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Abstract

This paper analyzes the effects of recent laws formalizing employment contracts in China, part of a wider policy to normalize features of an emerging market economy. Using a unique hand-collected dataset of 294 industrial injury claims handled by a labour dispute arbitration commission in 2010, we study the impact of having a formal contract on the amount of compensation paid to victims of workplace accidents. An inherent feature of the employment contract under a market economy is its incompleteness: because work-effort bargain and labour capacity cannot be accurately specified *ex ante*, the employer can expropriate the surplus from production *ex post*. The legally-driven formalization of employment contracts is intended to redress this effect by holding the employer to the terms of the parties' agreement and proving for third party enforcement. Our empirical analysis shows that having a written employment contract makes an injury claim more than twice likely to be arbitrated than mediated, in line with the intended effect of the law, but that it also leads to a reduction of around half in the amount of compensation awarded. Formalization of employment contracts may reduce employer discretion during the course of the employment relationship, but it also makes it difficult for workers to invoke actual or customary wage levels for the purposes of putting a value on an accident compensation claim, in the face of the formal wage stated in the contract. Formalization ends up reinforcing the hierarchical power of the employer which is a feature of capitalist work relations.

Keywords: contracts; labour valuation; emerging markets; China; injury compensation; wages

JEL codes: J41, J83, K31, O43

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1. Introduction

It is well known that there is a difference between the formal terms of a contract and how that contract is performed in practice. In his seminal study of contract enforcement, Macaulay (1963) found that firms often started to collaborate before a contract was agreed. Moreover, when a breach of contract occurred, firms often preferred dispute resolution through business networks to legal enforcement. The gap between legal form and organizational practices is emphasized in other strands of sociological analysis. As neo-institutionalist sociologists have long argued (Meyer and Rowan 1977; DiMaggio and Powell 1983), organizations come under institutional pressures to adopt formalized procedures more to gain legitimacy than to fulfill technical or managerial demands. Thus it would seem that in spite of the resources spent on adoption and implementation, formal rules and regulation often do not achieve their expected goals. For example, gender and racial inequality persists despite organizations' affirmative action (Edelman 1992; Dobbin and Sutton 1998). In other cases, organizations experience unexpected adverse effects *because of* the impact of formal rules. This occurs where the rationalist expectations underpinning these rules are not borne out in practice (Merton 1936). In the law and economics literature, for example, it has been shown that regulations on vehicle safety often cause more pedestrian deaths and nonfatal accidents (Peltzman 1976), as the effect is to encourage greater risk-taking. Organizational scholars similarly find that firms with a history of promoting diversity experience a *heightened* level of gender biases on the part of managers once new regulations on equality are introduced; this is because managers who think they are already compliant with regulations subsequently become less careful in their behavior (Monin and Miller 2001; Castilla and Benard 2010).

Organizational practices or legal rules may not only affect the perceptions of the actors, but also aim to change the balance of bargaining power between them, again with uncertain and possibly counter-intuitive results. The case of employment provides a relevant context in which to study this effect. The employment contract emerged as the predominant social and legal form of the work relationship during the period of industrialization in Europe and is now accompanying the rise of wage labour in the global South (Adams and Deakin 2014). The legal systems of virtually all market economies make it a requirement for the employment contract to be formalized in a document which includes information on job description, job title, the term of employment and the amount of wages, as well as rules on working time, occupational benefits and disciplinary and grievance procedures.

The employment contract is not only inherently incomplete, but is also asymmetrical: it creates a residual power in the employer to direct labour without the need for continuous negotiation over the terms of the contract (Coase 1988). The effort the worker must supply to earn wages can only be partially specified *ex ante*, and the contract becomes complete *ex post*, through exercise of managerial power by the employer (Marx, 1973). While the labour process, so defined, may be contested, it never entirely disappears (Braverman 1974). Even to evaluate how a task is performed on an assembly line and to assign a monetary value to it requires not only the monitoring effort associated with 'scientific management' but also 'a great deal of bargaining on a day-to-day basis on the amount of effort to be expended' (Edwards 1990: 43). Nor do piece rates entirely deal with the problem: 'if complete contracts could be written, the firm could commit to a fixed piece rate, but in practice the relevant contract is much too complex to write because the obvious simple contract will not suffice' (Gibbons 1987: 416).

In principle, the uncertainty inherent in the definition of the wage-work bargain and the power this confers on the employer can be reduced by legal rules which require employers to spell out the details of contract terms. Mitigation of employer discretion can enhance trust and provide a basis for long-term cooperation between the parties to the employment relationship (Simon 1953). More generally, in so far as they reduce the transaction costs inherent in the wage-work bargain (Williamson 1986), collective bargaining between employers and trade unions, on the one hand, and worker-protective statutory standards, on the other, could indirectly serve employers' interests (Bartling, Fehr and Schmidt 2013). However, employers may also turn such laws to their advantage in ways which undermine their worker-protective intention. This is because, as we shall see, formal contracts which are intended to protect workers against the exercise of employer discretion may, paradoxically, have the effect of reducing the scope for workers to invoke customary notions of what amounts to a fair wage in return for their effort, or even wages actually received, when it comes to quantifying claims for loss of wages and earnings capacity arising from workplace accidents.

We study this unexpected effect of formalizing employment contracts with a unique hand-collected dataset of 294 industrial injury claims in 2010 in a city in southern China. We show how the adoption of the standardized employment contract paradoxically put workers in a disadvantageous position by reducing the amount of compensation they could claim for workplace injuries. The rest of the article is organized as follows. The first section below describes the rise of a labour market in China and the resulting introduction of employment

regulation, and summarizes the industrial injury compensation system which has emerged as part of this process. The second section reviews relevant literatures on labour valuation and the sometimes unintended consequences of organizational practices. The next section describes our empirical data which are based on archival coding of case files and other supplementary data. The empirical results are presented in the fourth section. The conclusion section discusses theoretical contributions, limitations, and future research.

2. The Labour Market in China

Following economic reforms beginning in the early 1980s, China lifted barriers to rural–to-urban migration and introduced a market economy in most sectors. In contrast to the life-time employment and egalitarian pay schemes of the socialist period, a labour market based on the right of employers to hire and fire and the right of workers to move between firms came into being, but with few protective mechanisms. There emerged a dominant discourse of efficiency and flexibility with a major role for pay-for-performance schemes (Gallagher 2004). The number of labour disputes skyrocketed, increasing from 47,951 in 1996 to 665,760 as of 2013. It is estimated that only about 20 per cent of employees received written contracts during this period, at a time when the provisions of protective labour laws were regarded as ambiguous, and enforcement was weak (Lee 2007).

2008 marked a fundamental change when several pro-labour laws took effect. Most relevant to our research are the Labour Dispute Mediation and Arbitration Law 2008 and the Labour Contract Act 2007 (which came into force in 2008). Among other things the latter required the employer to formalize the employment contract in writing. Failure to do so did not invalidate the contract, thereby depriving the employee of legal rights; on the contrary, it would generally result in legal liability for the employer, in the form of a doubling of wages for each month worked without a formal agreement. Despite criticisms of the Labour Contract Act 2007 for setting unrealistic expectations, studies show that the proportion of employees with written contracts increased considerably following the passage of the Act. For example, Cheng et al. (2015) find that 62 percent of surveyed migrant workers in Guangdong province had received a written contract by 2009. Some studies suggest that the level of benefits provided to employees has seen an overall improvement (Cui et al. 2013; Li and Freeman 2015).

