Disagreements on Union between Management and Workers in Chinese establishments.

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Abstract

This paper uses employer-employee matched data and their different perspectives as to union existence in each establishment to investigate what unions do in Chinese establishments. Our basic findings are as follows: (1) there are widespread disagreements as to the existence of unions between management and workers, and among workers from different unionized establishments, and unions' participation in the workplace activities are important for workers' recognition of union existence; (2) workers' recognition of union existence is a better indicator for union strength/effectiveness in Chinese establishments than official union existence reported by management; (3) union strength in establishments, in terms of workers recognition of union existence has significant effects on workers' wages, benefits, promotion opportunities and turnovers; (4) one potential mechanism through which unions affect workers' outcome is that better recognized unions promote better management-worker relationship.

I Introduction

Union related literature

There is a large literature in the study of labor unions. Findings from the developed countries are extensive and insightful, which include unions effects on wages, income distribution, welfare, voting, women, on management and HRM policies, on firm performance and on the economic outcome etc. (Freeman and Medoff, 1984; Freeman and Kleiner, 1999; Freeman, 2003; Hirsch, 2004; Bennett and Kaufman, 2004; Verma, 2005).

China apparently has more trade union members than the rest of the world put together. But as David Metcalf and Jianwei Li (2005) have found, Chinese unions function very differently from unions in the west. People have long been suspecting whether unions in China, under the control of ACFTU have real effects. For one thing, Chinese unions are not politically independent but are controlled by the State-Party through a hierarchical system. Union officials are usually not elected by the union members but appointed by the State-Party and belong to the government administration. For the other, unions in China have multiple and sometimes conflicting objects, to assist the State-Party in an administrative function, to maintain social and political stability, to collaborate with the management to improve production efficiency, and to represent and protect the interests of employees.

Empirical findings about unions' effect on workers are inconsistent.

Chen (2003) provided several case studies to show that the representation role of unions has been highly restricted because their influence stems not from organized labor but from their official institutional status. Metcalf and Li (2006) investigated three unionized non-state enterprises in the Hainan province and found that the workplace unions are weak in collective bargaining and dispute resolution, and just play a welfare role. They concluded that Chinese unions cannot impose costs on the enterprises, and neither can they improve the efficiency of enterprises.

Lu et al. (2010) used the Private Enterprise Survey data and found the positive link between unions and employee benefit and enterprise productivity. Based on a survey of 1268 firms in 12 Chinese cities, Yao and Zhong (2013) found that unions have positive effects on employee welfare.

There are also wide empirical findings about unions' effect on firm performance. Freeman and Medoff (1984) found that, in general, unions tend to increase productivity while they lower profitability. Hirsch (2004) summarized the empirical studies on this topic since the publication of What Do Unions Do? concluded that the average union productivity effect is very close to zero. Consistent with the view of Freeman and Medoff (1984) and Hirsch (2004), Metcalf concluded that union productivity effects depend heavily on the environment, especially on the interaction between a high-performance work system and unions. The international evidence also pointed to lower profit or financial performance in unionized workplaces, and that unionization has reduced investments for all countries except Japan.

In the case of China, the presence of unions in the workplace may increase production costs. The empirical evidence in the previous section suggests that unionization is significantly and positively associated with enterprise average wage and benefits.

Previous studies about union existence on workers' and firms' outcomes obtain the union existence information mostly from management which ignore workers' perspective towards unions. This article uses a unique datasets which contains different perspectives on union existence from the employers and employees to see whether disagreements on union of employers and employees from the same establishment will have effects on the performance of the workers as well as the establishment.

More general literature

Disagreements sometimes could a result of asymmetric information or a result of different interest and different experience. Employers know better about the profits, labor cost share, and the relative income of different types of workers, while workers know better about their efforts and their ability to finish a particular task (Parsons, 1986; Autor, 2001).

Disagreements can also come from different interests and experiences. Liao et al. (2009) find that there is disconnection between what managers and companies say they do as formal practices of the high-performance work systems and what individual employees actually experience.

Disagreements can have effects on both worker and establishment performance.

The rational-normative strategic management literature posits the importance of

consensus as an outcome of strategy formulation process. Dess and Origer (1987) summarized consensus-performance research. The studies mostly focus on the top management team consensus and the outcomes. Empirical studies find positive relationships between top management team consensus variables (consensus on goals, competitive methods and environment perceptions) and firm performance (Bourgeois (1980), Dess (1987) and Dess and Keats (1987)), and also negative relations between TMT consensus and firm performance (Grinyer and Norburn, 1975).

Liao et al. (2009) find employees' idiosyncratic experiences of the work system, directly influence their level of human capital, psychological empowerment, perceived organizational support, and service performance.

Using the survey data of matched employer and employee from Chinese establishments in 2013, we try to find out what affects the disagreements of workers and managements different perspective as to union existence and also investigate what does workers recognition mean and how it will affect workers as well as establishments' performance. Our basic findings are as follows: (1) there are widespread disagreements as to the existence of unions between management and workers, and among workers from different unionized establishments, and unions' participation in the workplace activities are important for workers' recognition of union existence; (2) workers' recognition of union existence is a better indicator for union strength/effectiveness in Chinese establishments than official union existence reported by management; (3) union strength in establishments, in terms of workers recognition of union existence has significant effects on workers' wages, benefits, promotion opportunities and turnovers; (4) one potential mechanism through which unions affect workers' outcome is that better recognized unions promote better management-worker relationship.

II Data and statistics

About the data

The dataset we use is 2013 employer-employee data. 2013 Chinese employers - employees survey data was conducted in 12 cities, with 444 enterprises and 4532 employees.

The geographical distribution of sample enterprises is by the four large regions, i.e. East, Middle, West and Northeast, in each region drawing a capital city and a prefecture-level city in general, with Beijing representing municipality cities. In addition a southern provincial capital city was added. With 50 enterprises from Beijing, 40 enterprises from Capital cities of Fuzhou, Jinan, Chengdu, Changchun Zhengzhou, 25 enterprises from prefecture cities of Qiqihaer, Xianyang, Suzhou, Xiangyang, and with 44 newly added enterprises from Taiyang, and 50 newly added enterprises from Guangzhou.

The sample is based on the 2008 national economic census data sample frame (removal of the small enterprises with less than 20 employees). Stratified two-stage sampling method is used. In first stage, all enterprises are sorted according to the size of employees, and 3000 enterprises were selected by equivalent distance for the sorted enterprises. In the second stage, the selected 3000 enterprise in each city will be divided

into random sample groups by random numbers according to the sample size (50, 40 or 25) and survey was started from any random groups. If there is rejection, or delay or losing contact etc., replacement of similar enterprise should be found (according to size of employees and industrial standards) until we get required sample sizes.

Employees sample is drawn after entering the enterprise. With the required proportion 6:2:2 of grass rooted employees, technicians, and managerial personnels (not include top level CEO), and with old age, median age and young employees all covered, the surveyed workers are designated by enterprises. Sample size of employees per enterprises is 10 in general, with adjustment of size according to the employee size of the enterprises, with the minimum of 5 and the maximum of 20.

