|----------------------|----------------------|
|  | Local Workers        |                      | Migrant Workers      |                      | Local Workers       |                     | Migrant Workers      |                      |
| Labor contract                         | 0.364***<br>(0.017)  | 0.282***<br>(0.018)  | 0.251***<br>(0.024)  | 0.228***<br>(0.025)  | 0.367***<br>(0.027) | 0.335***<br>(0.027) | 0.454***<br>(0.039)  | 0.434***<br>(0.039)  |
| Age                                    | 0.029***<br>(0.006)  | 0.030***<br>(0.005)  | 0.023***<br>(0.007)  | 0.019***<br>(0.007)  | 0.002<br>(0.006)    | 0.001<br>(0.006)    | 0.044***<br>(0.015)  | 0.044***<br>(0.015)  |
| Age                                    | -0.000***<br>(0.000) | -0.000***<br>(0.000) | -0.000***<br>(0.000) | -0.000***<br>(0.000) | 0.000<br>(0.000)    | 0.000<br>(0.000)    | -0.001***<br>(0.000) | -0.001***<br>(0.000) |
| Years of education                     | 0.022***<br>(0.004)  | 0.019***<br>(0.004)  | 0.024***<br>(0.005)  | 0.020***<br>(0.004)  | 0.024***<br>(0.006) | 0.020***<br>(0.006) | 0.025***<br>(0.008)  | 0.025***<br>(0.009)  |
| Education: college and above (yes = 1) | -0.016<br>(0.022)    | -0.017<br>(0.022)    | 0.069<br>(0.052)     | 0.045<br>(0.054)     | -0.041<br>(0.034)   | -0.029<br>(0.034)   | 0.130**<br>(0.059)   | 0.106*<br>(0.061)    |
| Marital status (married = 1)           | -0.046***<br>(0.017) | -0.050***<br>(0.017) | -0.048<br>(0.036)    | -0.041<br>(0.035)    | 0.012<br>(0.019)    | 0.012<br>(0.019)    | 0.056<br>(0.042)     | 0.054<br>(0.041)     |
| Female (yes = 1)                       | -0.012<br>(0.012)    | 0.001<br>(0.012)     | 0.039<br>(0.024)     | 0.040*<br>(0.024)    | -0.006<br>(0.014)   | 0.000<br>(0.014)    | -0.023<br>(0.033)    | -0.003<br>(0.036)    |
| Constant                               | -0.396***<br>(0.114) | -0.328**<br>(0.131)  | -0.580***<br>(0.135) | -0.418**<br>(0.193)  | 0.130<br>(0.150)    | 0.123<br>(0.168)    | -0.916***<br>(0.279) | -0.756**<br>(0.309)  |
| No. of observations                    | 3,663                | 3,624                | 1,931                | 1,913                | 2,560               | 2,560               | 1,192                | 1,192                |
| R2                                     | 0.221                | 0.271                | 0.198                | 0.269                | 0.205               | 0.230               | 0.348                | 0.379                |
| Ind./ownership type                    | No                   | Yes                  | No                   | Yes                  | No                  | Yes                 | No                   | Yes                  |

*Source:* Authors' calculations based on data from CULS3 and CULS4.

*Notes:* Linear probability models are used in all specifications. Robust standard errors are in parentheses. \*\*\* =  $p < 0.01$ ; \*\* =  $p < 0.05$ ; \*  $p < 0.10$ .

**Annex 8 Table 4: Determinants of Participation in Other Social Insurance, 2010 and 2016**

| <i>Social Insurance</i>   | <i>2010</i>         |                     |                     |                     | <i>2016</i>         |                     |                     |                     |
|---------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                           | Local Workers       |                     | Migrant Workers     |                     | Local Workers       |                     | Migrant Workers     |                     |
| Unemployment insurance    | 0.397***<br>(0.020) | 0.319***<br>(0.022) | 0.214***<br>(0.022) | 0.200***<br>(0.024) | 0.424***<br>(0.028) | 0.379***<br>(0.029) | 0.388***<br>(0.037) | 0.363***<br>(0.037) |
| Work-related insurance    | 0.335***<br>(0.019) | 0.271***<br>(0.021) | 0.246***<br>(0.023) | 0.235***<br>(0.025) | 0.412***<br>(0.028) | 0.366***<br>(0.029) | 0.431***<br>(0.038) | 0.405***<br>(0.037) |
| Maternity insurance       | -                   | -                   | -                   | -                   | 0.402***<br>(0.028) | 0.363***<br>(0.029) | 0.353***<br>(0.036) | 0.329***<br>(0.036) |
| Housing fund              | -                   | -                   | -                   | -                   | 0.416***<br>(0.027) | 0.350***<br>(0.028) | 0.306***<br>(0.033) | 0.279***<br>(0.034) |
| Enterprise annuities fund | -                   | -                   | -                   | -                   | 0.078***<br>(0.016) | 0.048***<br>(0.017) | 0.048***<br>(0.016) | 0.046***<br>(0.016) |

*Source:* Authors' calculations based on data from CULS3 and CULS4.

*Note:* Linear probability models are used in all specifications, and only the coefficients on the labor contract variable are reported here. Robust standard errors are in parentheses. The 2010 survey did not ask any questions about maternity insurance, housing fund, or the enterprise annuities fund. \*\*\* =  $p < 0.01$ ; \*\* =  $p < 0.05$ ; \*  $p < 0.10$ .





# Employment Protection Legislation and Earnings Gaps

Achim Schmillen

## 1. Introduction

In this chapter, we empirically investigate the interplay between labor market reform in China and the earnings gap between those workers who have employment contracts and those who do not. Specifically, it documents gaps in monthly earnings between covered and uncovered workers and asks if these gaps have changed since the tightening of employment protection legislation by the introduction of the Labor Contract Law in 2008. In addition, we used earnings decompositions to determine what proportion of these differences in average levels of monthly earnings is due to differences in individuals' characteristics (the "characteristics effect") and what proportion is due to differences in the impact of these characteristics on earnings (the "coefficients effect") as well as how these proportions changed after the introduction of the Law. In terms of data, we used four waves of repeated cross-section individual-level data from the China Household Income Project (CHIP) from 2002 to 2013 that cover many of China's main economic and population centers. While we focused mainly on urban workers, we also considered rural workers and rural-to-urban migrants.

In this chapter, we were able to confirm results from the existing literature and from other chapters in this edited volume when we found that, throughout the investigation period, the average monthly earnings of urban workers with an employment contract were significantly higher than those of urban workers without a contract. More notably, we documented that the introduction of the Labor Contract Law was paralleled by a significant widening of the gap in average monthly earnings between covered and uncovered workers. Between 2002 and 2008, the gap increased from 0.28 log points to 0.60 log points, and thereafter, it stayed constant until 2013. Moreover, before the introduction of the Law, differences in the average earnings between urban workers with and without an employment contract could entirely be accounted for by differences in their observable

characteristics (particularly their educational attainment). In contrast, the ensuing increase in the average earnings gap was entirely due to the impact of these observable characteristics on earnings. In this chapter, we show that a similar picture emerged with regard to rural workers and rural-to-urban migrants.

These findings are consistent with recent theoretical models of two-tier earnings structures and labor market reform such as the model created by Boeri (2011), according to which tightening employment protection legislation increases the earnings premium for workers covered by the legislation over uncovered workers. In the Boeri model, this effect reflects a reduction in the number of uncovered positions converted into covered jobs, an increase in the destruction of unprotected jobs, and a reduction in the destruction of covered jobs.

So far, only a few empirical studies have put Boeri's (2011) theory to a test. Centeno and Novo (2014) explored a reform in Portugal that increased the dismissal protections offered by open-ended employment contracts within a subset of firms and found that the reform increased the earnings premium of workers with open-ended over those with fixed-term contracts. Silva et al (2018) analyzed the same reform in Portugal and found that it had led to a significant increase in the earnings growth differential between covered and uncovered workers. More descriptively, Dias da Silva and Turini (2015) analyzed differences in earnings between workers with open-ended and fixed-term contracts across a range of European Union countries and found that higher levels of employment protection for workers with open-ended contracts to be positively correlated with a higher earnings premium for workers with such contracts.

Our analysis in this chapter is also related to the larger literature on the practical implementation and economic impact of China's Labor Contract Law as well as the broader empirical literature on earnings differentials between workers in the upper and lower tiers of the labor market. The literature on the Labor Contract Law is briefly reviewed in Chapter 3, but a comprehensive review of the literature on earnings differentials between labor market tiers is beyond of the scope of this edited volume. However, it is worth highlighting some particularly relevant studies. Studies of developed countries tend to focus on earnings differences between workers with open-ended and fixed-term employment contracts. These include Blanchard and Landier (2002) on France, Booth et al (2002) on Great Britain, and Kahn (2016) on a range of European countries. Studies of developing and emerging countries often differentiate between formal and informal workers – defined in various ways – and these include Gong and van Soest (2002) on Mexico, Pratap and Quentin (2006) on Argentina, and Bargain and Kwenday (2014) for Brazil, Mexico, and South Africa.

Deng (2011) documented earnings differences in China between urban workers in the lower tier of the labor market (defined as the self-employed and workers in smaller enterprises or with fixed-term employment contracts)

and those in the upper tier in favor of those in the upper tier. Zuo (2013) confirmed this two-tier earnings structure in urban China (defining the lower tier of the labor market as the self-employed and workers in private enterprises, in smaller firms, without an employment contract, or with an employer that is not registered with the government). of this edited volume directly compared urban workers and rural-to-urban migrants with an employment contract and those without and found an economically significant gap in monthly earnings between the two groups of workers in favor of those with an employment contract in 2001, 2005, 2010, and 2016. All in all, virtually irrespective of the country context and definition of labor market tiers, the existing literature has overwhelmingly found economically and statistically significant gaps in earnings between the upper and lower tier of the labor market.

The rest of this chapter is structured as follows: Section 2 describes the CHIP data and the analytical strategy that we used. We present our empirical analysis in Section 3, which has four parts: (i) a compilation of descriptive statistics on monthly earnings and other variables; (ii) an analysis of the determinants of earnings for workers with or without an employment contract; (iii) decompositions of the differences in monthly earnings into a characteristics and a coefficients effect; and (iv) an appraisal of whether a consistent picture also emerges for rural workers and rural-to-urban migrants. In Section 4, we present our conclusions.