The Labour Dispute Mediation and Arbitration Law 2008 was an attempt to address the need for effective third party enforcement of employment contracts.

It makes three major improvements on earlier laws dating from the early 1990s. Firstly, the 2008 law reduced the costs of arbitration for employees. Filing an arbitration application became free, while the fee for taking a case to litigation was almost nominal (it is currently RMB 10). Secondly, the 2008 Law made it clear that a *de facto* labour relationship was sufficient to establish an employment contract which was legally binding on the parties. Evidence such as payment slips, bank statements, or even security videos showing an employee entering and leaving a firm's premises regularly, could be used to certify the existence of a contract of employment and hence open the way to an arbitration claim. Because many small firms did not initially provide written employment contracts to their employees, this change allowed many more workers to use the arbitration option. Finally, workers could access data on their employer without charge via the State Administration for Industry and Commerce (SAIC).

In case of industrial accidents, the 2008 Law provides that when an injury occurs, a worker can bring a case to an internal mediation commission, if one is available at workplace level. Community dispute resolution commissions established for general purposes can mediate labour disputes, but few workers use this channel. Under the 2008 Law, neither of these two options is mandatory, however. In practice, many labour dispute cases are brought directly to a labour dispute arbitration commission (LDAC), normally at city level.

For a workplace accident case to be heard in the arbitration system, it has to be certified as an industrial injury by the local bureau of the Ministry of Human Resources and Social Security (MHRSS). This step identifies the responsible employer on the basis of the presence of a labour contract or a *de facto* work relationship. The next step is a medical evaluation to estimate the severity of the injury, necessary medical treatment, and care costs. A scale of 1-10 is used to indicate the severity of injuries in reverse order: levels 1-4 indicate the complete loss of labour capacity, levels 5-6 indicate the loss of over half, and levels 7-10 refer to a partial loss. Minor injuries and deaths from injuries are not ranked on this scale. Injury cases would then be heard by the local LDAC, via two potential routes: mediation or arbitration. If the claim is successful, either route can lead to the award of compensation.

The development in the Chinese case of dispute resolution mechanisms of this kind can be seen as protecting workers' interests, but it also entailed the quantification of labour capacity within the context of what was now a market-driven economic exchange. Under these circumstances, formalization of

employment contracts was to have unintended consequences, as we shall now explore.

3. Labour Valuation and the Unintended Consequences of Formalization

3.1 Pricing labour capacity

Research on labour valuation has a long history. In classical Marxism, as noted above, the employment contract implies the sale not of finished labour but of the worker's labour power or capacity to work. Because the employment contract cannot precisely specify the amount of effort which a worker must expend in order to earn the corresponding wage, it is inherently incomplete. The gap between what the worker has agreed to provide *ex ante*, and what the employer can obtain *ex post*, is the basis for the extraction of 'surplus value' within the framework of the capitalist firm (Marx 1973). The insight that the employment contract is left incomplete at the point of agreement is also at the core of new institutional economic conceptions of the firm (Coase 1988). Neoinstitutional economics identifies the potential for the contract to generate a surplus through cooperation, and the need for external regulation of the contract through collective bargaining and protective labour legislation if the gains from cooperation are to be fully realized (Williamson 1986; Bartling et al. 2013). Whether a Marxist or a new-institutionalist approach is taken, the analysis of the incomplete nature of the employment contract, and the related need for a normative structure, including third party enforcement and regulation, to govern the contract, is a common point of reference, as it is in juridical accounts of the nature of the employment relationship (Deakin 2006).

Biernacki (1995) unpacks wage labour by tracing the evolution of wage-setting practices in the early decades of industrial capitalism in Europe. Although piece rate pay systems were common among wool-weaving workers in the nineteenth century, British workers were paid by reference to finished products, while their German counterparts were paid by labour effort, that is, the number of shots they operated as the shuttle crossed the warp. This basic difference in labour valuation had far-reaching consequences for dispute resolution mechanisms (Biernacki 1995: 364-368).

Biernacki's research nevertheless remains the exception: too much research on the labour market simply takes contract form for granted. Despite a large literature examining the effects of gender segregation, racial discrimination, social capital, and organizational features on labour valuation, a crucial

limitation is that this literature overlooks macro-level institutions on one hand and the micro-level labour process on the other hand. One of the few studies addressing the historical context of discrimination include Ruef's (2012) research on labour valuation in southern US firstly under slavery and then in an economy based on 'free labour.'

Labour valuation under a socialist system is characterized by an absence of 'free labour' in a somewhat different sense to the institution of slavery in the *antebellum* US. The labour market cannot be said to exist as a mechanism of resource allocation in a socialist economy where individuals are involuntarily assigned to jobs through an administrative process. In the transition away from this model from the late 1980s, many former socialist countries experienced an abrupt change to a market system. Labour market reforms in this period often reflected an aim of giving 'unfettered' power to market forces. Protective mechanisms were seen as interfering with the emerging market order. For these transition economies, there was a shift from one extreme to another as a template based on social protection and political loyalty was replaced by one based on unmediated market power.

Structural anthropologists, following Levi-Strauss (1963), have long argued that the core ideas or meaning systems of a society are oppositional in nature. These dualist features define the ontological dilemmas experienced and practiced in everyday life. Although contemporary cultures are less dualistic than preindustrial cultures based on, for example, religion, oppositions still continue to play a crucial role. For example, Barley and Kunda (1992) find that normative and rational discourses alternated between five dominant managerial ideologies in American business history. They argue that this pattern is inherent in a process of industrialization which juxtaposes two contrasting paradigms of social order, or what Durkheim termed 'organic' versus 'mechanistic' solidarities. This observation echoes the 'cultural toolkit' theory which argues that coded social 'scripts' usually have greater, or at least more obvious, influence over action in unsettled than in settled times, because 'the new patterns are in tension with previous modes of action and experience' (Swidler 2001: 94). In unsettled periods, individuals use pre-existing cultural resources (which could be overlapping and/or oppositional) to organize new strategies of action and to model new ways of thinking and feeling (Sewell 1992).

This perspective helps explain how the ideological and practical components of labour valuation came to be contested in transition economies. Frustration with the prior socialist experience facilitated a rhetoric which associated the 'free' market with individual choice and reward. In the early years of economic

reform in China, labour valuation was conventionally presented as the result of the intersection of supply and demand curves. Variations in human capital, skills, and work ethics were believed to generate 'fair' wage differences. This belief was accompanied by disenchantment with the traditional 'iron rice bowl' system, which combined social guarantees with strict control over labour mobility, and kept the role of pricing mechanisms to a minimum. The result was that a wide variety of pay-for-performance schemes were adopted across a range of occupations.

The contrast between the old and new pay systems was nevertheless most significant for the rank-and-file industrial workers, whose 'wages' during the socialist period more closely resembled allowances based on assumed subsistence needs, which did not go beyond what was required for maintaining a modest standard of life. During the economic reform period, labour valuation for this group was broken into specific tasks performed on hourly, daily or monthly basis, often phrased in the terminology of scientific management.