The survey was conducted between August and December, 2013. A total of 444 completed the questionnaire and 4532 employees of the sampled enterprises completed the questionnaires. **After computer cleanup work, 444 of the enterprise questionnaires and 4532** of the questionnaire all effective questionnaires, some sensitive questions contain a few missing information (such as in corporate revenues, profits and total assets research project), with total missing data rate less than 1%.

By comparison, our sample show similarity with the 2008 national census data, in the distribution of industry, firm size composition, business registration types, and several other types of dimensions, indicating that this sample of companies surveyed having some nationally representatives.

About union existence and union participation in workplace activities

In both survey of employer and employee, same questions were asked as to union existence and union activities.

As to union existence, it is asked “Is there a union in your establishment?” to both management and surveyed workers. **According to workers response, the union coverage about Chinese establishments is around 37%; according to management response, the union coverage about Chinese establishments is around 51%. And there is a gap of disagreements on union coverage of 24%.**

As to unions participation in workplace activities, the following questions are asked “1 Does the union help with workers’ signing labor contracts”; “2 Does the union help with workers signing collective contracts”; “3 Does the union help with meditate labor disputes”; “4 does the union help with protect workers’ rights”; ”5 Does the union help with listen and reflect workers’ opinions and demands”; “6 Does the union provide economic help to workers who face difficulties”; “7 does the union organize cultural and entertainment activities?”

We will use both **matrix and figures and index** to show the different perspectives on union existence and what do unions do in Chinese firms.

(1) Disagreement index - DIS

We define an index to reflect management – worker disagreement. **We use the proportion of workers who would have to change their statement in order to be consistent with employers’ statement to define the disagreement index (DIS), which falls into the range of 0 to 1**. 0 means no disagreement between management and workers, and 1 means there is complete disagreement between management and

workers. For example, when employer says there is union existence and 5 of the 10 surveyed workers say there is no union in the establishment, DIS equals 0.5, if only 1 of the 10 surveyed workers say there is no union in the establishment, DIS equals 0.1.

From table 2.1, it is obvious that there is more disagreements on what unions do than union existence in Chinese firms. This makes sense as union existence is more of a fact, and people's perspectives on unions activities is affected not only by the facts but also by their subjective judgements and preferences. In the following analysis, we will mainly focus on union existence.

Table 2.1: Disagreement index on union existence and union participation in workplace activities

Disagreement index		Obs	Mean	Std. Dev.	Min	Max
DIS	union existence	441	0.21	0.31	0	1
DIS 1	union helps with labor contract, by firm	202	0.48	0.32	0	1
DIS 2	union helps with collective contract, by firm	199	0.53	0.35	0	1
DIS 3	union helps with labor disputes consultation, by firm	199	0.44	0.30	0	1
DIS 4	union helps with protect workers' rights, by firm	200	0.46	0.30	0	1
DIS 5	union listens and reflects workers' opinion and demands, by firm	203	0.56	0.30	0	1
DIS 6	union provides economic help when workers face difficulties, by firm	204	0.57	0.31	0	1
DIS 7	union organizes entertainment activities, by firm	204	0.68	0.30	0	1

(2) Disagreement on union existence

Table 2.2: matrix for disagreement of union existence

		workers' statement about union existence (average at establishment level)		
If there is a union in the firm		All say with unions	In between	All say no unions
Management statement	With union (224, 100%)	71 (32%)	135 (60%)	18 (8%)
	No union (156, 100%)	1 (1%)	38 (24%)	177 (75%)

In table 2.2, at establishment level, we have 380 observations which have union information both from employer and employees.

Of 224 establishments where employers respond there is a union, 32% (71 establishments) have all the surveyed workers respond there is a union, 60% (135 establishments) have some proportion of workers recognize union existence, and 8%

(18 establishments) have no workers recognize union existence.

Of 156 establishments where employers responds there is no union, 1% (1 establishments) have all the surveyed workers respond there is a union, 24% (38 establishments) have some proportion of workers recognize union existence, and 75% (177 establishments) have no workers recognize union existence.

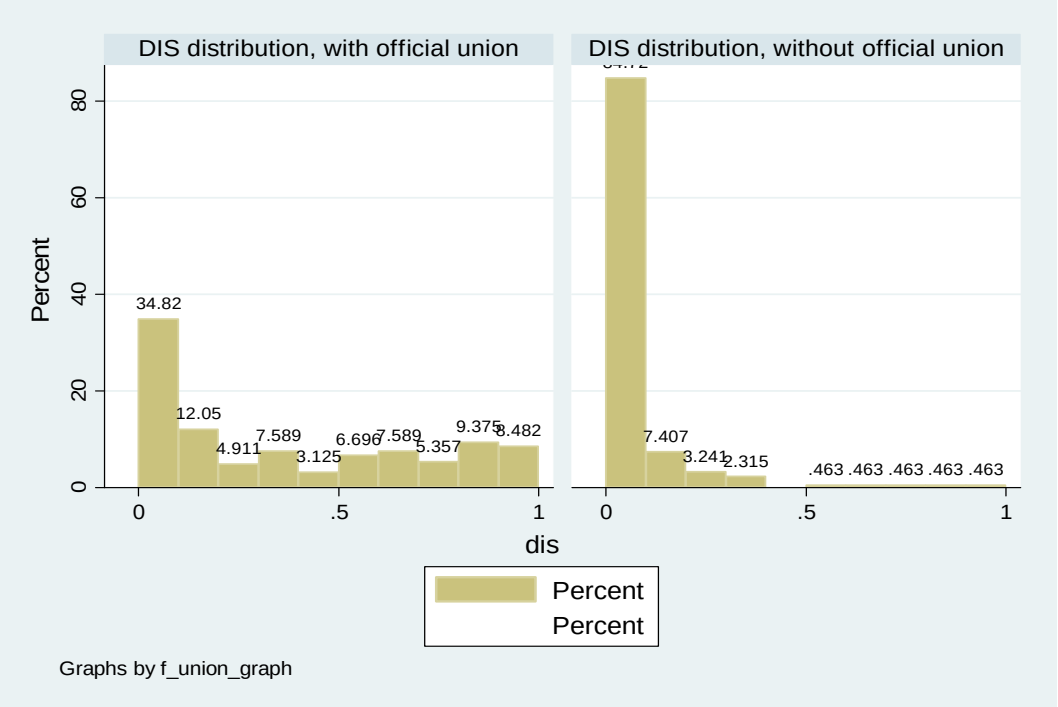


Figure 2.1: disagreement index at establishment level.

Disagreement mainly happens in unionized establishments. Figure 2.1 on the left shows the disagreement index between workers and management when there is an official union in an establishment. We see that around 35% of unionized establishments have disagreement index of 0, which means all the workers in these establishments recognize the union existence, around 28% of the unionized establishments have disagreement index between 0 to 0.5, and with 29% of the unionized establishments have disagreement index between 0.5 to 1, and with around 8.5% of the unionized establishments have disagreement index of 1, which means no workers recognize the existence of union.