## 2. Data and Analytical Strategy

### Data

For our analysis in this chapter, we used four waves of the CHIP data, described in detail in Gustafsson et al (2014). Several waves of surveys have been fielded under the China Household Income Project (CHIP), the earliest being in 1989 and the most recent in 2014. As in most surveys, the CHIP collects data that refers to the year prior to the fielding of the survey, so survey data that was collected in 2014 is usually referred to as CHIP 2013 and so on. We followed this convention and labeled different years according to the relevant reference periods even if these were not the years during which the data were collected. Most of the CHIP survey rounds were carried out directly by the National Bureau of Statistics (NBS), while others were been conducted by private companies. The CHIP data have no panel component but use a repeated cross-sectional design, and with each wave of the survey, the instruments and other aspects of the survey are revised.

In most waves of the CHIP survey, different samples and survey instruments are used for rural households, urban households, and rural-to-urban migrant households. For the purposes of this chapter, we defined these different types of households according to their type of household registration (or *hukou*) and their usual place of residence. For instance, we defined an

urban household as a household with an urban registration and residence (not necessarily in the same urban area) and rural-to-urban migrants as individuals with rural registrations but who lived in urban areas, either long-term or temporarily. There are very few urban-to-rural migrants in China, and this group is not captured by the CHIP data. The data do not cover the whole of China but do cover many of its main economic and population centers. The survey's precise geographic coverage has varied. For instance, in 2002, 2008, 2009, and 2013, it covered urban households in Anhui, Chongqing, Guangdong, Henan, Hubei, Jiangsu, and Sichuan Provinces. In 2008 and 2013, urban households in Beijing, Gangsu, Liaoning, Shanxi, Yunnan, Shanghai, and Zhejiang Provinces were also covered, while urban households in Hunan and Shandong Provinces being added to the 2013 wave.

For the purposes of our analysis, we needed comparable information on monthly earnings, the existence of employment contracts, and a range of other variables. In the CHIP data, all relevant information on urban households was available for 2002, 2008, 2009, and 2013, while the necessary information on rural-to-urban migrants was only available for 2008, 2009, and 2013 and on rural households only for 2013.<sup>67</sup> Because the information that we needed before the introduction of the Labor Contract Law was only available for urban households, we focused on this type of household. However, as we discuss in Section 2 below, as far as data are available, we were also able to draw some conclusions about rural workers and rural-to-urban migrants. In the CHIP surveys, respondents are questioned about their household-level and individual-level characteristics as well as about the current work status and employment history of the household's members.<sup>68</sup>

Because the survey instruments are different for each wave of the CHIP and for each household types, we carried out a careful harmonization and validation exercise to ensure that our results would be comparable over time and across household types. For instance, most CHIP questionnaires gather information on household members' monthly earnings from their primary jobs (defined as including both wages and various monetary subsidies). However, in some cases, the surveys asked for information on annual earnings instead. For example, this was the case for urban workers in 2002 and 2013, so for these workers, we calculated their monthly earnings by dividing their annual earnings by 12. In addition, while most CHIP questionnaires ask

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<sup>67</sup> Data for the early waves of the CHIP were either not available for us to use in this chapter or did not include all the relevant variables. Similarly, for rural-to-urban migrants in 2002 and for rural households in 2002, 2008, and 2009, the CHIP either collected no information on the existence of an employment contract or, when it was collected, the questionnaire did not explicitly give the absence of a contract as an option.

<sup>68</sup> In each household covered in the CHIP data, some questions concerning the household as a whole were answered by one respondent, usually the household head. Other questions, particularly those concerning individual household members, were answered by different household members themselves.

whether a worker is employed with or without an employment contract, the precise way in which this information is captured again differs somewhat between survey waves and household types. In our harmonization exercise, we simplified different, sometimes complicated survey items on various types of employment contracts to a binary variable that indicated whether a worker held an employment contract or not. Missing values were assigned to observations for which it was not clear whether an employment contract existed or for which the question was not applicable.<sup>69</sup>

Moreover, while the CHIP data include detailed information on labor market characteristics such as hours of work per week and comprehensive sectoral information, some harmonization was again necessary. In particular, we sometimes had to approximate the number of hours of work per week from information on the number of days worked per month and of hours worked per day. The precise coding of sectoral information in the survey differed markedly between waves and between household types. For the purposes of our analysis, we aggregated and standardized this information into 11 broad sectors: agriculture and mining; manufacturing; construction; electricity, gas, and water supply; transport; trade and food services; business and financial services; public and social services; scientific services; and other sectors.

The CHIP data on socio-demographic characteristics includes information on individuals' age and years of schooling. Based on the information on years of schooling, we calculated a harmonized variable that differentiates between three broad groups: individuals with a primary education or less, those with a secondary education, and those with a tertiary education.<sup>70</sup> Information was also available on the provinces in which households are located and on individuals' gender and ethnicity. For the purposes of our analysis, we simplified the information on ethnicity to a dummy variable indicating whether an individual was ethnic Han Chinese or not. The information on households' location was particularly important as the inclusion of dummy variables for various provinces made it possible for us to control for the wide range of geographical differences present in China, including the changing spatial coverage of the CHIP data between waves and spatial differences in price levels within each particular year. Finally, for those individuals that are employed, the CHIP questionnaires asked questions about their type

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<sup>69</sup> Specifically, missing values were assigned to the self-employed, unpaid family workers, part-time workers, and workers in their probationary period. In contrast, we defined workers on short-term contracts (including those pursuing internships and apprenticeships) among workers with employment contracts. We do not describe all our sensitivity tests here, but the details are available from the authors on request. They demonstrate that our main results are robust to excluding workers on short-term contracts.

<sup>70</sup> We defined primary school or less as fewer than six years of schooling, secondary education as six to 12 years of schooling, and tertiary education as more than 12 years of schooling.

of employer. We distinguished among state-owned or public firms; private domestic firms; foreign firms; and collective firms and other types of firms.

In addition, we undertook a detailed data cleaning exercise and excluded any observations with unrealistic variable values. For instance, observations for workers with zero monthly earnings or impossibly high numbers of hours of work per week were dropped. Finally, we only considered individuals aged between 16 and 65 and limited our analysis to one individual per household, usually the household head.<sup>71</sup>

## Analytical Strategy

The microeconomic literature has used a wide range of methods to investigate earnings gaps between different groups of workers such as those with or without employment contracts.<sup>72</sup> Among the most commonly used methods are “single equation” models and “double equation” models. Single equation models are basically earnings regressions in the tradition of Mincer (1974) for the whole economy that include a dummy variable differentiating groups of workers. In double equation models, separate earnings regressions are run for separate groups of workers. The main advantage of double equation models is that they are more flexible and allow intercepts and returns to productive characteristics to differ across groups. They can also be a useful intermediate step for counterfactual decompositions, for example, for an investigation of the proportions of the differences in the average levels of earnings between different groups of workers that are accounted for by the “characteristics effect” and the “coefficients effect”, as originally suggested by Oaxaca (1973).

Decomposing the earnings gap between workers with and without employment contracts can be useful for informing policymakers about the effectiveness of possible interventions to reduce earnings inequality in China. For example, if the decomposition showed that covered workers were experiencing a positive earnings gap due to the characteristics effect, then a policy aimed at reducing differences in labor market characteristics, socio-demographic characteristics, and educational attainment between groups of workers might be required. However, if the gap was due to the coefficients effect, this would be evidence (but not prove) that the labor market was discriminatory against one group of workers. This would be an argument in favor of adopting policies that smooth the differences in how workers with and without employment contracts are treated or that lower the barriers hindering employers and employees from entering into such contracts.

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<sup>71</sup> Sensitivity tests that not reported here but are available from the authors on request demonstrated that our main results are robust to including all household members aged between 16 and 65 in the analysis.

<sup>72</sup> The exposition of this section and Annex 9A draw on Bhaumik et al (2006) and Gang and Schmillen (2017)

Bhaumik et al (2006) noted that the coefficients effect generally incorporates the effect of differences in the constant term between groups of workers. The coefficients of the constant terms explain the wage gap between workers with and without employment contracts that is not attributable to explanatory variables. Hence, the difference in the constant terms can be separated from the effects of the other coefficients and may be interpreted as baseline differences between the two groups of workers. Moreover, the characteristics and coefficients effects can be further decomposed into the effects of subgroups of variables or even individual variables. This detailed level of disaggregation can also be important from a policy perspective. For instance, characteristics effects associated with subgroups of variables or individual variables can point towards specific areas where more or more targeted public investments might reduce earnings inequality between covered and uncovered workers.<sup>73</sup>

The explanatory variables that we chose were labor market characteristics (defined as hours of work per week), socio-demographic characteristics (gender, Han Chinese ethnicity, age, and age squared), employer type (state-owned or public firm, private domestic firm, foreign firm, or collective firm or other), education (primary or less, secondary, or tertiary) sector of work, and location of household (province). Our selection of explanatory variables was based on standard human capital theory.<sup>74</sup>

### 3. Results

#### Descriptive Statistics

Table 9.2 summarize statistics for various variables related to individuals' earnings, labor market characteristics, socio-demographic characteristics, firm type, and education in 2002, 2008, 2009, and 2013. The tables display the means and standard deviations for all relevant variables separately for workers with and without employment contracts. Additionally, the tables present the results of t-tests for differences in characteristics between the two groups.<sup>75</sup>

<sup>73</sup> In detailed decompositions, the results for the categorical variables might depend on which category is chosen as the omitted base category. To arrive at results that were independent of this choice, we followed common practice and first estimated the group models with a standard dummy coding. Then, we transformed the coefficient vectors so that they represented deviations from the grand mean and then added the coefficient for the base category.

<sup>74</sup> While data on the occupation dummies were available in the CHIP data set, we did not include them among the explanatory variables because of their potential endogeneity.