The growth in global value chains (GVCs) has further complicated the labour valuation process in emerging markets such as China. As subcontractors, many employers there have little or no market power to decide the quantity, quality, or price of their products. To reduce costs, these employers monitor and analyze production in real time and adjust piece rates and work arrangements in response to the business orders they receive from foreign clients. These pressures make the process of *ex ante* valuation even further contested. While employers came under pressure to use pay-for-performance schemes to cut monitoring costs and to motivate workers, employees largely consented to and occasionally actively participated in and maintained this principle. Thus customary expectations around a target wage which an experienced worker could and should make per month began to emerge. Workers cared less about exactly how labour valuation was generated or calculated in everyday practices, but were willing to sacrifice leisure time to work long hours to hit targets. Employers, on the other hand, analyzed and closely monitored each production step to balance their profit margins with workers' target wages. In such a scenario, labour valuation is both distinct to the production process of particular firms, but also shaped by common pressures faced by firms at the bottom of GVCs. Micro-level production processes governed by scientific management principles interacted with a new, market-driven approach to measuring labour effort, expressing what Carruthers and Espeland (1998) call the 'commensurative' capacity of money regardless of the specific work that is performed.

3.2 The unintended consequences of formalization

Formal rules or procedures often have unintended consequences and run counter to their proclaimed goals. For example, there is evidence to suggest that attempts to improve vehicle safety by regulation of production design increased the deaths of pedestrians and raised the total number of accidents. This was because a higher level of vehicle safety gave rise to a higher incidence of reckless driving by changing the perceptions of drivers (Peltzman 1976). Another example of safety regulation that failed to achieve its intended goal is the enforcement rules governing cyclists' helmets. In an audit experiment, Walker (2007) finds that wearing a helmet increased the risk of an accident for cyclists. Unlike in the example of vehicle safety regulation, cyclists were not more prone to take risks by virtue of the safety provided by a helmet. However, this rule changed the perception and behavior of *other* road users (that is, drivers) who, seeing a helmet as a signal of a cyclist's experience, became less cautious in their driving behavior. In the context of organizational practices, Castilla and Benard (2010) find that managers showed bias in favour of men over equally performing women. They attribute this unintended adverse effect of non-discriminatory training in the hiring and appraisal of employees (Monin and Miller 2001): when an organization promotes a meritocratic culture, it may encourage greater bias by convincing managers that they are basing their judgments on objective criteria. Similarly, Bernstein (2012) finds that transparency practices on production processes lines reduced individual and team-level productivity. Workers had information which could have led to workplace improvements, but scientific management systems precluded effective feedback between them and managerial teams.

How far does China's Labour Contract Act pose a similar dilemma? Following the passage of this law, there was an increase in the percentage of workers with written contracts from 12 per cent in 2006 to 80 per cent in 2010, according to different sources (Chen et al 2015). Under institutional pressures from both the Chinese state and transnational NGOs, the enforcement of the Act took effect surprisingly quickly. However, the implementation of the Act occurred against the backdrop of a highly flexible labour market, in which standardization turned out to have unexpected effects.

A template for the standardized employment contract could be downloaded from the webpage of a local bureau of justice or a local labour bureau. Although the two parties could draft a customized contract, a template became the default option, as redrafting it required additional expense including possible legal fees. In addition, due to high turnover rates and a substantial rate

of fixed-term contracting for terms between one and three years, many workers were indifferent to the precise terms of their written contracts. Because of these pressures, employment contracts were homogenized across employers and industries. We shall now see how this process played out in the context of arbitration claims.

4. Data and methods

Our primary dataset consists of 294 industrial injury dispute cases from an LDAC in a large city in southern China. Because of confidentiality concerns, we are restricted in the amount of contextual information that we can provide about the research setting. In terms of GDP per capita, the number of migrant workers, and the scope of labour-management conflicts, this city leads many large cities in China. Compared with other LDACs, this LDAC has developed a more transparent mode of operation. Admittedly, it is not representative of all Chinese LDACs, and if anything, it is probably more effective in its mode of operations, and more transparent, than average. This LDAC was selected because it offers the best available information on the operation of the arbitration process in the context that we are considering. There is very little information on the early stage of operating a labour dispute arbitration system in a developing country; we know of no similar study to ours on China. The cases archived at this LDAC were crosschecked with others from a less developed neighbour province (not reported here). We did not find systematic differences in terms of paperwork, procedures, access to legal aid, and handling days. Even if there are regional differences across LDACs, they do not affect the statistical analysis which we present below, since this looks at differences between cases within the LDAC that we are studying.

By way of background research we conducted a number of interviews with NGO leaders, firm owners, managers, union leaders, and government officials on the general industrial relations in China (see Appendix, Table A1). We used these narratives to contextualize the quantitative analysis. In addition, we used secondary data on injured workers who had not decided how to handle their cases. These data were collected by a labour NGO in the same province between 2003 and 2010. Because of sampling and design limitations with this dataset, we only used it to provide a general picture of the characteristics of workers who were injured but had not decided whether to bring the case to arbitration.

We were given temporary access to the LDAC's internal archives in early 2014, and were able to review all the injury cases archived in 2010. With the assistance of LDAC staff, photocopies were taken of relevant materials from each of the 294 case files, and a dataset constructed. Since little is known empirically about the details of the labour arbitration process in China, rather than engaging in elaborate hypothesizing on the contents of this dataset, we prefer at this stage to present a 'thick' description in the style of quantitative ethnography. The 294 cases can be treated as a rich textual database which enables us to identify salient patterns in the process of dispute resolution for industrial injuries. It would have been desirable to document the everyday languages and conceptualizations used by the parties. Unfortunately, detailed narratives and non-legalistic, everyday conversations during an arbitration hearing were only occasionally transcribed into the case files. Instead, most case files are only documented using standard legal terms and sometimes only with abbreviations. According to the LDAC archive manager, the clerks working for the LDAC were themselves contract employees who were paid through a combination of a basic monthly wage and piece rate. They were not expected to transcribe the arbitration hearing verbatim. Nevertheless, we were able to find some narratives and supporting documents in a few case files, which we used to identity patterns within the arbitration process. Informed by this qualitative analysis, we then coded the 294 cases into a number of variables pertaining to workers, employers, lawyers, and arbitrators.

Dependent Variables

Arbitration. All the cases registered at the LDAC had two outcomes: mediation or arbitration. For the arbitrated cases, an arbitrator would issue a binding award. Most of the mediated cases were settled after the arbitration hearing with the endorsement of an arbitrator, but the decision on the merits and the amount of compensation was made by the workers and employers themselves. We use a dummy variable *arbitration* with '1' indicating an arbitrated case and '0' indicating a mediated case.

Compensation amount. All settled cases led to the award of an amount of compensation. Only five out of 17 cases settled before an arbitration hearing included a photocopy of the agreement arrived at by the parties. In total, we were able to code the amount of compensation for 282 cases. The unit is RMB, expressed in natural log.

Independent Variable

Contract. We use a dummy variable *contract* to indicate whether there was a written employment contract between a worker and an employer. In a few cases, it seems that the employer may have forced the injured worker into agreeing a contract to avoid paying double wages which were due for failure for formalize the agreement. We code such situations into '0.' For cases in which a worker claimed that he had no contract but later was shown to have one, we assign the value '1.'

Control Variables

Age. Information on a worker's date of birth and the time of injury was available in the case file. We use a continuous variable to control for the worker's age in units of a year.

Male. To control for gender, we use a dummy variable *male*.

Tenure. Because of high turnover rates, we calculate the number of months that a worker had worked for an employer prior to injury to measure *tenure*.

Injury severity. As mentioned above, medical evaluation of injury severity is ranked on a scale with 10 levels, with the value 1 indicating the most severe injury. For minor injuries that were considered by medical experts to not affect labour capacity, we assign a score of 11. Fatalities from accidents are not ranked on the scale of 1-10; we assign such cases a value of 0 to indicate the most severe loss. Since a lower number indicates a more severe injury, we reverse-code the scores (1-12) to make the interpretation more straightforward.