Figure 2.1 on the right shows the disagreement index when there is no official union in an establishments. Around 85% of un-unionized establishments show complete 0 disagreement index, which means 80% of the workers in the un-unionized establishments knows there is no union in their establishments.

(3) Official union, recognized union by workers, and workers outcomes

We first look at the relation between the variables of workers outcomes, i.e. average monthly income, the chance of getting benefits, promotion opportunities, and job change probabilities and official union existence, which are reflected on the left figures of A1, A2, A3, A4. Where 0 means workers come from establishments with

official unions, while 1 means workers come from establishments with official unions.

Second, we look at the relation between workers outcomes with workers recognition of union existence, and they are reflected on the right hand side figures of A1, A2, A3, and A4. The samples only include workers from establishments with official unions, where 0 means the worker does not recognize union existence in the unionized establishment, and 1means the worker recognize union existence in the unionized establishment.

There is obvious difference for workers benefits and job changes between workers from unionized and non-unionized establishments. There difference between monthly average income and promotion opportunities are less obvious between workers from unionized and un-unionized establishments.

In the unionized establishments, workers who experience recognized union enjoy higher monthly average income, better chance of benefits, higher probability of promotion, and lower chance of job changes, than those who experience unrecognized union.

Figure A1:log monthly average income

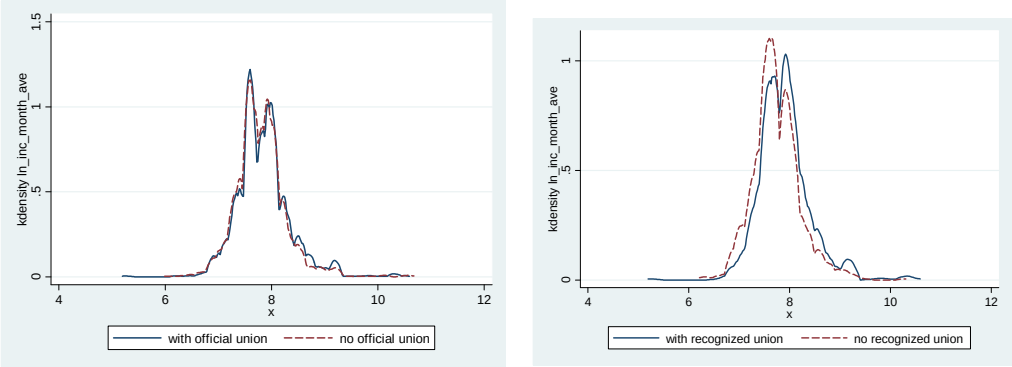


Figure A2: benefits dummy

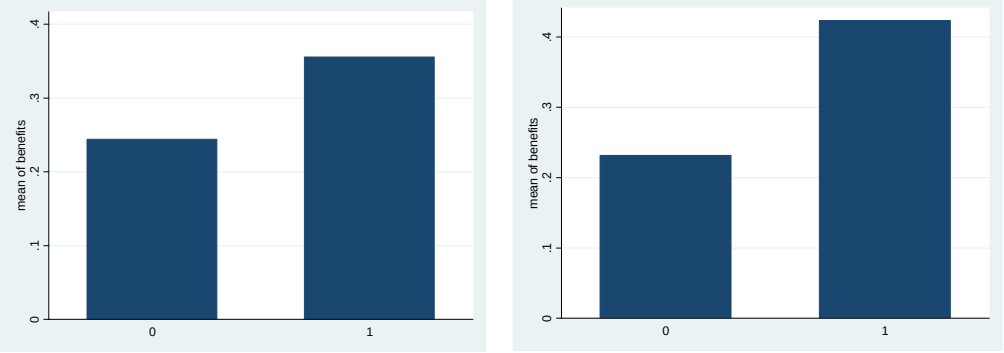


Figure A3: promotion opportunities dummy

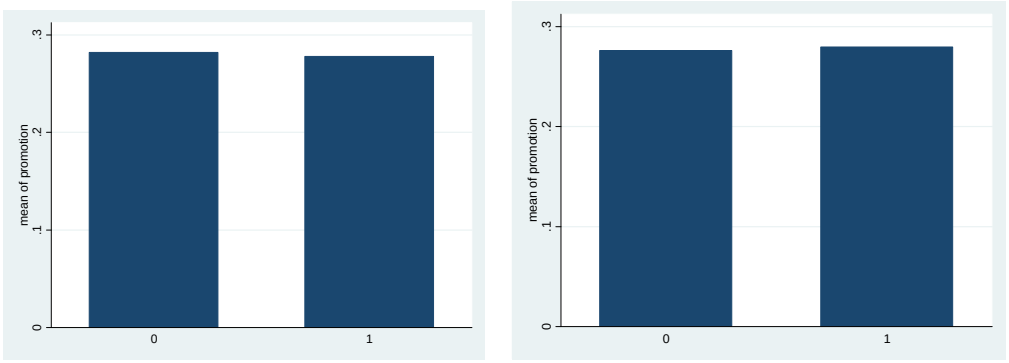
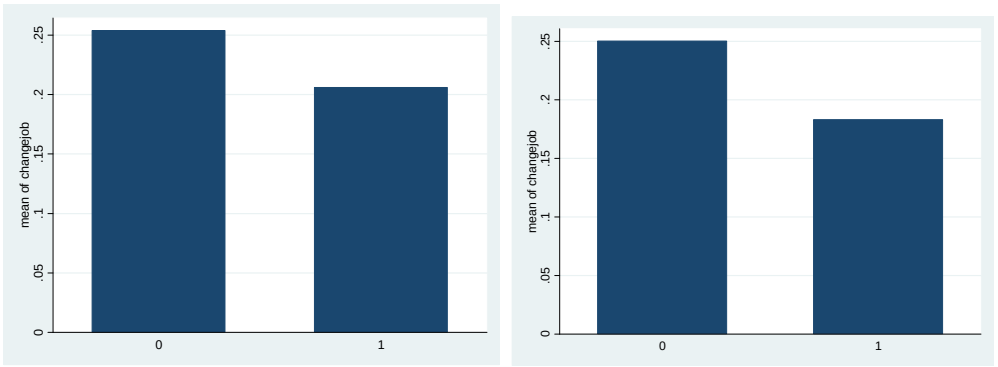


Figure A4: change jobs dummy



Notes: figure on the left hand side of A1, A2, A3, and A4 show the relationship between average monthly income, the chance of getting benefits, promotion opportunities, and job change probabilities and official union existence and official union existence, where 0 means workers come from establishments with official unions, while 1 means workers come from establishments with official unions.

The right hand figures of A1, A2, A3, and A4 show the relation between workers outcomes with workers recognition of union existence. The samples only include workers from establishments with official unions, where 0 means the worker does not recognize union existence in the unionized establishment, and 1means the worker recognize union existence in the unionized establishment.

(4) Official union, recognized union by workers, and establishment outcomes

We also look at the relationship between the performance of establishments and official union existence, and workers average recognition of union existence at establishment level.

On the left hand side of figures B1, B2, B3 and B4, we look at the relation between revenue per employee, profit per employee, average wage per employee, and value added per employee and official union existence.