<sup>75</sup> The CHIP data do not result from purely random sampling, and sampling weights for the data sets are unavailable. Therefore, the descriptive evidence of Error! Reference source not found. and Table 9.2 should not be interpreted as being representative of China's labor market. Nevertheless, the estimates from the regressions and decompositions in this chapter can be expected to be asymptotically consistent. As previously discussed, the sample sizes for the various years of CHIP data also differ. Overall, 2,757, 2,794, 2,729, and 3,634 individuals fulfilled the sample restrictions underlying the baseline decomposition in 2002, 2008, 2009, and 2013 respectively.

**Table 9.1: Characteristics of Individuals, 2002 and 2008**

| <i>Year</i>                       | <i>2002</i>     |                | <i>2008</i>    |                 |
|-----------------------------------|-----------------|----------------|----------------|-----------------|
| Employment contract               | Yes             | No             | Yes            | No              |
| Earnings                          |                 |                |                |                 |
| Monthly earnings (yuan)           | 1,053<br>(14.4) | ***<br>(46.9)  | 807<br>(40.9)  | 2,513<br>(65.3) |
| Labor market characteristics      |                 |                |                |                 |
| Hours of work per week            | 46.3<br>(0.20)  | ***<br>(1.21)  | 55.3<br>(0.19) | 42.4<br>(1.03)  |
| Socio-demographic characteristics |                 |                |                |                 |
| Male                              | 0.71<br>(0.01)  | 0.66<br>(0.03) | 0.70<br>(0.01) | **<br>(0.03)    |
| Han                               | 0.97<br>(0.00)  | 0.95<br>(0.01) | 0.99<br>(0.00) | 0.99<br>(0.01)  |
| Age                               | 43.5<br>(0.15)  | 42.8<br>(0.49) | 43.0<br>(0.17) | ***<br>(0.59)   |
| Firm type                         |                 |                |                |                 |
| State-owned / public firm         | 0.66<br>(0.01)  | ***<br>(0.03)  | 0.19<br>(0.01) | 0.68<br>(0.03)  |
| Private domestic firm             | 0.05<br>(0.00)  | ***<br>(0.03)  | 0.53<br>(0.01) | 0.19<br>(0.03)  |
| Foreign firm                      | 0.03<br>(0.00)  | 0.02<br>(0.01) | 0.04<br>(0.00) | *<br>(0.01)     |
| Collective / other firm           | 0.26<br>(0.01)  | 0.26<br>(0.03) | 0.10<br>(0.01) | 0.11<br>(0.02)  |
| Education                         |                 |                |                |                 |
| Primary                           | 0.04<br>(0.00)  | ***<br>(0.02)  | 0.10<br>(0.03) | 0.02<br>(0.01)  |
| Secondary                         | 0.72<br>(0.01)  | 0.77<br>(0.03) | 0.59<br>(0.01) | ***<br>(0.03)   |
| Tertiary                          | 0.24<br>(0.01)  | ***<br>(0.02)  | 0.14<br>(0.01) | 0.39<br>(0.02)  |
| Number of observations            | 2,538           | 219            | 2,563          | 231             |

*Source:* Author's calculations based on CHIP data.

*Note:* The figures within the parentheses are linearized standard errors. The symbols \*, \*\*, and \*\*\* indicate significance at the 10, 5, and 1 percent levels respectively. Industry and location variables are not depicted.

**Table 9.2: Characteristics of Individuals, 2009 and 2013**

| <i>Year</i>             | <i>2009</i>     |               | <i>2013</i>     |                 |
|-------------------------|-----------------|---------------|-----------------|-----------------|
| Employment contract     | Yes             | No            | Yes             | No              |
| Earnings                |                 |               |                 |                 |
| Monthly earnings (yuan) | 2,959<br>(66.1) | ***<br>(83.4) | 1,579<br>(47.6) | 3,859<br>(58.6) |



| Year                              | 2009   |     |        | 2013   |     |        |
|-----------------------------------|--------|-----|--------|--------|-----|--------|
| Labor market characteristics      |        |     |        |        |     |        |
| Hours of work per week            | 42.1   | *** | 46.2   | 48.6   | *** | 53.9   |
|                                   | (0.18) |     | (0.85) | (0.18) |     | (0.56) |
| Socio-demographic characteristics |        |     |        |        |     |        |
| Male                              | 0.71   | *** | 0.62   | 0.77   |     | 0.76   |
|                                   | (0.01) |     | (0.03) | (0.01) |     | (0.02) |
| Han                               | 0.99   | **  | 0.98   | 0.96   |     | 0.96   |
|                                   | (0.00) |     | (0.01) | (0.00) |     | (0.01) |
| Age                               | 43.6   | *** | 46.5   | 42.9   | *** | 45.7   |
|                                   | (0.17) |     | (0.56) | (0.16) |     | (0.36) |
| Firm type                         |        |     |        |        |     |        |
| State-owned / public firm         | 0.68   | *** | 0.29   | 0.64   | *** | 0.01   |
|                                   | (0.01) |     | (0.03) | (0.10) |     | (0.01) |
| Private domestic firm             | 0.18   | *** | 0.56   | 0.23   | *** | 0.68   |
|                                   | (0.01) |     | (0.03) | (0.01) |     | (0.02) |
| Foreign firm                      | 0.04   |     | 0.02   | 0.03   | *** | 0.01   |
|                                   | (0.00) |     | (0.01) | (0.00) |     | (0.00) |
| Collective / other firm           | 0.10   |     | 0.13   | 0.10   | *** | 0.22   |
|                                   | (0.01) |     | (0.02) | (0.01) |     | (0.02) |
| Education                         |        |     |        |        |     |        |
| Primary                           | 0.02   | *** | 0.11   | 0.03   | *** | 0.13   |
|                                   | (0.00) |     | (0.02) | (0.00) |     | (0.01) |
| Secondary                         | 0.57   | *** | 0.75   | 0.52   | *** | 0.79   |
|                                   | (0.01) |     | (0.03) | (0.01) |     | (0.02) |
| Tertiary                          | 0.41   | *** | 0.14   | 0.45   | *** | 0.08   |
|                                   | (0.01) |     | (0.02) | (0.01) |     | (0.01) |
| Number of observations            | 2,487  |     | 242    | 2,966  |     | 668    |

Source: Author's calculations based on CHIP data.

Note: The figures within the parentheses are linearized standard errors. The symbols \*, \*\*, and \*\*\* indicate significance at the 10, 5, and 1 percent levels respectively. Industry and location variables are not depicted.

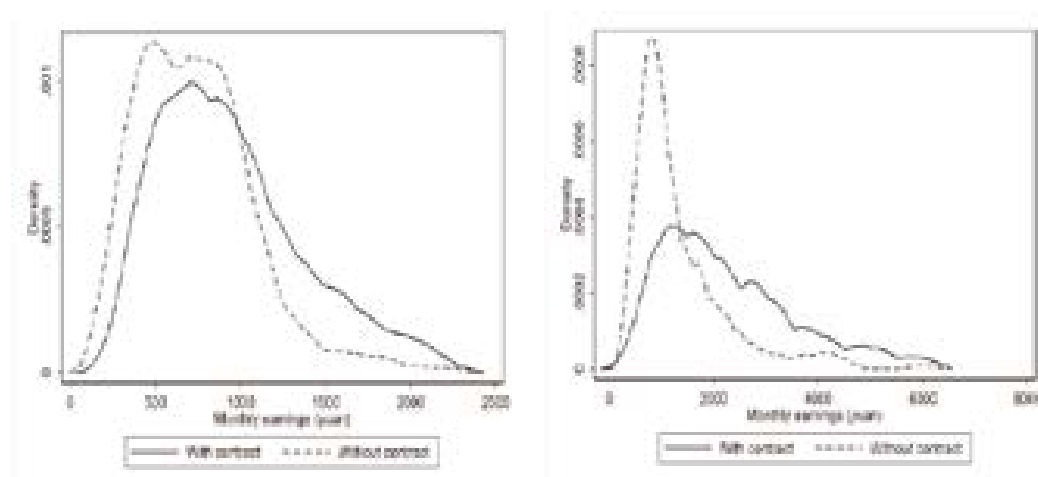
Table 9.2 make it clear that there are many statistically and economically significant differences in the average characteristics of workers with and without employment contracts. They also demonstrate at least three noteworthy findings about the time series of average monthly earnings. First, average monthly earnings for both groups of workers grew rapidly throughout the investigation period. Second, throughout the investigation period, workers with employment contracts had significantly higher average monthly earnings than those without a contract. On average, workers with employment contracts earned Yuan 1,053, Yuan 2,513, Yuan 2,959, and Yuan 3,859 per month in 2002, 2008, 2009, and 2013 respectively. The average monthly earnings of workers without contracts in the same years were Yuan 807, Yuan 1,332, Yuan 1,579, and Yuan 2,233. For all four years, the earnings differentials between covered and uncovered workers were statistically significant at the 1 percent level. Third, both in absolute and relative terms,

the earnings gap between groups of workers was more pronounced in 2008, 2009, and 2013 (when it ranged from Yuan 1,181 to Yuan 1,626 or 73 percent to 89 percent) than in 2002 (when it amounted to Yuan 246 or 30 percent).

The evident two-tier earnings structure of China's labor market is presented in Figure 9.1 and Figure 9.2. The figures plot the distributions of monthly earnings in 2002, 2008, 2009 and 2013 separately for workers with and without employment contracts. They confirm our three noteworthy findings from and Table 9.2, including that average monthly earnings for covered workers were higher than those for workers with no contract in all four years of the investigation period. In addition, the figures suggest that the distribution of covered workers' earnings shifted significantly to the right between 2002 and 2008, whereas monthly earnings grew at a slower pace for most uncovered workers. Consequently, the earnings gaps between the two groups of workers were wider in 2008, 2009, and 2013 than in 2002.

**Figure 9.1: Distribution of Monthly Earnings, 2002 and 2008**

Panel A – Distribution of Earnings in 2002      Panel B – Distribution of Earnings in 2008



*Source:* Author's calculations based on CHIP data.

*Note:* Depicted are Kernel density estimations with alternative Epanechnikov kernel functions and 512 density points. The lowest 1 percent and highest 5 percent of earnings in 2002 and 2008 are excluded.