Paid daily. Workers in the construction industry are often paid daily for the work they carry out. Employees in the manufacturing sector are often paid through a combination of a monthly basic wage and a piece rate. Most workers in the property management sector are paid by a fixed amount plus allowances. We use a dummy variable *paid daily* to denote daily pay versus other pay methods.

Worker with a lawyer. With increasing legal awareness, many workers either hired a lawyer or used the free legal service provided in arbitration cases. We use a dummy variable, *worker with a lawyer*, to measure whether a worker was represented by a lawyer.

Firm size. In official information on business registration obtained from the local SAIC, the amount of capital investment in a given firm was recorded. We use this information as a proxy of *firm size*, expressed in natural log.

Sectors. The business registration form contained information on the economic activities that an enterprise was authorized to engage in. We use this to code the firms in the sample into five sectors: *construction*, *manufacturing, logistics, property management* (for example, janitors and cleaners), and *others*.

Firm with a lawyer. Some firms were represented by a human resource manager before the LDAC, while others had legal representation. A dummy variable *firm with a lawyer* captures this difference.

Arbitrator. A simplified arbitration procedure with only one arbitrator handling a case was used in some instances. Because some arbitrators were civil servants with a full-time job at the LDAC, they handled more than one case in the dataset. We control for the identity of arbitrators in the data analysis.

Labour lawyer. Occasionally lawyers who specialized in labour dispute cases and workers appeared in more than one case in our sample. We control for the identity of labour lawyers in the data analysis.

Tables 1 and 2 summarise the variables just described.

Table 1: Variable Summary

		# Obs	Mean	S.D.	Min	Max
Compensation amount	Natural log of compensation amount	280	10.305	2.003	0.000	13.514
Contract	Whether there was an employment contract	294	0.405	0.492	0.000	1.000
Injury severity	Reverse coding of the degree of injury	292	3.832	2.579	1.000	12.000
Male	A dummy variable for gender	294	0.827	0.379	0.000	1.000
Age	Age	294	36.718	10.371	17.000	62.000
Tenure	Number of months worked for a main employer	294	25.643	29.509	1.000	185.000
Paid daily	Whether a worker was paid daily	294	0.296	0.457	0.000	1.000
Worker with a lawyer	Whether a worker had a legal representation	294	0.765	0.425	0.000	1.000
Firm with a lawyer	Whether a firm hired a lawyer	294	0.395	0.490	0.000	1.000
Initial request	Natural log of initial compensation request	294	11.310	1.121	8.371	15.955
Firm size	Natural log of firm's registered capital (10,000 yuan)	291	6.265	2.383	0.000	13.631
Miles	Natural log of miles btw a worker's hometown and the city	294	6.605	1.593	0.000	8.519
Manufacturing	A broadly defined manufacturing sector	294	0.204	0.404	0.000	1.000
Construction	Construction and infrastructure sector	294	0.279	0.449	0.000	1.000
Logistics	Logistics sector including public transportation	294	0.146	0.354	0.000	1.000
Property management	A sector of janitors and cleaners	294	0.187	0.391	0.000	1.000
Others	Other sectors	294	0.184	0.388	0.000	1.000

Table 2: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10
1.compensation ¥	1									
2.contract	-0.154*	1								
3.severity	0.339***	-0.124*	1							
4.male	0.165**	0.015	0.167**	1						
5.age	0.035	-0.078	0.077	0.017	1					
6.tenure	-0.023	0.221***	0.017	0.014	0.144*	1				
7.paid daily	0.166**	-0.298***	0.112	0.228***	0.191**	-0.115	1			
8.worker lawyer	0.166**	-0.054	0.165**	0.090	-0.069	0.009	0.013	1		
9.firm lawyer	0.104	-0.097	0.176**	0.061	0.052	-0.111	0.178**	0.144*	1	
10.request ¥	0.412***	-0.175**	0.657***	0.261***	0.104	0.105	0.275***	0.223***	0.204***	1
11.firm size	0.048	0.040	0.071	0.046	0.036	0.072	0.162**	-0.129*	-0.035	0.103
12.mile	0.061	-0.156**	0.024	0.134*	0.096	-0.190**	0.119*	0.123*	0.083	0.120*
13.manufacturing	-0.042	0.098	-0.040	0.065	-0.307***	-0.020	-0.240***	0.165**	0.035	-0.134*
14.construction	0.126*	-0.259***	0.002	0.174**	0.104	-0.144*	0.648***	-0.005	0.093	0.217***
15.logistics	0.115	0.069	0.185**	0.133*	0.051	0.065	-0.072	0.116	0.000	0.173**
16.property mgmt.	-0.171**	0.051	0.034	-0.142*	0.323***	0.073	-0.266***	-0.177**	-0.091	-0.128*
17.other sectors	-0.038	0.087	-0.167**	-0.256***	-0.169**	0.058	-0.174**	-0.100	-0.056	-0.146*

	11	12	13	14	15	16	17
11	1						
12	0.005	1					
13	-0.211***	-0.090	1				
14	0.354***	0.165**	-0.325***	1			
15	-0.022	0.064	-0.216***	-0.263***	1		
16	-0.099	0.046	-0.244***	-0.297***	-0.197**	1	
17	-0.072	-0.206***	-0.238***	-0.289***	-0.192**	-0.217***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5. Empirical Findings

5.1 Qualitative analysis

To better understand industrial injury claims in practice, we reviewed the 7,644 pages of the 294 case files. A number of compensation categories are used in the arbitration process (see Appendix, Table A2). For example, an important category is that of suspension-of-work-with pay, specified in the 2004 Regulation on Work-Related Injury Insurance. This form of compensation involves paying the worker an amount equivalent to lost wages as well as social security benefits representing the costs of medical treatment. The premise here is that the claim for lost wages should not be less than the sum an injured worker would have earned had she or he not been injured. Another category is 'disability allowance.' If a worker's injury is evaluated at level six, which signifies that she or he lost more than 50 percent of their working capacity, they would receive compensation equivalent to their wages for an 18 month period.

A process of identifying the pre-injury wages received by the worker took place in almost all arbitrated cases. Arbitrators referred to wages as 'the key issue,' 'the highlight,' 'the major concern,' or 'the most contested area' of a case. Because we do not have verbatim accounts of hearings, most of the evidence we have on this point consists of material in the case files themselves. The files focus on the amount of compensation claimed rather than on the issue of whether monetary compensation was an appropriate means of redress, although in some cases claimants did express non-pecuniary motives for bringing the case. In an arbitration hearing one of us observed in 2011, a young man had been involved in a car accident during working hours, and suffered serious brain damage. At the hearing, he was represented by his younger brother and a lawyer. When negotiations undertaken by the lawyer did not go well, the brother argued that obtaining financial redress was not the main motivation for bringing the case. He burst into tears and said: 'We do not ask for your money. Money is useless. If you could cure my brother and bring back who he was, we won't ask for additional money'. In response, the arbitrator asked the brother to be 'rational' and to focus on what could be done with money rather than what he called 'unrealistic requests.' The same arbitrator said to the firm's lawyer: 'I can barely proceed this case with such a low number. You should look at this poor family and be sympathetic.' By this the arbitrator meant that the lawyer should have less resort to technical legal arguments and should offer a reasonable amount to settle the case. A local scholar who accompanied the fieldwork visit commented:

> I do not think the final amount would be enough for the worker to have a decent life. Financially, he should have asked for the option of retaining the employment status with the firm rather than taking the money. But in reality, it would be very difficult because the firm may go bankrupt for a wide variety of reasons.