On the right hand side figures of B1, B2, B3 and B4, we look at the relations between revenue per employee, profit per employee, average wage per employee, and value added per employee and the average recognition of union existence from workers. And the sample only include those with official unions.

At establishment level, the relationship between official union existence and performance of establishments are uncertain, except unionized establishments seem to enjoy higher revenue per employee than un-unionized establishments.

Meanwhile, in the unionized establishment, there is no clear trend between higher recognition of union existence and the establishments' outcome.

Figure B1: log revenue per employee

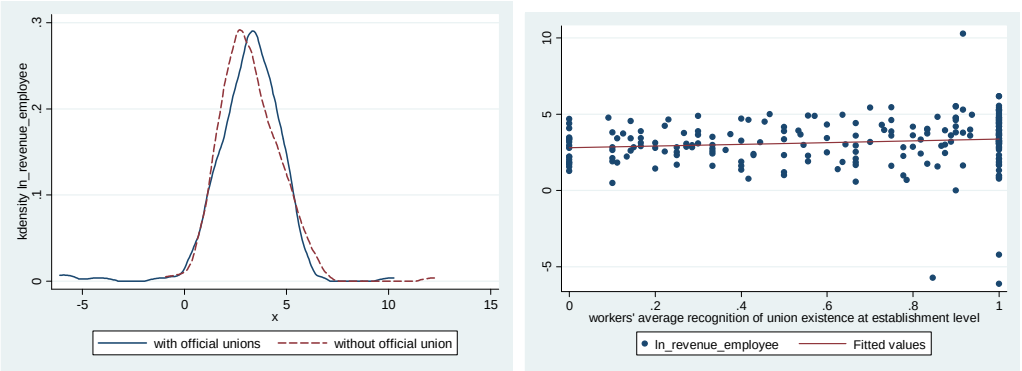


Figure B2: log profit per employee

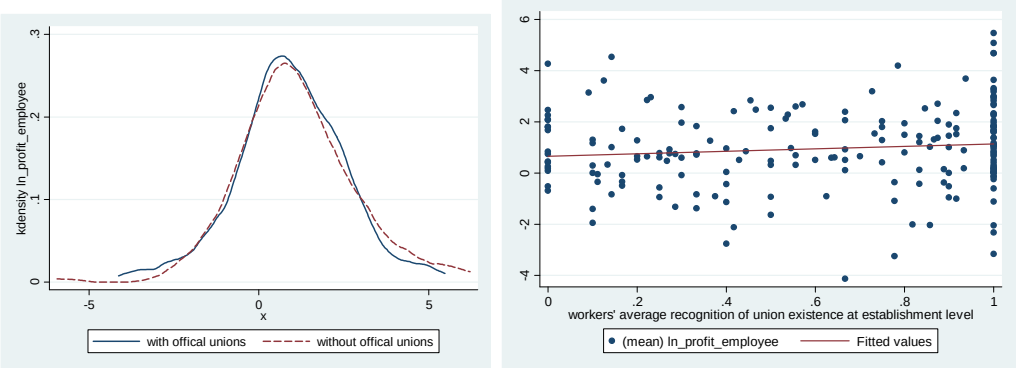


Figure B3: log average wage per employee

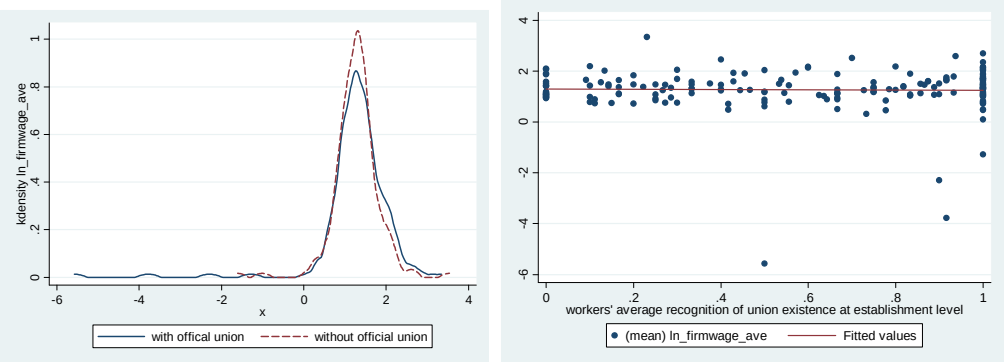
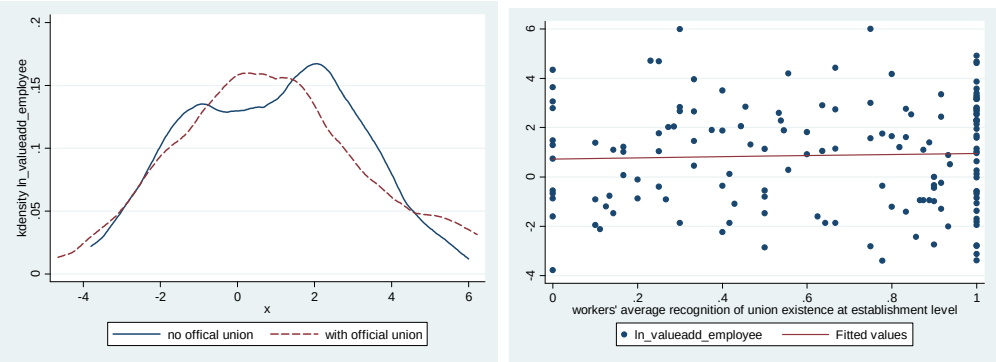


Figure B4: log value added per employee



Notes: On the left hand side of figures B1, B2, B3 and B4, we look at the relation between revenue per employee, profit per employee, average wage per employee, and value added per employee and official union existence.

On the right hand side figures of B1, B2, B3 and B4, we look at the relations between revenue per employee, profit per employee, average wage per employee, and value added per employee and the average recognition of union existence from workers. And the sample only include those with official unions.

(5) Statistics of variables of interests

Table 2.3A: statistics at worker level

Variable name	label	Obs	Mean	Std. Dev.	Min	Max
Worker level						
ln_inc_month_ave	log (average monthly income)	4249	7.82	0.48	5.19	10.68
benefits	dummy for having benefits	4486	0.3	0.46	0	1
age	age	4450	33.98	9.69	15	65
female	dummy for being female	4522	0.55	0.5	0	1
hukou_rural	dummy for having rural Hukou	4520	0.38	0.49	0	1
edu_year	education of full time formal education	4490	12.87	2.89	0	22
experience	years since the first job	3922	11.68	9.59	1	55
seniority	years since working in the current firm	4448	6.13	6.44	1	52
partymember	CPC member	4513	0.14	0.34	0	1
Labor relations						
wf_union	dummy for workers' recognition of union existence in the establishment	4523	**0.37**	0.48	0	1
wf_union_laborcontract	union helps with labor contract, by worker	1714	**0.39**	0.49	0	1
wf_union_colcontract	union helps with collective contract, by worker	1704	**0.29**	0.46	0	1
wf_union_dispute	union helps with labor disputes consultation, by worker	1714	**0.41**	0.49	0	1

wf_union_right	union helps with protect workers' rights, by worker	1716	**0.43**	0.50	0	1
wf_union_opinion	union listens and reflects workers' opinion and demands, by worker	1717	**0.56**	0.50	0	1
wf_union_help	union provides economic help when workers face difficulties, by worker	1717	**0.60**	0.49	0	1
wf_union_activity	union organizes entertainment activities, by worker	1721	**0.70**	0.46	0	1
Relation_mw	Good relationship between management and workers, by worker	1589	3.568911	.7184612	1	5