Among other findings, and Table 9.2 also demonstrate that workers without employment contracts were likely to work longer hours throughout the investigation period. Between 2002 and 2013, average hours of work per week ranged from 42.1 to 48.6 for workers with contracts and from 46.2 to 55.3 for those without them. Some socio-demographic variables also vary widely between the two groups of workers. We found statistically significant differences with respect to workers' average ages in three out of the four survey waves. For instance, in 2013, the average age of workers with employment contracts was 42.9 years old, while it was 45.7 years for

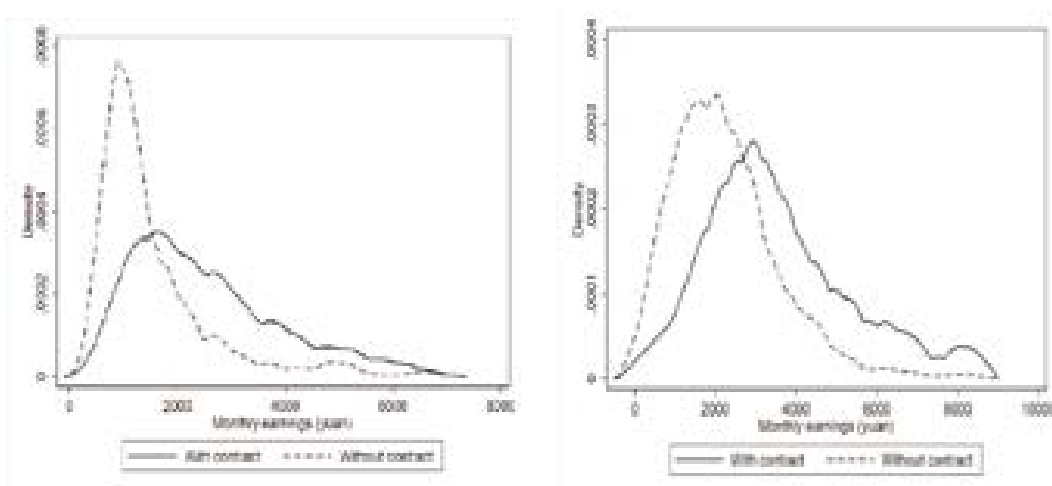
workers without contracts. Moreover, there is also some limited evidence that the percentage of men and ethnic Han Chinese is higher among workers with employment contracts. However, while the CHIP data reveal that the proportion of Han Chinese was very high in the sample for all four waves, it differed significantly between the two groups of workers only in 2009.

While and Table 9.2 show that any differences in gender and ethnicity between covered and uncovered workers are not substantial, the average educational attainment of workers varied markedly between the two groups of workers throughout the investigation period. On the one hand, whereas fewer than 5 percent of workers with employment contracts had only obtained primary education, this was the case for about 10 percent of workers with no contracts. On the other hand, between 25 and 45 percent of workers with employment contracts but only 10 to 15 percent of workers with no contracts had at least some tertiary education. Finally, firm types also differed markedly between the two groups. For instance, throughout the investigation period, covered workers were dramatically less likely than uncovered workers to work in private domestic firms (a range of 5 to 23 percent versus 53 to 68 percent) but much more likely to work in state-owned or public firms (a range of 64 to 68 percent versus only 1 to 30 percent). In all four waves of the CHIP survey that we considered, these differences were statistically significant at the 1 percent level. In general, the picture that emerges from and Table 9.2 is that, in urban China between 2002 and 2013, not only average earnings but also several other aspects of employment differed considerably between workers with employment contracts and those without them.

**Figure 9.2: Distribution of Monthly Earnings, 2009 and 2013**

Panel A – Distribution of Earnings in 2009

Panel B – Distribution of Earnings in 2013



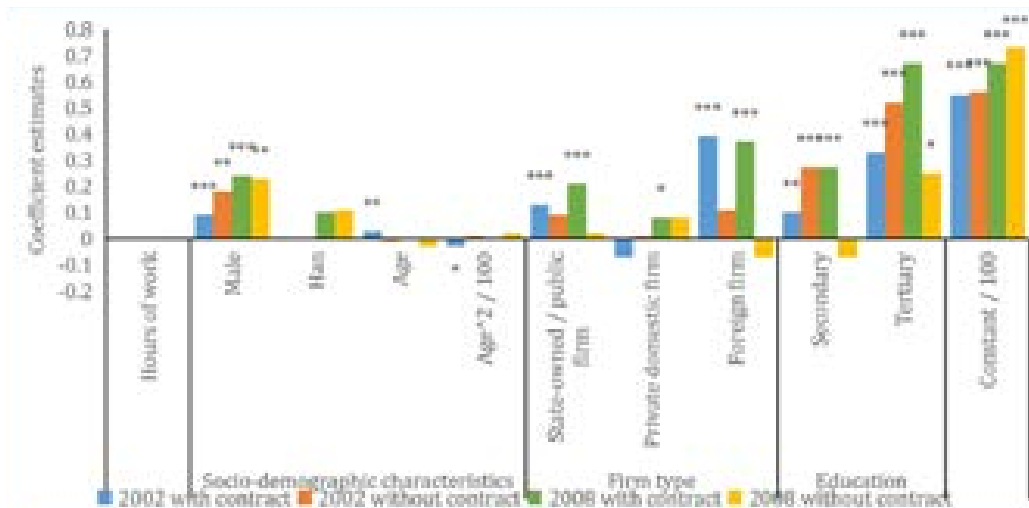
**Source:** Author's calculations based on CHIP data.

**Note:** Depicted are Kernel density estimations with alternative Epanechnikov kernel functions and 512 density points. The lowest 1 percent and highest 5 percent of earnings in 2009 and 2013 are excluded.

## Earnings Regressions

Figure 9.3 and Figure 9.4 estimate the correlates of the log monthly earnings of urban workers. We estimated the functions of log monthly earnings separately for 2002, 2008, 2009, and 2013 and for workers with and without employment contracts. All of the results depicted in the figures are based on ordinary least squares (OLS) regressions.

**Figure 9.3: Earnings Regressions, 2002 and 2008**



Source: Author's calculations based on CHIP data and Schmillen (2019).

Note: The symbols \*, \*\*, and \*\*\* indicate significance at the 10, 5, and 1 percent levels respectively. Industry and location are not depicted. The results are based on OLS estimations.

Figure 9.3 and Figure 9.4 show that, in spite of some differences between workers with and without employment contracts and across time, the patterns associated with the correlates of log monthly earnings appear to be similar for the two groups of workers and across the four waves of the CHIP survey. Also, the overall picture that emerges from the figures is that the direction and size of the individual regression coefficients are generally those that could be expected from the estimation of such earnings equations in the tradition of Mincer (1974).

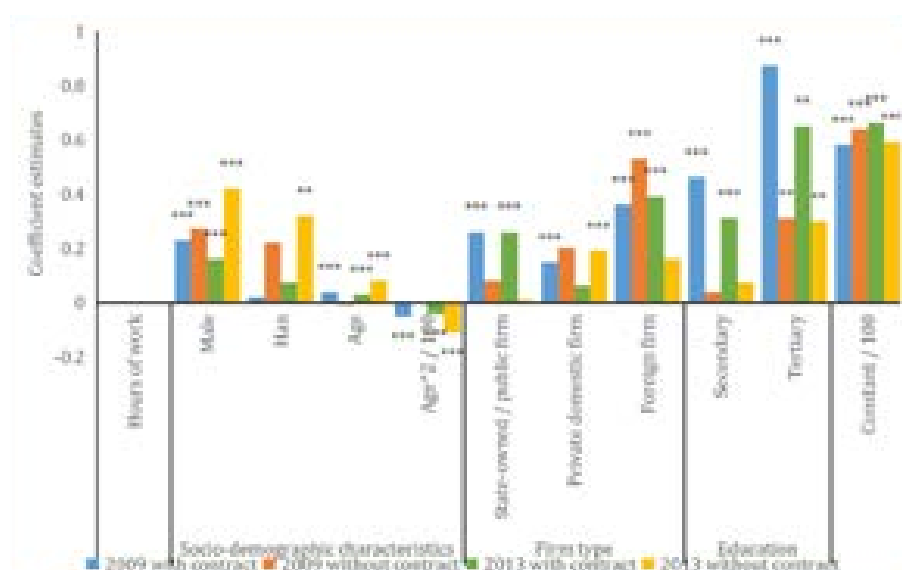
Maybe most strikingly, Figure 9.3 and Figure 9.4 demonstrate that, for workers both with and without employment contracts, average monthly earnings are higher for better educated individuals all other things being equal.<sup>76</sup> In addition, for both groups of workers, there is some (relatively weak) evidence that earnings tend to increase with age but potentially with

<sup>76</sup> It should be noted that Figure 9.3 and Figure 9.4 do not correct for the possible endogeneity of educational choice and, therefore, we have not made any causal statements about the returns to education in China.

a declining rate. Thus, over a worker's lifecycle, earnings appear to exhibit an inverse u-shaped path. However, this pattern is only statistically significant for some samples. With regard to gender, a statistically significant gender earnings gap exists for both workers with and without contracts and in all four waves of the CHIP survey. This finding is particularly worth highlighting because closing gender earnings gaps and, more broadly, increasing women's access to economic opportunity are key policy objectives in China and beyond.

Concerning the different firm type variables, Figure 9.3 and Figure 9.4 present some evidence that, for workers with employment contracts, earnings tend to be higher in state-owned, public, and foreign firms than in collective and other firms (which is the reference category in Figure 9.3 and Figure 9.4). We did not observe this pattern among workers with no contracts. In contrast, there is some evidence that, for workers with no contracts -, employees of private domestic firm have enjoyed an earnings premium since at least 2008. Note that we were able to estimate the earnings differences across firm types more precisely for workers with employment contracts. This is likely due to the larger number of observations for this group of workers.

**Figure 9.4: Earnings Regressions, 2009 and 2013**



**Source:** Author's calculations based on CHIP data and Schmillen (2019).

**Note:** The symbols \*, \*\*, and \*\*\* indicate significance at the 10, 5, and 1 percent levels respectively. Industry and location are not depicted. The results are based on OLS estimations.