Another issue which arose in some cases concerned the nature of employment as a relationship based on exchange. In a case involving a male driver who died in a car accident, the family members of the deceased claimed that his average monthly wage was RMB 3,500 prior to death. The employer argued that the claimant was working off a debt and that there had been no employment relationship. He said:

> The driver was a hometown fellow, and I never hired him. We were in a gambling game together. He lost a lot of money to me and offered to drive a truck for me to pay the gambling debt as long as I provided him with accommodation. So there was no wage payment or labour relationship at all [case #1689].

Another issue which arose was the identification of the responsible employer. This was an issue in several claims involving construction workers, many of whom performed tasks contracted through intermediaries for which they would receive a fixed daily sum. In the context of such multi-layered contracting arrangements, it would not always be clear who the responsible employer was. It could be the firm that ultimately benefited from the worker's labour, and this conclusion was likely when there was no paperwork with the intermediary. In other cases the intermediary had signed an agreement with the injured worker, and was identified as the responsible employer.

In most cases, however, the core issue was the quantification of the pre-injury wage. Employers would try to rebut workers' self-reported wages in various ways. Where a worker derived their monthly wage by multiplying the daily rate by 30 days, an employer would argue that this was invalid because it was unlawful to work 30 days without a break. An arbitrator faced with such an argument might multiply the daily pay by 21.75 days, so excluding weekends even if the employee claimed to have worked them. In one case, a 40-year old male carpenter cut a finger at work, and was found to have an injury at level 7. He did not have a written contract and reported a monthly wage of RMB 8,277 based on his daily rate. Although no employer representative was present during the arbitration hearing, the arbitrator discounted his monthly wage using the following rationale:

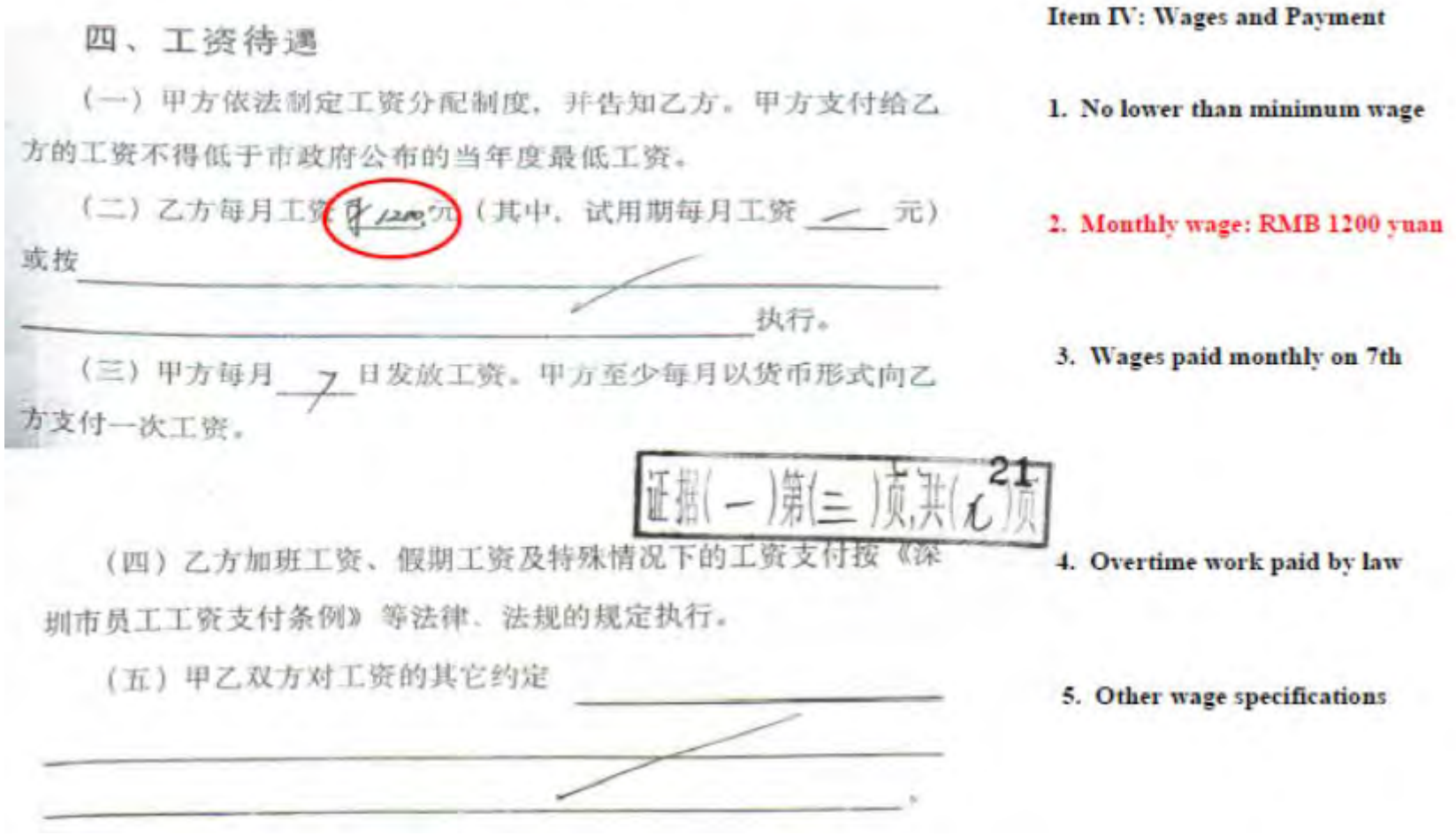
> It is not consistent with the local wage level for carpenters. […]. Following fair and just principles and according to the guideline salary at the local market level, the applicant's monthly wage should be RMB 3,036 [case #1521].

The problem in this case was that the injured worker was a very experienced carpenter who had been working in the industry for about 20 years. Because the arbitrator worked out his pre-injury wage by using the benchmark of an average worker in that trade, the award failed to reflect his true loss.

Similar problems were present in cases where the parties had agreed a written contract. Here we see evidence that using the standardized contract form to arrive at a view on the level of the actual wage tended to disadvantage workers. Figure 1 is an excerpt from a standardized employment contract that specifies a monthly wage at RMB 1,200, equivalent to the local minimum wage level. A large proportion of wage income is likely to have come from other sources which in this agreement are crossed out as not applicable. Had such an approach been taken in this case the wage would have been closer to RMB 2,500.

Why did workers not present other documentary evidence in support of their claims to have been earning wages above the basic minimum? A possible explanation is that many migrant workers, in particular in construction, had no written agreement of any kind, and were not in the habit of recording their affairs in a documentary form. In some cases firms may simply have withheld relevant information from workers.