Table 2.3B: statistics at establishment level

full name	label	Obs	Mean	Std. Dev.	Min	Max
Establishment level						
ln_revenue_employee	Log (revenue per employee)	431	3.182609	1.594712	-6.107612	12.35425
ln_profit_employee	Log(profit per employee)	392	1.016062	1.665093	-5.940171	6.214508
ln_firmwage_ave	Log (firmwage_ave)	357	1.280952	.7267074	-5.573421	3.537775
ln_valueadd_employee	Log (value added per employee)	301	.8771273	2.302421	-4.65396	6.214508
relation_mw_	Good relationship between management and workers, by management	443	3.997743	.7322527	1	5
ln_size	log (size of employees)	444	4.53	1.19	2.71	9.84
f_union	firms with union, by firm	443	**0.51**	0.50	0	1
f_union_laborcontract	union helps with labor contract, by firm	222	0.77	0.42	0	1
f_union_colcontract	union helps with collective contract, by firm	219	0.55	0.50	0	1
f_union_dispute	union helps with labor disputes consultation, by firm	219	0.86	0.34	0	1
f_union_right	union helps with protect workers' rights, by firm	220	0.85	0.36	0	1
f_union_opinion	union listens and reflects workers' opinion and demands, by firm	223	0.93	0.25	0	1
f_union_help	union provides economic help when workers face difficulties, by firm	224	0.93	0.26	0	1

f_union_activity	union organizes entertainment activities, by firm	224	0.94	0.24	0	1

III. What determine workers' recognition of union existence, and what determines union existence in an establishment?

What variables are correlated with workers recognition of union existence? How much of the variations come from individual characteristics. How much are variations within establishments? How much of the variations come from variations among establishments? We use HLM (Hierarchical Linear Model) to diagnose the effects from individual level and establishment level.

In table 3.1 regressions (1), we regression the dummy variables of whether a worker recognize union existence on workers' characteristics, in the unionized establishments. The R squares are 0.156 respectively. From the regressions, we see that workers' education seniority (the years staying in the same establishments) positively related to workers recognition of union existence. Being a communist party member is positively related to recognition of union existence. Having rural hukou is negatively related to the recognition of union existence. For workers of different occupations, we see that compared to managerial personnel, employees in professional and secretary occupations are more likely to recognize union existence, while workers (either skilled or unskilled) are less likely to recognize union existence.

In regression (2) we add establishment fixed effects to control variables. When establishments fixed effects are added into the regression, R square rises from less than 0.156 to more than 0.845. Establishment fixed effects have four times more power in explaining the difference in union recognition of workers. It means that there are more between establishments variations than within establishment variations in workers' recognition of union existence.

Table 3.1 Regressions on workers' recognition of union existence

	(1)	(2)
VARIABLES	wf_union	wf_union
edu_year	0.0266***	0.0113***
	(0.00406)	(0.00377)
age	0.0382***	0.0288***
	(0.00755)	(0.00651)
age2	-0.000508***	-0.000370***
	(9.67e-05)	(8.33e-05)
seniority	0.0168***	0.00606***
	(0.00156)	(0.00160)
female	-0.0180	-0.00256
	(0.0193)	(0.0166)

Party member	0.0963***	0.00624
	(0.0263)	(0.0224)
hukou_rural	-0.0889***	-0.0264
	(0.0223)	(0.0201)
2.occupation	-0.0152	-0.0724***
	(0.0330)	(0.0271)
3.occupation	0.0493	-0.0297
	(0.0350)	(0.0296)
4.occupation	-0.0924**	-0.134***
	(0.0419)	(0.0354)
5.occupation	-0.0803***	-0.111***
	(0.0263)	(0.0221)
6.occupation	0.0475	-0.209**
	(0.101)	(0.0831)
establishment	no	yes
fixed effects		
Constant	-0.437***	-
	(0.161)	-
Observations	2,301	2,301
R-squared	0.156	0.845
Log Lik	-1369	-621.7

Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1

To further understand what factors is related to the establishment fixed effects for workers' recognition of union existence. We regress the fixed effects coefficients on two categories of variables, one category contains the characteristics of establishments, i.e. ownership, size and the other category contains unions' activities at establishment level.

There are seven union activities altogether, we try two methodology to get one comprehensive variable which reflects unions' participation in the workplace and get the variables which indicate workers participation in workplace activities, as in table 3.2.

First, we just add together the seven dummies which indicates whether union helps with labor contract, helps with collective contract, by worker, helps with labor disputes consultation, helps with protect workers' rights, listens and reflects workers' opinion and demands, union provides economic help when workers face difficulties, union organizes entertainment activities and get the variable wfa_union_all. Second, we use principle component analysis (Hotelling, 1933) to get the comprehensive variables (wfa_union_allpca) for unions' activities. Wfa_union_all, wfa_union_allpca are highly correlated with correlation coefficient of 0.99.

Table 3.2: one variable to stand for unions participation in workplace activities

Variable	Obs	Mean	Std. Dev.	Min	Max
wfa_union_all	258	3.16	1.76	0	7
wfa_union_allpca	258	0.00	2.07	-3.64	4.55

. In table 3.3 we first regress coefficients of establishments fixed effects on the characteristics of the establishments for establishments with official unions and get the results in column (1), and then we add unions' activities to the independent variables and get the results in column (2) and (3).

From regression (1) of table 3.3, we find that compared to State owned establishments, foreign owned (i.e. U.S. Europe, Japan) establishments do not have significantly differently lower likelihood on workers' recognition of union existence, while collectively owned, privately owned and Hong Kong, Macao and Taiwan owned establishments have significantly negative effects on workers' recognition of union existence. Also, establishments with more employees have positive effects on workers' recognition of union existence.

In (2) and (3), we add variables of union's activities from simple sum up of union activities and also principle component analysis. Both coefficients are significantly positive, and which show that unions that participate more in workplace activities will increase workers' recognition of union existence.

Table 3.3 establishment characteristics on the fixed effects coefficients

	(1)	(2)	(3)
VARIABLES	fe_establishment1	fe_establishment1	fe_establishment1
2.ownership	-0.138*	-0.127**	-0.126*
	(0.0708)	(0.0644)	(0.0646)
3.ownership	-0.219***	-0.204***	-0.206***
	(0.0527)	(0.0475)	(0.0476)
4.ownership	-0.266*	-0.234*	-0.239*
	(0.146)	(0.128)	(0.128)
5.ownership	-0.107	-0.0295	-0.0307
	(0.113)	(0.103)	(0.103)
ln_size	0.0447**	0.0203	0.0209
	(0.0173)	(0.0158)	(0.0158)
wfa_union_all		0.0350***	
		(0.0119)	
wfa_union_all pca			0.0277***
			(0.0101)
Constant	-0.0586	-0.0175	0.0916
	(0.103)	(0.102)	(0.0950)
Observations	224	204	204
R-squared	0.130	0.170	0.166
R-squared by hand	0.130	0.170	0.166
Log Lik	-53.52	-18.49	-19.06

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

IV. How does union affect the outcomes of workers and establishments?

(1) Workers' income, benefits, promotion opportunities, and turnover?