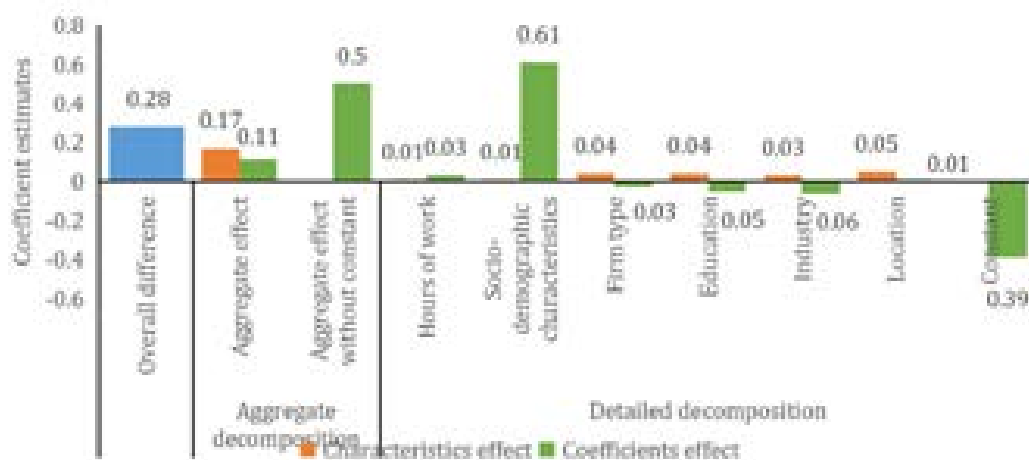
Figure 9.3 and Figure 9.4 show that an earnings premium for ethnic Han Chinese workers was only present for uncovered workers in 2013. For covered workers and for uncovered workers in years other than 2013, the earnings of Han Chinese and those of workers of other ethnicities did not differ in a statistically significant way. Figure 9.3 and Figure 9.4 also show that there is no statistically significant correlation between monthly earnings and hours of work per week for either workers with or without employment

contracts or in any of the survey years. This perhaps surprising finding might reflect two (unobservable) countervailing factors. On the one hand, an additional hour of work per week would be expected to increase monthly earnings all other things being equal. On the other hand, jobs requiring lower skills might often be associated with higher average weekly working hours.

### **Benchmark Decompositions**

Figure 9.5 to Figure 9.8 summarize our results from four Oaxaca-type decompositions of monthly earnings based on the earnings regressions from Figure 9.3 and Figure 9.4. The decompositions were done to explain how much of the overall differences in the logarithm of monthly earnings between workers with and without employment contracts can be attributed either to differences in individuals' characteristics or to differences in the impact of these characteristics on earnings – and how these patterns have changed over time, particularly following the introduction of the Labor Contract Law in 2008.

Most importantly, Figure 9.5 to Figure 9.8 summarize our main findings with regard to the overall difference in monthly earnings between workers with and without employment contracts and whether these differences can be attributed to characteristics or coefficients effects. With regard to the overall difference in monthly earnings between covered and uncovered workers, the figures demonstrate two central points. First, the difference was statistically and economically significant in all four years of the CHIP survey that we analyzed, amounting to 0.28 log points in 2002, 0.60 log points in 2008, 0.59 log points in 2009, and 0.58 log points in 2013. The finding of a significant earnings gap between the two groups of workers is consistent with the descriptive evidence presented in and Table 9.2 and with the conclusions reached in Error! Reference source not found. and other existing studies. Second, Figure 9.5 and Figure 9.6 also show that overall differences in log monthly earnings between the two groups more than doubled between 2002 and 2008 (the year the Labor Contract Law was introduced) and thereafter stayed remarkably constant. This is again consistent with the descriptive evidence presented in and Table 9.2.

**Figure 9.5: Benchmark Earnings Decompositions, 2002**

Source: Author's calculations based on CHIP data and Schmillen (2019).

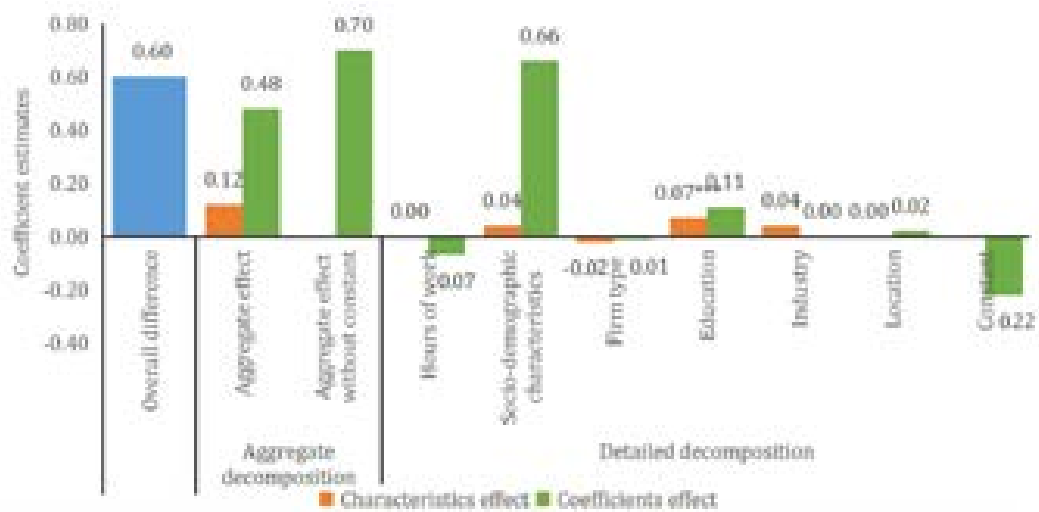
Note: The symbols \*, \*\*, and \*\*\* indicate significance at the 10, 5, and 1 percent levels respectively. The decompositions are based on the earnings regressions in Figure 9.3.

In addition to the estimates of the overall difference in monthly earnings, the two other sets of central estimates from Figure 9.5 to Figure 9.8 are those for the aggregate characteristics and coefficients effects. According to Figure 9.5, for 2002 the aggregate characteristics effect amounted to 0.17 log points and was statistically significant at the 1 percent level. This means that, if in 2002 employees with and without employment contracts had had the same regression coefficients (meaning the impact of their characteristics on their monthly earnings had been identical), then the logarithm of monthly earnings of covered workers would have been higher than that of uncovered workers by 0.17 log points solely due to differences in their characteristics. In other words, in 2002 workers with employment contracts would have been worse off if the differences between their characteristics and those of the workers with no employment contracts had disappeared. The figure also shows that, in 2002, the aggregate coefficients effect was not statistically significant at any conventional level. Therefore, in 2002 the significant differences in average earnings between covered and uncovered workers in urban China can entirely be explained by differences in the observable characteristics of the two groups of workers.

According to Figure 9.6 to 9.8, the aggregate characteristics effects in 2008, 2009, and 2013 amounted to 0.12, 0.08, and 0.11 log points respectively. In all three years, the magnitude of the aggregate characteristics effect stayed more or less the same at a somewhat lower level than in 2002 and was statistically significant at the 5 percent or the 10 percent level. This means that, in these three years, workers with employment contracts would have continued to be worse off if the differences between their characteristics and those of the workers without employment contracts had disappeared. In the same three years, the aggregate coefficients effects amounted to 0.48,

0.51, and 0.46 log points respectively. Also, the magnitude of the aggregate coefficients effect stayed more or less the same in all three years, but was significantly higher than in 2002. It was statistically significant at the 1 percent level. Thus, following the introduction of the Labor Contract Law, covered workers would have been significantly worse off in the absence of any differences between the two groups of workers in the effectiveness of, or the returns to, their observable characteristics.

**Figure 9.6: Benchmark Earnings Decompositions, 2008**



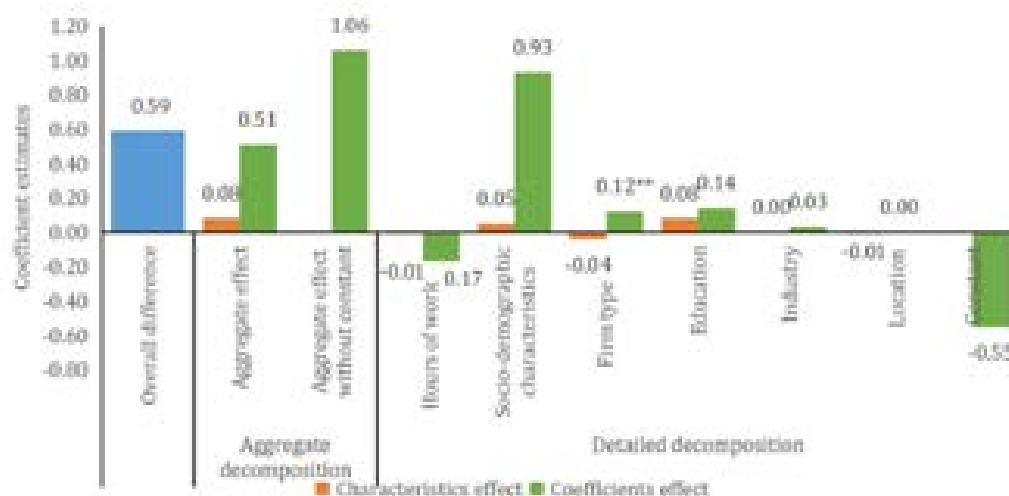
*Source:* Author's calculations based on CHIP data and Schmillen (2019).

*Note:* The symbols \*, \*\*, and \*\*\* indicate significance at the 10, 5, and 1 percent levels respectively. The decompositions are based on the earnings regressions in Figure 9.3.

In essence, the log earnings gap between covered and uncovered workers more than doubled between 2002 and 2008, and this doubling could not be attributed to any new differences in the observable characteristics of the two groups of workers but was instead entirely due to increased differences in the impacts of the workers' observable characteristics on their earnings. Therefore, these findings lend strong support to the hypothesis that the widening of the earnings gap between 2002 and 2008 was indeed at least partly the outcome of the tightening of employment protection legislation.