Figure 1: Excerpt from a Sample Employment Contract



四、工资待遇

（一）甲方依法制定工资分配制度，并告知乙方。甲方支付给乙方的工资不得低于市政府公布的当年度最低工资。

（二）乙方每月工资 ¥1200元（其中，试用期每月工资 ／ 元）或按 ／ 执行。

（三）甲方每月 7 日发放工资。甲方至少每月以货币形式向乙方支付一次工资。

证据（一）第（三）页，共（21）页

（四）乙方加班工资、假期工资及特殊情况下的工资支付按《深圳市员工工资支付条例》等法律、法规的规定执行。

（五）甲乙双方对工资的其它约定 ／ 。

Item IV: Wages and Payment

1. No lower than minimum wage

2. Monthly wage: RMB 1200 yuan

3. Wages paid monthly on 7th

4. Overtime work paid by law

5. Other wage specifications

5.2 Quantitative Analysis

Table 3 summarizes the 294 cases by settlement methods and gender. 122 cases (41.5%) were settled through mediation. For the 91 mediated cases involving male workers, the average compensation claimed was RMB 133,566, and the average amount received was 47 percent of this initial claim (RMB 63,097). For the 31 female workers whose claims were mediated, the average compensation claimed was RMB 46,930, and the average successful claim was RMB 23,951. For the 172 arbitrated cases, the success rate (compensation/initial request) for male workers was 35.7 percent (89,060/249,553). The success rate of female workers whose claims were settled through arbitration was 54 percent.

The small proportion of female applicants (17%) and the smaller amount of their initial claims are not likely to be the result of women being less likely than men to submit claims through the arbitration system, given the underlying gender distribution of industrial injury cases. The NGO survey mentioned above documented a large number of injured workers who were hospitalized but did not enter the arbitration system; this gives us a basis for comparison with our own data. In the NGO dataset, which was compiled between 2003 and 2010, 12.8 percent of the injured and hospitalized workers were female (N=10,070). This gender ratio does not change much by year. For example, 16.1 percent of the injured workers were female between 2009 and 2010, the period corresponding to our primary dataset of 294 accidents that took place in 2009 and 2010. This gender distribution is mainly down to the tendency of women to work in less physically hazardous occupations, making it less likely that they would experience serious injuries of the kind giving rise to extensive pain and suffering and financial losses.

For the arbitrated cases, workers had to wait on average for more than a year from the day they were injured to the day their cases were settled. This was not incompatible with the time period set by law for the resolution of such disputes. When an injured worker files an application for his or her accident to be certified as industrial injury, the HRSSA staff review the case to decide whether there was a *de facto* labour relationship or employment contract, and to identify the responsible employer. The resulting certification constitutes a legal determination that is often challenged by employers. An employer can appeal against an industrial injury certification made by the local bureau of HRSSA, and it is common for such determinations to be overturned on appeal. While such appeals are being heard, an employer may file an application with the

LDAC to delay the arbitration process. This accounts for some of the delays experienced in the cases in our dataset.

Table 4 reports the causes of the injury, and shows that 86.4 percent of the cases were categorized as workplace accidents. Car accidents contributed to 18 cases. There were eight cases caused by occupational diseases, mainly pneumosilicosis of the kind which is common in the construction industry in the region we were studying. A major further category consists of violence between workers. The pattern of claims indicates a rough balance between manufacturing and services sectors of the kind which characterizes the major urban center in which the LDAC was operating.

According to an NGO leader one of us interviewed, injuries caused by the joint effect of malfunctioning and often second-hand machinery, a lack of safety training, and prolonged working hours are widespread in this city and region. Workplace safety has long been a major issue for labour unions, too. A city-level union leader from another province explained to us in an interview how he organized a concerted safety campaign with some positive responses from both employers and workers. Among a cluster of local firms that were producing leather belts, he promoted safety improvement techniques adopted from Japanese competitors. He said:

> It does not cost much. All they need to do is to add a foot pedal to the existing machines. Workers no longer need to manually place the belt under a hammer. By simply pressing the foot switch, they save their fingers from potential injuries. I have told firm owners that it saves them many 100,000 yuan (for example, for compensating an injured thumb).

Table 3: Case summaries

# Cases	Gender	Ave request (unit: RMB)	Ave compensation (unit: RMB)	Ave days btw injury and settlement
Mediated	Male (91)	133,566	63,097	488
122	Female (31)	46,930	23,951	460
Arbitrated	Male (153)	249,553	89,060	574
172	Female (19)	88,943	47,994	531

Note: Regardless of resolution routes, 17% applicants are female.

Table 4: Injury Cases by Sector, Cause, and Degree

Sectors	Construction	Logistics	Manufacture	Property management	Others
Total cases	82[a]	43	60	55	54
By causes					
Workplace accidents	70	34	56	49	45
Car accident	1	10	3	2	6
Occupational diseases	8	0	0	0	0
Other causes	3	0	1	4	3
By degrees:					
Death	0	5	1	2	0
1-4	4	6	3	4	2
5-6	7	2	5	2	3
7-10	69	30	44	44	43
Not severe	0	0	7	3	6

Note:

a. There were two files that included no information on the medical evaluation.

5.2.1 Arbitration versus mediation

Prior research on labour dispute resolution in China has claimed that arbitrators often come under political pressure to settle a dispute through mediation, with some suggestions that arbitrators are given quotas for cases to be settled by the mediation (Cooke 2008; Chen 2010). However, this conjecture has been largely unsupported by empirical evidence up to now. Our dataset enables us to test it.

Table 5 reports the results of *logit* regressions on the likelihood of an injury case settled being through arbitration vis-à-vis mediation. Model 1 includes both injury and death cases with standard errors adjusted by the identity of the arbitrator. The results show that the presence of a written contract made a case over twice (exp (0.801) =2.2) as likely to be settled by arbitration. A case involving a male worker (coefficient=0.706, $p<0.05$) who was paid daily (coefficient=1.295, $p<0.01$) and had a lawyer (coefficient=1.659, $p<0.01$) was also more likely to be arbitrated. When an employer was represented by a lawyer rather than a human resource manager to handle a case, the dispute was 5.3 times (exp (1.659) =5.3) more likely to be arbitrated. This suggests that employers were keen to seek an arbitral award. Job tenure (coefficient= −0.016, $p<0.01$) and firm size (coefficient= −0.247, $p<0.01$) reduced the likelihood of arbitration.

The pattern presented in Model 1 remains robust in Models 2a-2c which include injury cases only and use different methods to adjust standard errors. In these models, cases involving a written contract were again more likely to be settled by arbitration.

5.2.2 The effects of formalization on compensation levels

Table 6 reports OLS regressions on the amount of compensation awarded in natural log. In order to address possible selection-bias effects from having a written contract, we report OLS regressions with and without propensity-score weighting (PSW) (Guo and Fraser 2014). We assign a weighting score to a case as follows. We first run *logit* regressions to predict the likelihood of having a contract and generate a predicted likelihood of having a contract (*p_contract*). We then compute the weighted score for each case according to the predicted likelihood of having a contract. For a case with a written contract, the weighted score equals 1 divided by *p_contract.* For a case without a written contract, the weighted score equals to 1 divided by (1 − *p_contract*).