What are the effects of union existence and union strength on workers? In previous union studies, there is no consensus as on unions' effects on workers. By the unique design of this datasets, we can diagnose union's effects on workers in two steps.

In Step one, we will look at the general effects by official union existence on workers outcomes, which is the same as what previous researches have done.

In step two, we try to figure out how union strength affect workers outcomes, such as income benefits, promotion opportunities, as well as turnover probability. At worker level, high recognition of union existence by workers reflects union's strength, which means unions do something effective which let more workers know about its existence. Thus we predict that union strength will increase their loyalty, their efforts, their productivity as well as income, benefits, promotion chance, and reduce its mobility and increase its potential promotion opportunities.

Table 4.1 look at the effect of official union existence on workers monthly average income, benefits, the chance of being promoted, and the probability of change jobs. Regression results show that after controlling individual characteristics and establishment characteristics, official union existence at establishment level is positively related to workers income, benefits and promotion, these results seem to be against the opinion of "paper" unions.

The regressions also show that education is positively related to workers monthly income, the chance of getting benefits, but have no significant effects on promotion or workers likelihood of changing jobs. Age has inverse U shape on income, benefits and promotion opportunities, and have negative effects on job changes.

Staying in the establishments for longer period will have significantly positive effects on benefits and negative effects on job changes, but have no significantly positive effects on monthly income or promotion chance.

Communist party member have no significant effects on income, benefits, promotion or job changes, rural hukou is negatively related to income, but positively related to promotion opportunities, and job changes. This makes sense if rural hukou will have workers with lower starting posts with the comparable urban hukou counterparts.

Occupation have significant effects on monthly income and promotion chances for employees. Generally speaking, managerial person have higher income than professional experts, than administrative and secretary staff, than skilled worker, than unskilled workers. This also holds for promotion changes. But there is no significant difference in benefits except between unskilled workers and other employees. Also administrative and secretary staff are most likely to change jobs.

Ownership is important too. Compared to State owned establishments, workers in

foreign owned firms enjoy higher monthly income, but lower chances of benefits, and higher proportion opportunities.

Older firms generally have lower income, lower benefits, and lower chance of promotion.

Establishments with higher profits will provide workers with higher income and better benefits.

Table 4.1

VARIABLES	(1) ln_inc_month_ave	(2) benefits	(3) promotion	(4) changejob
f_union	0.0549***	0.104***	0.0435***	-0.00532
	(0.0148)	(0.0163)	(0.0157)	(0.0147)
edu_year	0.0255***	0.00646**	-0.00331	-0.00150
	(0.00294)	(0.00325)	(0.00311)	(0.00291)
age	0.0351***	0.0111**	0.00800	-0.0124**
	(0.00506)	(0.00552)	(0.00533)	(0.00499)
age2	-0.000476***	- 0.000157**	- 0.000163**	0.000102
	(6.49e-05)	(7.12e-05)	(6.88e-05)	(6.44e-05)
seniority	0.000827	0.00557***	0.00142	- 0.00737***
	(0.00140)	(0.00156)	(0.00151)	(0.00141)
female	-0.163***	-0.0288*	-0.0266*	-0.0435***
	(0.0141)	(0.0156)	(0.0150)	(0.0141)
partymember	0.00624	0.0132	0.0321	0.0160
	(0.0213)	(0.0237)	(0.0227)	(0.0212)
hukou_rural	-0.0276*	0.00230	0.0636***	0.0307**
	(0.0156)	(0.0171)	(0.0165)	(0.0155)
2.occupation	-0.0746***	-0.0168	-0.0513*	0.0104
	(0.0246)	(0.0275)	(0.0264)	(0.0247)
3.occupation	-0.192***	0.00209	-0.0626**	0.0467*
	(0.0267)	(0.0294)	(0.0284)	(0.0265)
4.occupation	-0.207***	-0.00612	-0.0945***	0.0249
	(0.0294)	(0.0328)	(0.0317)	(0.0296)
5.occupation	-0.314***	-0.0756***	-0.174***	-0.0183
	(0.0193)	(0.0214)	(0.0207)	(0.0194)
6.occupation	-0.377***	-0.0659	-0.103	0.153**
	(0.0789)	(0.0821)	(0.0781)	(0.0731)
2.ownership	-0.0878***	-0.0322	-0.00855	-0.0405
	(0.0270)	(0.0301)	(0.0291)	(0.0272)
3.ownership	-0.00560	-0.0535**	0.0724***	-0.0196
	(0.0209)	(0.0234)	(0.0226)	(0.0211)
4.ownership	0.234***	0.119**	0.266***	-0.0340

	(0.0467)	(0.0498)	(0.0481)	(0.0450)
5.ownership	0.329***	-0.210***	0.0896*	0.0419
	(0.0457)	(0.0509)	(0.0492)	(0.0460)
firm_age	-0.00198***	-0.00137**	-0.00295***	-0.000696
	(0.000613)	(0.000684)	(0.000661)	(0.000617)
ln_profit_employee	0.0547***	0.0122**	0.00408	0.00247
	(0.00435)	(0.00481)	(0.00464)	(0.00434)
Constant	7.130***	0.0534	0.298**	0.617***
	(0.110)	(0.120)	(0.116)	(0.108)
Observations	3,580	3,762	3,774	3,777
R-squared	0.269	0.047	0.064	0.052
R-squared by hand	0.269	0.0465	0.0642	0.0518
Log Lik	-1765	-2317	-2196	-1947

Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1

Although we find positive effects of official union existence on workers outcomes, we can't conclude all unions are effective in Chinese firms. The average positive effects of union existence might only captures that some unions play positive roles.

The next question is whether we can distinguish real unions from paper unions in Chinese establishments. Can workers' recognition of union existence reflect unions' strength?

If we control both workers' recognition about union existence and official union existence reported by employer, we find that, it is the workers' recognition of union existence or union strength that matters for wages, benefits and promotions, not official union's existence, table 4.2.

In table 4.3, we use the average recognition of union existence in an establishment to reflect the average recognition of union existence at establishment level and run similar regressions. The results are almost the same. Union strength reflected by workers recognition of union existence is positively related to workers income, benefits, while official union existence's effect become insignificant.

In table 4.4, we keep workers who come from unionized establishments, and run the same regressions. For those with official unions reported by employers, the average recognition of union existence by employers still have positive effects on wages, benefits, promotions and job changes.