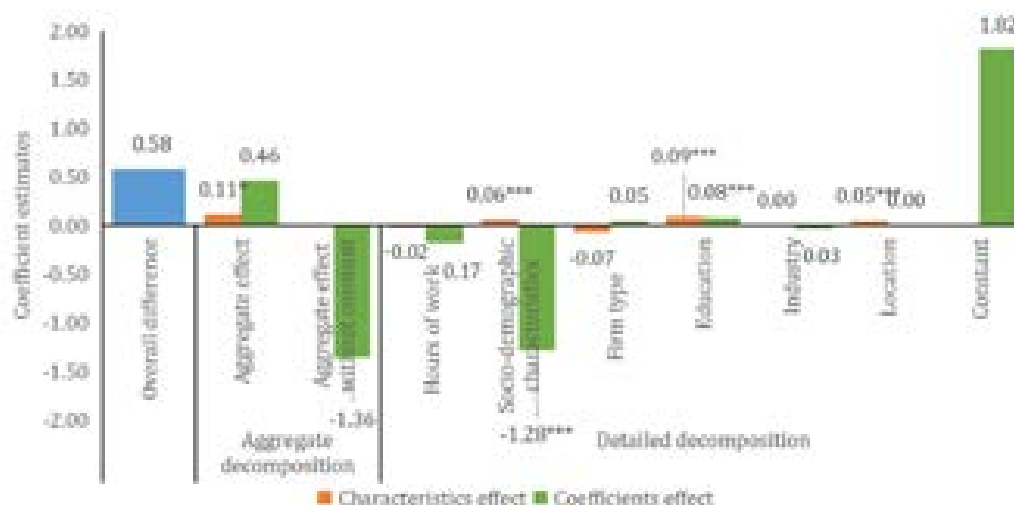
In addition, Figure 9.5 also show how different variables or groups of variables influenced the aggregate characteristics and coefficients effects between 2002 and 2013 and how that influence changed over time. Our disaggregation of the characteristics effects shows that workers with employment contracts benefitted significantly from being better educated on average than workers with no employment contracts in all four years.



**Figure 9.7: Benchmark Earnings Decompositions, 2009**

Source: Author's calculations based on CHIP data and Schmillen (2019).

Note: The symbols \*, \*\*, and \*\*\* indicate significance at the 10, 5, and 1 percent levels respectively. The decompositions are based on the earnings regressions in Figure 9.4.

**Figure 9.8: Benchmark Earnings Decompositions, 2013**

Source: Author's calculations based on CHIP data and Schmillen (2019).

Note: The symbols \*, \*\*, and \*\*\* indicate significance at the 10, 5, and 1 percent levels respectively. The decompositions are based on the earnings regressions in Figure 9.4.

At least in parts of the investigation period, differences in observable socio-demographic characteristics also explained a significant portion of the earnings gap between covered and uncovered workers. According to our earnings decompositions for 2008, 2009, and 2013, workers with employment contracts were more likely to have socio-demographic characteristics that were favorable to participating in the labor market. In 2002, the characteristics effect for socio-demographic characteristics was not

statistically significant. Figure 9.5 also appear to indicate that workers with employment contracts have more favorable observable characteristics in terms of their location. However, this is probably an indication of the importance of including control variables for workers' locations in the estimation.

Other groups of variables did not explain a statistically significant share of the overall characteristics effect. Surprisingly, this was not the case for the firm type variable even though, as documented above, workers with employment contracts are significantly more likely to work in the public sector where firms tend to pay higher wages than the private sector. This is probably because of the relatively low power of the decompositions coupled with our observation that we were not able to estimate earnings differences across firm types very precisely for workers without employment contracts.

Figure 9.5 to Figure 9.8 show that we identified only a very limited number of variables as statistically significant drivers of the coefficients effect. In fact, in 2002 none of the following variables were associated with a statistically significant coefficients effect – labor market characteristics, socio-demographic characteristics, firm type, education, industry, and location. In 2008, 2009, and 2013, the only statistically significant coefficients effects that we found were associated with the education variable.

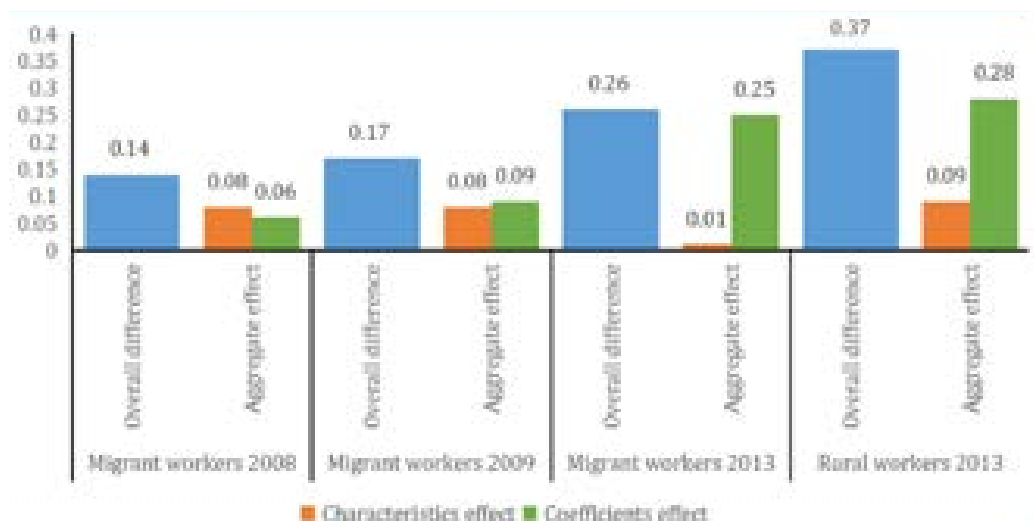
### Robustness Checks

Figure 9.9 Although our analysis focused on urban residents, Figure 9.9 shows that a qualitatively consistent picture emerged for rural workers and rural-to-urban migrants. In principle, one of the main advantages of the CHIP data is the inclusion of workers with different types of household registration and place of regular residence. Nevertheless, it was not feasible for us to carry out decompositions of the earnings of covered and uncovered rural-to-urban migrant workers for the year 2002 or of rural workers for the years 2002, 2008, or 2009. Therefore, we were unable to carry out Oaxaca-type decompositions for these groups before the introduction of the Labor Contract Law, so Figure 9.9 summarizes only the characteristics and coefficients effects for these groups after the introduction of the law.

According to Figure 9.9, there were generally smaller overall differences in monthly earnings between covered and uncovered migrant and rural workers than between covered and uncovered urban workers. For migrant workers, the overall differences amounted to 0.14 log points, 0.17 log points, and 0.26 log points in 2008, 2009, and 2013 respectively, while for rural workers, they stood at 0.37 log points in 2013. Throughout the period following the introduction of the Labor Contract Law, most of the overall differences in monthly earnings between covered and uncovered migrant and rural workers could be attributed to the coefficients effect, which was the same finding as in the case of urban workers. The predominance of the coefficients effect was particularly striking in 2013. Therefore, a picture emerges that is qualitatively

consistent for urban workers, rural workers, and rural-to-urban migrants.<sup>77</sup>

**Figure 9.9: Robustness of Earnings Decompositions, 2008-2013**



Source: Author's calculations based on CHIP data and Schmillen (2019).

Note: The symbols \*, \*\*, and \*\*\* indicate significance at the 10, 5, and 1 percent levels respectively. Detailed decompositions are not depicted.

## 4. Conclusions

In this chapter, we have documented gaps in monthly earnings between those workers covered by employment protection legislation in China and those who are not and whether those gaps changed after the introduction of the relatively restrictive Labor Contract Law in 2008. In addition, we used earnings decompositions to determine the proportion of the differences in the average levels of monthly earnings between workers with and without employment contracts that was due to differences in individuals' characteristics and to differences in the impact on earnings of these characteristics and whether and how these proportions changed with the introduction of the Law. While our analysis mainly focused on urban workers, we also considered rural workers and rural-to-urban migrants.

We found that, throughout the investigation period, the average monthly earnings of urban workers with employment contracts were significantly higher than those of urban workers with no contracts, thus confirming the results found by the existing literature. We also found that the introduction

<sup>77</sup> In addition, our results are also consistent with the findings of Schmillen (2019) who investigated wage differences between rural and urban workers using various different specifications and also addressed the issue of selection into labor force participation. This is important because, in the context of analyzing earnings gaps between different groups of workers, if individuals have unobserved characteristics that affect both their probability of participating in the labor force and their earnings, then estimates that do not account for selection into the labor force are at risk of being biased and inconsistent.

of the Labor Contract Law went hand in hand with a significant widening of the average gap in log monthly earnings between covered and uncovered workers. Between 2002 and 2008, the gap more than doubled from 0.28 log points to 0.60 log points and stayed constant thereafter. Moreover, before the introduction of the Law, differences in average earnings between urban workers with and without employment contracts could entirely be accounted for by differences in their observable characteristics. However, the subsequent increase in the average earnings gap was entirely due to the impact of their observable characteristics on their earnings. A consistent picture also emerged regarding rural workers and rural-to-urban migrants.

Our findings lend strong support to the hypothesis that the widening of the earnings gap was indeed an outcome of the tightening of employment protection legislation through the introduction of the Labor Contract Law. This is consistent with recent theoretical explorations of the interplay between two-tiered earnings structures and labor market reform, including Boeri's (2011) theoretical model of a two-tier labor market according to which a tightening in employment protection legislation will increase the earnings premium for workers covered by this legislation over unprotected workers. Our findings also complement the results of existing studies of European countries regarding how tightening employment protection legislation affects earnings differences between those workers covered by the legislation and those who are not covered.

Our analysis in this chapter argues in favor of policies to smooth differences in the treatment of workers with and without employment contracts and/or to lower the barriers hindering employers and employees from entering into such a contract. A more detailed investigation of the mechanisms underlying the trade-off between protecting workers covered by the Labor Contract Law and limiting the earnings gap between covered and uncovered workers was beyond the scope of this chapter (exploring, for example, the conversion rate of uncovered positions into covered jobs and the destruction rates of uncovered and covered jobs as featured prominently in the model in Boeri, 2011). Also, beyond our scope was an in-depth investigation of the resulting implications for overall inequality, poverty, or welfare. Such investigations would constitute worthwhile follow-up work.