Table 5: *Logit* Regressions on the Likelihood of Arbitration (versus Mediation)

	Death case included	Death cases excluded		
	Model 1	Model 2a	Model 2b	Model 2c
Contract	0.801**	0.811**	0.882***	0.882***
	(0.409)	(0.406)	(0.334)	(0.336)
Injury severity	0.081	0.056	0.076	0.076
	(0.120)	(0.125)	(0.103)	(0.089)
Male	0.706**	0.704**	0.632	0.632
	(0.295)	(0.297)	(0.521)	(0.408)
Age	-0.014	-0.014	-0.011	-0.011
	(0.019)	(0.019)	(0.013)	(0.017)
Tenure	-0.016***	-0.015***	-0.014***	-0.014***
	(0.006)	(0.006)	(0.005)	(0.005)
Paid daily	1.295***	1.297***	1.235***	1.235**
	(0.426)	(0.431)	(0.405)	(0.488)
Worker with a lawyer	0.819*	0.819*	0.764***	0.764**
	(0.441)	(0.437)	(0.185)	(0.359)
Firm with a lawyer	1.659***	1.649***	1.765***	1.765***
	(0.336)	(0.336)	(0.354)	(0.329)
Natural log of initial request	0.168	0.166	0.139	0.139
	(0.255)	(0.252)	(0.162)	(0.200)
Firm size	-0.247***	-0.248***	-0.267***	-0.267***
	(0.073)	(0.074)	(0.073)	(0.074)
Industry (others as reference)				
Manufacturing	0.158	0.159	0.140	0.140
	(0.494)	(0.489)	(0.454)	(0.497)
Construction	-0.441	-0.405	-0.284	-0.284
	(0.536)	(0.534)	(0.490)	(0.594)
Logistics	0.070	0.030	0.014	0.014
	(0.630)	(0.638)	(0.489)	(0.563)
Property	0.383	0.394	0.312	0.312
	(0.579)	(0.572)	(0.404)	(0.538)
Constant	-1.701	-1.626	-1.424	-1.424
	(2.673)	(2.630)	(1.872)	(2.123)
Model clustered by:	Arbitrator	Arbitrator	Labour lawyer	No
Pseudo R-square	0.2249	0.2139	0.2240	0.2240
N	279	271	281	281

Standard errors in parentheses; * p<0.1, ** p<0.05, *** p<0.01 (two-tailed tests)

Table 6: *OLS* Regressions on the Natural Log of Compensation Amount with and without Propensity-Score Weighting (PSW)

	No PSW Model 3a	With PSW Model 3b	No PSW Model 4a	With PSW Model 4b
Contract	-0.238	-0.106	0.126	0.181
	(0.200)	(0.155)	(0.158)	(0.177)
Arbitration	-0.515**	-0.562**	-0.232	-0.300
	(0.247)	(0.271)	(0.225)	(0.274)
Contract × arbitration			-0.630**	-0.492*
			(0.304)	(0.273)
Injury severity	0.106	0.108	0.102	0.101
	(0.084)	(0.081)	(0.086)	(0.082)
Male	0.364	0.200	0.366	0.203
	(0.354)	(0.330)	(0.354)	(0.333)
Age	0.006	0.007	0.006	0.008
	(0.011)	(0.010)	(0.011)	(0.010)
Tenure	-0.004	-0.005*	-0.003	-0.004
	(0.003)	(0.003)	(0.003)	(0.003)
Paid daily	0.133	0.267	0.096	0.251
	(0.372)	(0.424)	(0.366)	(0.422)
Worker with a lawyer	0.368	0.360	0.383	0.381
	(0.306)	(0.279)	(0.301)	(0.277)
Firm with a lawyer	0.097	0.190	0.089	0.184
	(0.229)	(0.238)	(0.230)	(0.240)
Natural log of initial request	0.486**	0.527***	0.477**	0.516***
	(0.214)	(0.178)	(0.214)	(0.178)
Firm size	-0.013	-0.016	-0.002	-0.008
	(0.042)	(0.041)	(0.042)	(0.041)
Industry (others as reference)				
Manufacturing	-0.227	-0.177	-0.200	-0.167
	(0.296)	(0.266)	(0.300)	(0.269)
Construction	-0.217	-0.163	-0.182	-0.130
	(0.400)	(0.462)	(0.406)	(0.466)
Logistics	-0.077	-0.119	-0.048	-0.104
	(0.226)	(0.247)	(0.230)	(0.246)
Property	-0.802	-0.725	-0.771	-0.714
	(0.526)	(0.471)	(0.530)	(0.475)
Constant	4.378**	3.995**	4.242**	3.873**
	(2.024)	(1.706)	(2.034)	(1.722)
N	267	267	267	267

Standard errors in parentheses; * p<0.1, ** p<0.05, *** p<0.01 (two-tailed tests)
Note: a) Industrial death cases are excluded from analysis.
b) All models are clustered by arbitrators (standard errors are adjusted accordingly).

The result in Model 3a suggests that arbitrated cases received a smaller amount of compensation by 51.5 per cent (coefficient= −0.515, $p<0.05$). The sign of the variable *contract* is negative, but not statistically significant (coefficient= −0.238, $p>0.1$). This pattern remains the same in Model 3b, which includes a PSW for having a written contract before entering the arbitration system. Models 4a and 4b include an interaction term for the contract and arbitration variables. The results show that having a contract decreases the amount of compensation for arbitrated cases as opposed to mediated ones. For example, in Model 4b with PSW, a written contract reduces the amount of compensation by 49.2 per cent for arbitrated cases (coefficient= −0.492).

This effect may run counter to expectations of the protective effect of written contracts, but in the light of our earlier analysis it may be less unexpected given the prevalence of pay for performance schemes and the opportunity which written contracts give employers to question workers' self-reported wages. A standardized contract only specifies a basic monthly wage and often leaves piece rate or incentive pay unspecified. Employers can rebut claims of actual wages paid made by workers, by pointing to the wage stated in the contract as the 'true' wage and hence the benchmark for calculating compensation. The worker then has the burden of proof in challenging the wage stated in the written contract.

That this is a plausible interpretation is supported by have evidence from the case files of employers inducing workers to sign written contracts *after* an injury had occurred, as a way to reduce the employer's potential legal liabilities. In case #541, a 40 year old male worker had started to work as a machine operator in an electronic firm on May 12th, 2009. He did not sign a contract, but verbally agreed a basic monthly wage at RMB 1,900 with overtime pay. His right thumb was injured on August 18th, 2009. While he was still receiving medical treatment on August 20th, 2009, his firm induced him to agree an employment contract which specified his basic monthly wage at RMB 1,200. A similar scenario unfolded in several other cases (cases #541, 699, and 1835).

Conversely, workers often had little success in challenging the terms of written contracts. In two cases, injured workers claimed that they had never signed an employment contract and therefore were entitled to double the basic rate of pay. However, in each case the employer was able to produce a contract with the worker's signature during the arbitration hearing (cases #305 and 2789). These cases suggest that arbitrators tended to defer to the terms of written contracts, and hence to the employer's view of the agreement, even in circumstances where contracts were signed after the event of the injury, or were contested.

5.2.3 Robustness checks

For the results reported in Table 6, we use the ratio between the compensation awarded and the initial claim as an alternative dependent variable. The main results remain the same. We also use a number of other dependent variables, based on the details from cases which led to an arbitral award issued by an arbitrator. For example, these cases disclose details of the breakdown of claims against a number of different compensation categories. Where this was the case, arbitrators had to explain their reasons for rejecting a claim on a point-by-point basis. This enables us to run regressions based on the different components of claims as opposed to the total sum awarded. When we do this the results display a similar pattern to before.

We test for multicollinearity by calculating the variance inflation factor (VIF), which indicates whether a given independent variable can be explained by other independent variables. A common threshold value for the VIF is 5 (Studenmund 2001); beyond this an independent variable should be removed from the analysis. The VIF values for all independent variables are lower than 3.5, indicating that multicollinearity is not a concern.

6. Discussion and Conclusion

6.1 Overview of findings

This paper has highlighted some unintended effects of the recent formalization of employment contracts in China. Employing a unique hand-collected dataset of 294 injury cases handled by an LDAC in 2010 in southern China, we find that 1) having a written contract made a case more than twice as likely to be arbitrated; but 2) for the arbitrated cases, having a contract lowered the amount of compensation by about half.