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## Annex 9A

In this chapter, we used the two-step decomposition method introduced by Oaxaca (1973). In the first step, we estimated the correlates of monthly earnings separately for covered and uncovered workers. In the second step, we decomposed the differences in mean monthly earnings of the two groups into a characteristics effect and a coefficients effect. Formally, the stylized Oaxaca-type decomposition equation of the

second step can be written as:

$$(8.1) \quad \bar{Y}_{contract} - \bar{Y}_{nocontract} = (X_{contract} - \bar{X}_{nocontract})\beta_{contract} + \bar{X}_{nocontract}(\beta_{contract} - \beta_{nocontract}) + \bar{e}_{contract} - \bar{e}_{nocontract}$$

or alternatively as:

$$(8.2) \quad \bar{Y}_{contract} - \bar{Y}_{nocontract} = (X_{contract} - \bar{X}_{nocontract})\beta_{nocontract} + \bar{X}_{contract}(\beta_{contract} - \beta_{nocontract}) + \bar{e}_{contract} - \bar{e}_{nocontract}$$

In Equation (8.1) and Equation (8.2),  $\bar{Y}_c$  denotes average log monthly earnings,  $\bar{X}_c$  is a  $1 \times K$  vector of average individual characteristics of workers with an employment contract of type  $c=\{\text{contract, nocontract}\}$ ,  $\beta_c$  is a  $K \times 1$  vector of parameters, and  $\bar{e}_c$  the average error terms (zero by construction). The first, second, and third components of the right-hand side of Equation (8.1) and Equation (8.2) are the characteristics, the coefficients, and the residuals effects respectively. The key differences between Equation (8.1) and Equation (8.2) are that Equation (8.1) uses covered workers' coefficients as the baseline while the baseline for Equation (8.2) is uncovered workers' coefficients. In this chapter, we used covered workers' coefficients. Robustness checks (which are not reported here but are available from the authors on request) showed that our results are qualitatively robust to using uncovered workers' coefficients.

# The Future of China's Labor Regulations

Josefina Posadas and Achim Schmillen

### 1. Recap

As discussed in Chapter 1 of this edited volume, in recent years it has become an increasingly accepted view that policymakers need to find the right balance between too little labor regulation (resulting in a lack of protection for workers) and too much (resulting in a lack of flexibility). According to this perspective, detrimental effects are associated with each of these two extremes. Betcherman (2014 and 2015) has argued that governments should aim to stay within this intermediate space that he calls the “plateau.” Within this plateau, governments have a large degree of flexibility to design more or less stringent labor regulations depending on societal preferences. Trade-offs still have to be made even within the plateau between greater efficiency (achieved through more flexible labor regulations) and more redistribution (which often goes along with the stringent protection of workers), but the effects of these plateau regulations are generally modest and gradual. Therefore, governments can choose where exactly they want to be situated depending on their social contract and normative preferences for redistribution and/or efficiency without risking any dramatic negative consequences for their labor market outcomes.

However, and again according to Betcherman (2014 and 2015), around the plateau there are two “cliffs” related to over- and under-regulation. Falling off these cliffs means losing either flexibility or worker protection in a substantial and sudden manner. Therefore, governments are advised to exploit their margin of maneuver in setting labor regulations, while making sure they do not fall off a cliff. The recommended action is to pursue incremental reforms, monitor their impacts, and ensure that they have no unintended consequences.

This edited volume has found that, since the introduction of China's Minimum Wage Regulations in 2004, minimum wages have not been binding for most workers. However, they have been binding for certain groups of low-wage workers. As a result, wages may have increased for some of

these workers, employment levels may have dropped modestly, and overall inequality and poverty may have fallen slightly. As far as minimum wages are concerned, the analysis places China squarely on the plateau between over- and under-protection. In other words, China has room to exploit trade-offs between efficiency and redistribution without running the risk of a dramatic negative impact on labor market flexibility or on worker protection.

With regard to China's employment protection legislation, this edited volume has found that the Labor Contract Law that was introduced in 2008 and was tightened in 2012 increased the number of workers covered by employment contracts as well as the proportion of workers covered by social insurance. It appears that the law might have had some negative impacts on firms, but these have probably been quite small because weak governance has meant that it is not enforced in a uniform and stringent way. This means that, in practice, today's employment protection legislation in China is only moderately strict. At the same time, according to the most widely used measure of the *de jure* stringency of employment protection legislation, the OECD's Employment Protection Legislation Index, China has one of the most protected labor markets in the world, particularly regarding the protection afforded to permanent workers. In addition, the Labor Contract Law was introduced at a time when the earnings gap between covered and uncovered workers had significantly widened. Hence, China's employment protection legislation seems to be outside of the plateau. Instead, the picture that emerges is consistent with what Betcherman (2015) and others have called a "two-tier" or "two-track" labor market.

## 2. The Changing Nature of Work

As succinctly summarized by the title of World Bank's most recent World Development Report (World Bank, 2018b), the "Changing Nature of Work" is presenting tremendous challenges to policymakers and development practitioners worldwide.<sup>78</sup> The key drivers of this change include demographic change and globalization as well as recent breakthroughs in technology such as artificial intelligence (AI) and robotics. There is growing fear that new technology will lead to the wholesale replacement of human workers by machines and an era of mass joblessness and ever wider income inequality. Claims are mounting that the world is on the brink of a Fourth Industrial Revolution that will dwarf the previous revolutions in terms of the scale, speed, and scope of the disruption that it causes.

A defining characteristic of the recent breakthroughs is that these new digital technologies are capable of performing not only routine manual and cognitive tasks but also some non-routine tasks that hitherto only humans

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<sup>78</sup> This and the following section are partly based on Chua et al (2018).



could perform. They can apply logic and information to provide a wide array of goods and services, from automated manufacturing and transportation to bookkeeping and judicial decisions (Brynjolfsson and McAfee 2011 and 2014).

The advent of the Fourth Industrial Revolution is particularly evident in developed economies, but there are also growing signs of it in developing and emerging countries. China in particular is at the forefront of the digital and computing revolution. This has already had repercussions for the country's labor market. As demonstrated in Chapter 3, over the last three decades, the country's industrial and occupational structure outside the agricultural sector has become increasingly polarized. In other words, the employment share of middle-waged industries and occupations has decreased. More recently, Foxconn, the world's largest electronics assembler, cut its workforce by 30 percent when it brought robots into the production process. Ant Financial, JD Finance, and other financial services firms have started to use big data to assess loan agreements instead of hiring loan officers or lawyers. While in 2016 China ranked 23rd in the world in terms of robot density per worker, it aims to be in the top 10 by 2020 (World Bank 2018b).

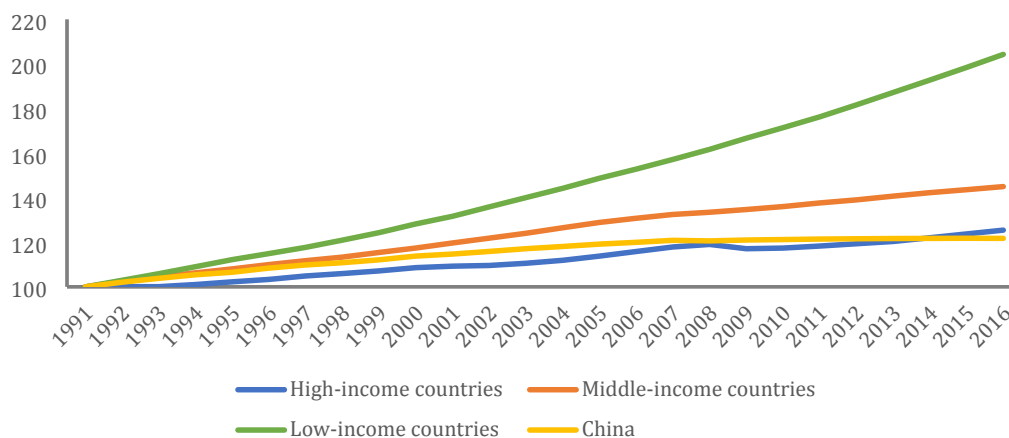
This does not mean that machines will replace all labor in China or that wages will plummet across the board. Computers based on AI are remarkably effective in conducting specific tasks rather than replicating human intelligence. The early attempts to imitate humans in the 1970s derailed AI for decades, and the recent success of AI has been based on an algorithmic approach that uses neural networks and deep learning to carry out well-defined and limited tasks. The human contribution is likely to remain the crucial ingredient – the “O-ring,” as Autor (2015) calls it.

Acemoglu and Autor (2011) and Acemoglu and Restrepo (2018) are studies that provide a helpful framework for assessing the employment and wage effects of technological innovation. According to this framework, there are two broad types of innovations: enabling technologies and replacing technologies. Enabling technologies expand the productivity of labor and lead to higher employment and wages. Some modern examples are computer-aided design and statistical software for economic and social analysis. Replacing technologies, in contrast, substitute for labor, making workers less useful and lowering their wages. Some modern examples are industrial robots for car manufacturing and software for accounting and tax reporting.

The direct effect of replacing technologies is negative on wages and employment. However, these technologies can still have a positive effect in two indirect ways. First, the new technologies can generate complementary tasks. According to World Bank (2018b), today more than 100,000 workers in China are employed as data labelers, an occupation crucial for training AI algorithms that did not exist even a few years ago. Second, the productivity effects can be sufficiently large to create wealth and generate demand for other jobs. For instance, according to WTTC (2018), between 2007 and 2017, total employment in travel and tourism in China, including jobs indirectly

supported by the sector, increased from 44.2 million to 79.9 million. By 2028, it is projected to reach 116.5 million (or 14.7 percent of total employment).

**Figure 100.1: Total Employment, 1991 to 2016 (1991=100)**



Source: Authors' calculations based on the World Bank's Jobs database.

Whether these enabling and replacing technologies will replace or augment employment depends not only on the technical properties of the innovations but also on workers' abilities. The same technology can replace workers in some instances and enable workers in others. Those workers who are well prepared and have learned complementary skills will benefit the most from the Fourth Industrial Revolution, while those with only substitutable skills will lose out. Therefore, an important challenge for policymakers, educational institutions, and households is to identify those skills that will be complementary in the changing workplace. China's recent development provides a case in point. Between 1980 and 2015, the share of China's labor force with at least an upper secondary education increased from 6 percent to 29 percent. In parallel, the share of the country's labor force with a tertiary education increased from 1 percent to more than 12 percent, while the share of employment in the private sector jumped from virtually zero in 1978 to more than 83 percent in 2014. The resulting increases in human capital and the more efficient allocation of labor facilitated the effective adoption of technology by China's industries and the transformation of its economy and has been a key factor in China's economic success since 1978 (Li et al, 2017 and Chapter 2).

Labor market conditions can also shape how innovations impact employment and wages. Rigid labor markets tend to adjust to the introduction of technology by shedding labor, while more flexible labor markets adjust by reducing wages. Flexible labor markets can also promote workers' reallocation and mobility in the face of technological shocks, mitigating any negative effects on both employment and wages.

As depicted in Figure 100.1, more people are employed today than ever

before – across the world and also in China. In the long run, new tasks and new jobs will be created that are difficult to envision now. However, many of the current technological advances will widen inequality. While the returns to tasks that complement these new technologies have grown dramatically, many low- and mid-skilled jobs are threatened by automation, and the industrial and occupational structure may become even more polarized. This raises the question of how China can mitigate, if not avoid, the tremendous challenges of the Fourth Industrial Revolution.<sup>79</sup>

### 3. Implications for the Future of Labor Regulations

Technological change promises tremendous gains in productivity and welfare. Therefore, policymakers cannot aim to stop or delay the Fourth Industrial Revolution but instead should identify ways to adjust labor regulations and other policies to maximize the potential social gains for all and in particular for the poor and vulnerable. What will be needed are policies that facilitate labor market flexibility and mobility, strengthen safety nets and social protection, and improve education and training. In other words, policies are needed that further reinforce and complement the main policy recommendations as summarized in Chapter 1.

In the context of the conceptual framework introduced in Chapter 1, the Fourth Industrial Revolution will also change the boundaries of the plateau. Rapid technological change puts a premium on flexibility to enable firms to adjust their workforce but also to foster the mobility of those workers who can benefit from a more dynamic labor market. World Bank (2018b, p. 31) emphasizes that “given the considerable uncertainty about the future of employment, governments should rethink policies that deter job creation and emphasize policies that protect the vulnerable while still encouraging employment.” While the social costs of protecting jobs instead of workers will increase, it seems reasonable to think that the cliff associated with over-regulation will expand in size and that for under-regulation will shrink. As shown in Figure 100.2, if China is to *stay* on the plateau, the government must be ready to *change* its labor regulations. At the same time, it also seems reasonable to think that the indicators used to measure workers and job protection may change once there is more clarity about the difference dimensions of the changing nature of work. This in turn may—or may not—redefine the shape of the plateau.

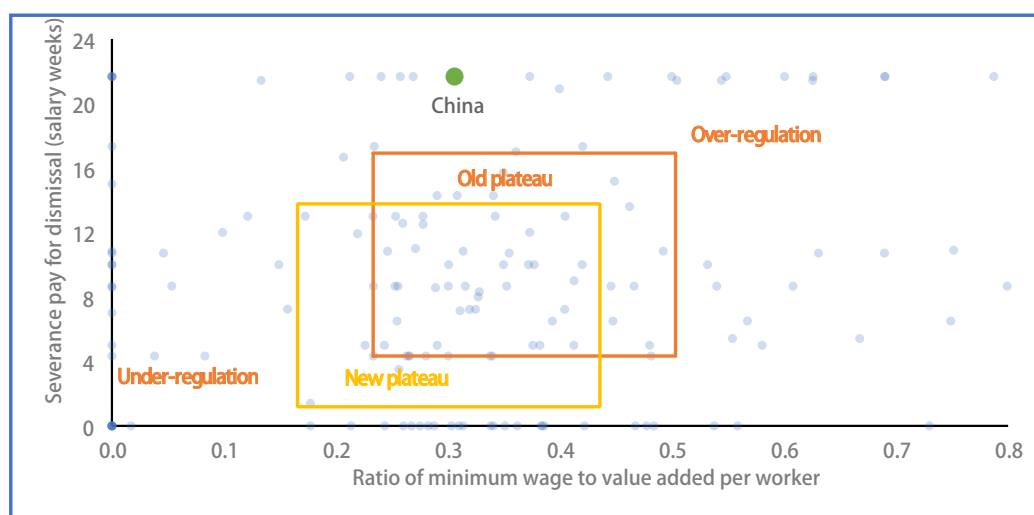
As far as China's minimum Wage Regulations are concerned, more systematic and continuous monitoring and evaluation will be necessary to

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<sup>79</sup> No matter how successful China's mitigation strategy may be, employment is unlikely to significantly exceed the levels seen in recent years, not because China is running out of jobs but because the country's changing demographic profile means that it is likely to have passed the point where the size of its labor force peaked before beginning to decline.

identify any possible changes in their impact on the labor market as the working world alters. The shift in emphasis from rapid minimum wage increases during the period of the Twelfth Five-Year Plan to more cautious adjustments in the “New Normal” of the Thirteenth Five-Year Plan period provides a template for keeping China on the plateau during changing circumstances. In the future, the guiding principle should be for governments to ensure that minimum wage increases do not exceed labor productivity growth. Another key recommendation is for the government to continue to promote the role played by the tripartite consultation mechanism in setting the minimum wage rates. This will increase awareness of and compliance on the ground, make minimum wage adjustments more transparent, consistent, and systematic, and elevate the legislative level of the Minimum Wage Regulations.

**Figure 100.2: Plateau and Cliffs of Labor Regulation – China and the Changing Nature of Work**



**Source:** Authors' calculations based on data from World Bank (2018a) and on the conceptual framework of Betcherman (2014).

**Note:** Data for 2017. China is represented by Shanghai. The minimum wage refers to a cashier, age 19, with one year of work experience. Severance pay for redundancy dismissal refers to a worker with five years of tenure. Economies for which 0 is shown have no minimum wage in the private sector and/or no statutory severance pay for a worker with five years of tenure. The old plateau is defined as a range from the first to the third quartile of the distribution. The new plateau moves the old plateau towards the origin by 25 percent. Countries with severance pay for dismissal in excess of 24 weeks and a ratio of the minimum wage to value added per worker greater 0.8 are not depicted. Economies where dismissal due to redundancy is disallowed are also excluded.

Regarding employment protection legislation, it will become increasingly important to pursue the “grand bargain,” or the “new social contract” as it is called in the World Development Report (World Bank, 2018b), which reduces the *de jure* strictness of the Labor Contract Law while improving *de facto* adherence to its provisions. On the one hand, the monitoring and enforcement of employment protection legislation on the ground will need to be strengthened to ensure that workers receive a basic level of protection amid a world of growing uncertainties. In particular, it will be vital to enhance

job inspection schemes and to impose effective sanctions for violations. On the other hand, it will become more and more urgent to consider revising some of the law's strictest provisions so as not to stop or slow down the process of structural change and productivity growth. This revision should focus on the law's protection for permanent workers, which is much stricter than the international norm. Meanwhile, in the medium term, China's employment protection legislation will also need to be adapted to new working environments and arrangements such as those in the emerging "gig" economy.

Although restrictions on the internal movement of people within China was not discussed in detail in this edited volume, it will become ever more important to revise these regulations if China is to reap the potentially huge benefits from the changing nature of work. As discussed in detail in World Bank and the DRC (2013), a systematic revision of these restrictions will have to involve delinking the *hukou* household registration from access to public services and further developing the residential permit system to determine eligibility to receive services. The government may also need to consider encouraging further pilot reform programs at the local level and devolving some financial authority to local governments to incentivize these reforms. It will also be necessary to make pensions and other benefits more portable to facilitate return migration and migration between provinces. Several pilots and tentative reforms in recent years have already put China on the right path, but more efforts are needed, particularly to facilitate continued internal migration to the largest and most productive areas of China.

A more dynamic labor market requires better social protection to be both feasible and desirable. As emphasized in World Bank (2018b, p. 4), "enhanced social assistance and insurance systems would reduce the burden of risk management on labor regulation." Safety nets – including cash transfers to the poor and unemployed – are essential to support workers (and their families) who may become displaced or replaced when new technologies are implemented. Evidence from around the world shows that well-targeted and well-designed safety nets make a substantial contribution to reducing poverty and inequality, both in the long run and in the adjustment to technological and other large shocks (World Bank, 2013). In the case of China, the changing workplace will make it necessary to strengthen the entire social safety net, particularly the rural and the urban *dibao* programs. These programs have already made a significant contribution to reducing extreme poverty and inequality and may play an even more important role in eliminating remaining pockets of extreme poverty and promoting broad-based, shared prosperity. In the long run, even broader redistribution policies may be desirable to make sure that the technological dividends are enjoyed by the whole population.

Continued educational reform will also be crucial in order to develop the complementary skills that Chinese workers need to benefit from all types of machines and technologies. Training will be needed not only in scientific,

mathematical, and communication technology skills but also in softer skills such as perseverance, flexibility, creativity, adaptability, and teamwork will become more and more important. The World Development Report on the Changing Nature of Work (World Bank, 2018b, p. 23) compared the job requirements of a Hilton Hotel management trainee in Shanghai in 1986 and 2018 and noted that the expectation of an “excellent character, willingness to learn,” and “good health” have been replaced by an emphasis on a “positive attitude and good communication skills” and an “ability to work independently and as part of a team.” Combining fundamental education with properly designed and targeted active labor market policies, workforce training, and other opportunities for lifelong learning can encourage and enable workers to continue to participate in the changing labor market (Card et al, 2018).

Finally, in addition to income support, basic education, and lifelong learning, more and more frequent changes in labor demand as a result of technological advances will increase the importance of labor intermediation services. Public employment agencies and private job brokers can support both employers and jobseekers by providing them with labor market information, facilitating career counseling and human resource planning, compiling listings of jobs and job candidates, and supporting the matching of workers and firms. Technology can help in this area. As emphasized by Mazza (2017, p. 134), “the future will put more of a premium on the pace and innovation of labor market intermediation tools in a rapidly changing global marketplace.”

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