Our quantitative evidence, in conjunction with findings from contextual qualitative analysis and interviews, sheds light on how labour valuation occurs in an emerging labour market. Specifying contract terms *ex ante* may reduce the value of workers' labour capacity *ex post* because of the opportunities it gives employers to exclude consideration of actual or customary wages in dispute resolution processes arising from workplace injuries. This is because standardized contracts tend to specify only a basic wage, which is often significantly lower than the actual wage paid or the customary wage for that industry. Standardized contracts also tend to understate the higher wages received by employees with greater experience in the industry. In the course of the dispute resolution process, arbitrators defer to the terms of the written

contract, placing workers under a heavy burden of proof to show that the true wage was higher than indicated in the agreement.

Further factors were at work in the labour market we were studying, which is typical of many in China and other countries affected by the operation of GVCs. The prevalence of performance-related pay, which means that actual wages paid tend to vary day by day or week by week, exacerbates the tendency of the formal contract to favor the employer.

Our research makes three contributions. Firstly, we have made a systematic investigation of some unintended consequences of contract formalization. Using a unique dataset, we documented how the form of contracts affects industrial injury compensation, to workers' disadvantage. While earlier research on the adverse effects of formal rules has highlighted the role of changes in perceptions and behavioral factors, we have identified a different mechanism: the formal contract altered the relative bargaining power of employers and employees during the dispute resolution process following a workplace injury.

Our second contribution is to a more nuanced understanding of the process of labour valuation. The incompleteness of the employment contract is a fundamental construct and practice of labour market institutions in advanced market economies, and is now becoming prevalent in emerging markets as wage labour becomes more common. Industrial injury cases provide an ideal situation to examine how labour capacity is priced in countries, such as China, which are undergoing a transition to a market-orientated system of work relations. Our findings suggest that rules intended to protect workers by placing employers under an obligation to formalize terms and conditions of employment may not have their intended effect in a context characterized by variable payment systems and severe cost pressures imposed on employers by the operation of GVCs.

Our third contribution is to provide an empirically-grounded study of labour dispute resolution processes and outcomes in an emerging market context. Prior research on these matters has either relied on aggregate level data, or has drawn on a limited number of interviews. The systematic analysis we presented in this paper bridges these two traditions, taking advantage of the conjunction of a sizable number of observations and contextually rich information coded from case files. Our data are based on a limited sample from a single archival source and do not purport to be representative of national or regional practice; nevertheless, in the absence of representative survey data for China of the kind which exists in some other countries (see Corby and Burgess 2014), our study

represents the first systematic study of the impact on employment contract formalization on arbitration outcomes following the landmark 2008 reforms.

6.2 Discussion

Despite the counterintuitive effect of formalized contracts in the context of injury compensation that we have observed, our research by no means suggests that contracts always fail to protect workers' interests. The drawbacks of employment contracts that we have identified are linked to the context that we were exploring. It is not within the scope of this paper to generalize the effect of employment contracts to other settings. There is some evidence of a downside for employers in formalizing employment contracts under certain circumstances, which needs to be understood in the context of China's developing labour law policy. The past decade has seen increased attention and efforts to improving working conditions in response to both domestic and international pressures. In response, more firms began to agree formal contracts with a larger proportion of their workforce. Contracts are often enforced against employers rather than against workers. Employers rarely take action if a worker breaches a contract. The pro-labour laws taking effect in 2008 removed barriers to workers defending their rights through the process of contract enforcement. Against this background the implication of our work is that the operation of employment contracts is double-edged: employers may be disadvantaged when it comes to enforcing some aspects of employment contracts, yet in others may be able to use formally stated wage levels to reduce the compensation received by workers. Future research on other types or steps of labour dispute might enrich our understanding of the varying effects of contracts in different contexts.

6.3 Limitations and Future Research

Several limitations could be addressed by future research. Firm ownership might be an important factor affecting the frequency of injuries at a given firm, the resolution process, and outcomes. Existing studies have pointed out these ownership-based differences. For example, Choi (2008: 1929) finds that less regulated managerial styles and long working hours accounted for a large number of the labour disputes in firms owned by Hong Kong and Taiwanese investors in China. Unfortunately, there is no information on firm ownership from the SAIC registration database in terms of its majority shareholders; nor could we gather reliable information through other sources. This could be the subject of future research.

Another area for future research would be a study of legal professionals in the field of labour laws. We conducted an exploratory analysis of this issue by

examining archives of the local lawyers' association. This suggested that local law firms did not have a strong concentration on labour laws. The few specialized labour lawyers moved between law firms, but often found it difficult to get promotion from associate to partner level (even within the 2-year window of our research setting). A dedicated data collection process would be needed to better understand the increasing usage of legal service by workers despite the slow development of legal expertise in labour law and the apparently limited promotion opportunities for those specializing in this field.

An additional consideration is that the context we were studying was one in which grassroots labour organization is largely absent. Chinese trade unions function largely as an arm of the state. They are active in negotiating collective agreements and there is evidence that the labour standards resulting from these agreements have a tangible impact on employers in certain sectors and regions (Lee 2009). However, this is a largely top-down mode of regulation of terms and conditions of employment; within the typical workplace, there is often little or no union presence, and employment relations are highly individualized. This is a very different context from, for example, European countries with a tradition of employee representation at workplace level, in which trade union or works councils are able to monitor employers' compliance with labour legislation and collective agreements. It is possible that, in these circumstances, laws requiring the formalization of employment contracts will have more positive impacts in terms of worker protection. This is an issue which may be pursued in future through research comparing the experience of emerging labour markets with those of the global North.

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Data Appendix

Table A1: Lists of interviewees whose quotes were used in this paper

Interviewees	Province	Description
SZW201401	Guangdong	LDAC staff
YWW201111	Zhejiang	A local scholar trained in political science
YWC201111	Zhejiang	A prominent union leader
JJC201309	Fujian	A firm owner
YWG20111	Zhejiang	An experienced manager
HMT201203	Guangdong	A former firm owner selling production lines to a large domestic brand managed production there
GDL201203	Guangdong	An NGO leader who used to focus on injury cases and later shifted to collective bargaining
PYL 201401	Guangdong	An NGO leader who used to focus on injuries and currently work on labour standards

Note: we only listed the respondents whose interview notes were used in this article.

Table A2: Frequently Requested Compensatory Categories

Compensatory categories	Calculation basis
Most commonly requested:	
Suspension-of-work-with-pay	Original wage and welfare benefits
A disability employment allowance	Stipulated by the government
Work-related injury medical allowance	Stipulated by the government
A disability allowance	Workers' monthly wages
Medical treatment related:	
Medicine and surgery	Medical bill
Meal allowance when hospitalized	70% of the meal allowance for travel on duty
Travel and boarding expense for medical treatment	Firm standard rate for travel on duty
Nursing care for injury with self-care disability	Average nurse salary (usually 50 yuan/day)
Artificial limbs, orthosis, eyes, and false teeth, wheelchairs, etc.	Stipulated by the government
For severe injured workers:	
Living care for severe injury	50%, 40%, 30% of monthly wages
A disability allowance	Workers' wages in a lump sum
A monthly disability subsidy	75%, 80%, 85%, 90% of monthly wages

Note:

a. this is only a list of most commonly requested categories; mental suffering is requested by some workers but explicitly rejected by arbitrators;
b. the specific categories for industrial death such as financial support for underage children and elderly parents are not listed here;