Table 4.2

VARIABLES	(1) ln_inc_month_ave	(2) benefits	(3) promotion	(4) changejob
wf_union	0.0615***	0.159***	0.0471**	-0.0158
	(0.0187)	(0.0205)	(0.0199)	(0.0186)
f_union	0.0231	0.0253	0.0205	0.00229
	(0.0176)	(0.0191)	(0.0186)	(0.0174)

	(0.00435)	(0.00479)	(0.00465)	(0.00435)
Constant	7.128***	0.0771	0.302***	0.619***
	(0.110)	(0.120)	(0.116)	(0.109)
Observations	3,577	3,758	3,771	3,774
R-squared	0.272	0.062	0.065	0.052
Log Lik	-1758	-2283	-2191	-1945

Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1

Table 4.3

	(1)	(2)	(3)	(4)
VARIABLES	ln_inc_month_ave	benefits	promotion	changejob
wfa_f_union	0.0514*	0.165***	0.0287	-0.0249
	(0.0266)	(0.0294)	(0.0284)	(0.0265)
f_union	0.0281	0.0195	0.0288	0.00746
	(0.0202)	(0.0221)	(0.0214)	(0.0200)
Constant	7.127***	0.0481	0.297**	0.618***
	(0.110)	(0.120)	(0.116)	(0.108)
Observations	3,580	3,762	3,774	3,777
R-squared	0.270	0.055	0.064	0.052
Log Lik	-1763	-2301	-2196	-1946

Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1

Table 4.4

	(1)	(2)	(3)	(4)
VARIABLES	ln_inc_month_ave	benefits	promotion	changejob
wfa_f_union	0.0711**	0.174***	0.0331	-0.0548*
	(0.0310)	(0.0338)	(0.0312)	(0.0282)
Constant	7.076***	0.136	0.329*	0.512***
	(0.181)	(0.194)	(0.178)	(0.161)
Observations	1,907	1,980	1,987	1,990
R-squared	0.257	0.059	0.070	0.060
R-squared by hand	0.257	0.0587	0.0704	0.0600
Log Lik	-1047	-1295	-1146	-948

Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1

Previous significant effects of union strength on workers outcomes can result from endogeneity, which means that establishments with so called strong unions have unobservable characteristics that affect both official union existence and workers wage, benefits and promotions.

To solve the endogeneity caused by unobserved variables of establishment, we control the establishments fixed effects and run the same regressions as before. The

results show in table 4.5.

After controlling establishment fixed effects, we see that workers' recognition of union existence is still important for workers wage, benefits, which means workers' individual recognition of union existence do reflect union's real effects.

When we keep the samples to workers who come from unionized establishments, we also find that union recognition by workers have positive effects on workers monthly average wages, benefits and promotion.

The first explanation might be those who benefit from the union are more likely to know about union existence and are more likely to work hard and thus more likely to gains more.

The second explanation might be just endogeneity, which means that workers who are more able in work are also more aware of the union existence. At this moment, we can't distinguish which one or perhaps both one exist.

Table 4.5

VARIABLES	(1) ln_inc_month_ave	(2) benefits	(3) promotion	(4) changejob
wf_union	0.0531***	0.126***	0.0380	-0.00753
	(0.0193)	(0.0217)	(0.0237)	(0.0226)
Constant	7.280***	0.0638	0.0954	0.411***
	(0.0923)	(0.103)	(0.112)	(0.107)
Establishment fixed effects	yes	yes	yes	yes
Observations	4,081	4,298	4,316	4,316
R-squared	0.607	0.425	0.274	0.241
R-squared by hand	0.607	0.425	0.274	0.241
Log Lik	-859.5	-1567	-1973	-1752

Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1

Table 4.6

For observations with f_union=1

VARIABLES	(1) ln_inc_month_ave	(2) benefits	(3) promotion	(4) changejob
wf_union	0.0502**	0.150***	0.0475*	-0.0166
	(0.0223)	(0.0255)	(0.0264)	(0.0243)
Constant	7.348***	-0.00310	0.234	0.327**
	(0.141)	(0.161)	(0.166)	(0.153)
Establishment fixed effects	yes	yes	yes	yes
Observations	2,199	2,285	2,295	2,295
R-squared	0.600	0.417	0.277	0.236
R-squared by hand	0.600	0.417	0.277	0.236
Log Lik	-544.6	-944.5	-1041	-850.9

Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1

(2) Performance of establishment

Union existence might have both positive effects as well as negative effects on performance of establishments. At establishment level, ineffective union might have side effects, as union fees (it legally requires that 2% of payroll given as union fees to the ACFTU) will increase labor costs or reduce workers' wages or both, if union has no positive effects on employment relations. Effective union might decrease conflicts and friction between workers and managerial personnels, and reduces communication costs and might improve efficiency, and further improve its revenue and productivity. Whether unions will improve profits depends on the relative effects of growth effects and distributional effects between employer and employees.

In table 4.7, we regress log of revenue per employee, log of profit per employee, log of average wage, on official union existence, with ownership, log size, firm age, log asset per labor, new machine proportion as control variables, no significant effect of official union existence appears.

In table 4.8, we see that for establishments with official union reported by employers, those with high recognition of union existence by employees will have positive effects on revenue per employee, but have no significant effects on profits per employee, average wage, value added per employee(productivity).

Table 4.7:

VARIABLES	(1) ln_ revenue_employee	(2) ln_ profit_employee	(3) ln_ firmwage_ave	(4) ln_ valueadd_employee
f_union	0.0314	-0.226	0.0721	-0.0898
	(0.162)	(0.185)	(0.0707)	(0.308)
2.ownership	0.313	0.643*	-0.181	0.179
	(0.288)	(0.331)	(0.125)	(0.525)
3.ownership	0.301	0.228	-0.171*	-0.367
	(0.225)	(0.261)	(0.0992)	(0.425)
4.ownership	0.0293	-0.0605	-0.343*	-0.0980
	(0.441)	(0.531)	(0.194)	(1.041)
5.ownership	0.224	1.458**	0.278	1.197
	(0.496)	(0.581)	(0.222)	(0.823)
ln_size	0.0101	0.0271	1.01e-05	0.0361
	(0.0713)	(0.0814)	(0.0313)	(0.130)
firm_age	-7.94e-05	-0.00198	-0.00376	-0.0218*
	(0.00670)	(0.00812)	(0.00292)	(0.0130)
ln_asset_labor	0.299***	0.305***	0.0336**	0.440***
	(0.0368)	(0.0438)	(0.0162)	(0.0705)
newmachine	0.000825	0.00401	0.000369	0.00264
	(0.00264)	(0.00309)	(0.00115)	(0.00486)

Constant	2.235***	-0.120	1.411***	0.165
	(0.434)	(0.498)	(0.190)	(0.794)
Observations	371	343	345	273
R-squared	0.161	0.151	0.046	0.147
R-squared by hand	0.161	0.151	0.0458	0.147
Log Lik	-631.3	-618.3	-289.2	-592.8

Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1

Table 4.8

	(1)	(2)	(3)	(4)
	ln_	ln_	ln_	ln_
VARIABLES	revenue_employee	profit_employee	firmwage_ave	valueadd_employee
wfa_f_union	0.637***	0.291	0.0620	0.112
	(0.209)	(0.238)	(0.0934)	(0.404)
2.ownership	0.378	0.637*	-0.144	0.340
	(0.286)	(0.329)	(0.126)	(0.536)
3.ownership	0.403*	0.261	-0.130	-0.173
	(0.230)	(0.264)	(0.102)	(0.442)
4.ownership	0.170	-0.00633	-0.308	0.0465
	(0.437)	(0.523)	(0.194)	(1.039)
5.ownership	0.188	0.907	0.245	0.844
	(0.511)	(0.602)	(0.233)	(0.858)
ln_size	-0.0641	-0.0320	0.00960	0.0471
	(0.0707)	(0.0810)	(0.0312)	(0.130)
firm_age	-0.00148	-0.00448	-0.00370	-0.0247*
	(0.00656)	(0.00791)	(0.00290)	(0.0129)
ln_asset_labor	0.293***	0.320***	0.0310*	0.464***
	(0.0367)	(0.0438)	(0.0164)	(0.0719)
newmachine	0.00237	0.00591**	-2.55e-05	0.00231
	(0.00256)	(0.00300)	(0.00113)	(0.00476)
Constant	2.228***	-0.187	1.374***	-0.112
	(0.427)	(0.488)	(0.189)	(0.793)
Observations	368	340	342	270
R-squared	0.178	0.159	0.036	0.151
R-squared by hand	0.178	0.159	0.0356	0.151
Log Lik	-618.6	-605.4	-283.8	-584.1

Standard errors in parentheses,*** p<0.01, ** p<0.05, * p<0.1

V Do effective union promote better management-worker relations?

(1)Workers' level

How does union affect workers' outcomes: income, benefits, promotion and turnovers? One potential mechanism would be better management – worker relations, which means union existence/union strength will promote better management – worker relations, thus indirectly affect outcomes.

When we control the variables which indicates there are good relations between management and workers, the official union dummy and workers' recognition of union existence dummy becomes insignificant or the effect becomes smaller. So one of the mechanism through which union affect workers is through better management-worker relations.

Table 5.1: workers level regression with relations variables

	(1)	(2)	(3)	(4)
VARIABLES	ln_inc_month_ave	benefits	promotion	changejob
f_union	0.0272	0.0720	-0.00625	-0.0625
	(0.0570)	(0.0613)	(0.0544)	(0.0462)
relation_mw	0.0269	0.0621***	0.0236	-0.0812***
	(0.0184)	(0.0199)	(0.0177)	(0.0151)
Observations	1,217	1,241	1,247	1,250
R-squared	0.228	0.043	0.088	0.101
R-squared by hand	0.228	0.0426	0.0877	0.101
Log Lik	-733.4	-862.9	-727.2	-526.5

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5.2: workers level regression with relations variables

	(1)	(2)	(3)	(4)
				Change
VARIABLES	ln_inc_month_ave	benefits	promotion	job
wf_union	0.0716	0.241	0.163	0.115
	(0.180)	(0.176)	(0.156)	(0.132)
relation_mw	0.0325*	0.0572***	0.0231	-0.0825***
	(0.0187)	(0.0205)	(0.0182)	(0.0153)
Constant	7.023***	0.157	0.212	0.796***
	(0.317)	(0.331)	(0.292)	(0.247)
Observations	1,147	1,168	1,173	1,176

R-squared	0.232	0.044	0.085	0.096
R-squared by hand	0.232	0.0440	0.0853	0.0965
Log Lik	-669.8	-813	-678.8	-482.6

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5.3: workers level regression with relations variables

	(1)	(2)	(3)	(4)
VARIABLES	ln_inc_month_ave	benefits	promotion	changejob
wfa_f_union	0.0433	0.138***	-0.00310	-0.0798**
	(0.0376)	(0.0409)	(0.0374)	(0.0335)
awf_relation_mw	0.0181	0.0404*	-0.0132	-0.0477**
	(0.0224)	(0.0244)	(0.0224)	(0.0200)
Constant	6.998***	0.143	0.471**	0.734***
	(0.207)	(0.223)	(0.204)	(0.182)
Observations	1,748	1,815	1,822	1,825
R-squared	0.256	0.053	0.071	0.069
R-squared by hand	0.256	0.0534	0.0712	0.0693
Log Lik	-979.3	-1209	-1062	-861.1

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5.4: workers level regression with relations variables

	(1)	(2)	(3)	(4)
VARIABLES	ln_inc_month_ave	benefits	promotion	changejob
wf_union	0.387**	0.405***	0.0674	0.0463
	(0.154)	(0.154)	(0.144)	(0.129)
relation_mw	0.0270	0.0399**	0.0382**	-0.0724***
	(0.0167)	(0.0193)	(0.0182)	(0.0162)
Constant	6.916***	-0.333	0.110	0.557**
	(0.266)	(0.296)	(0.278)	(0.248)
Establishment fixed effects	yes	yes	yes	yes
Observations	1,350	1,381	1,388	1,388
R-squared	0.598	0.420	0.363	0.302
R-squared by hand	0.598	0.420	0.363	0.302
Log Lik	-364.3	-613.5	-547.4	-386.3

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

(2)establishment level

Table 5.5

VARIABLES	(1) ln_revenue_employee	(2) ln_profit_employee	(4) ln_firmwage_ave	(5) ln_valueadd_employee
f_union	0.0284	-0.222	0.0717	-0.0842
	(0.163)	(0.186)	(0.0711)	(0.310)
relation_mw_f	0.0194	-0.0283	0.00227	-0.0273
	(0.0953)	(0.108)	(0.0414)	(0.187)
2.ownership	0.306	0.654*	-0.182	0.188
	(0.291)	(0.334)	(0.126)	(0.529)
3.ownership	0.297	0.233	-0.172*	-0.363
	(0.227)	(0.263)	(0.0996)	(0.426)
4.ownership	0.0220	-0.0493	-0.344*	-0.0828
	(0.443)	(0.534)	(0.195)	(1.048)
5.ownership	0.223	1.462**	0.278	1.197
	(0.496)	(0.582)	(0.222)	(0.825)
ln_size	0.0106	0.0265	8.23e-05	0.0353
	(0.0714)	(0.0816)	(0.0314)	(0.131)
firm_age	1.64e-05	-0.00215	-0.00376	-0.0219*
	(0.00672)	(0.00815)	(0.00293)	(0.0131)
ln_asset_labor	0.299***	0.305***	0.0336**	0.439***
	(0.0369)	(0.0439)	(0.0162)	(0.0707)
newmachine	0.000793	0.00404	0.000364	0.00264
	(0.00265)	(0.00309)	(0.00115)	(0.00487)
Constant	2.161***	-0.0111	1.402***	0.273
	(0.567)	(0.649)	(0.248)	(1.084)
Observations	371	343	345	273
R-squared	0.162	0.152	0.046	0.147
R-squared by hand	0.162	0.152	0.0458	0.147
Log Lik	-631.3	-618.2	-289.2	-592.8

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5.6:

VARIABLES	(1) ln_revenue_employee	(2) ln_profit_employee	(4) ln_firmwage_ave	(5) ln_valueadd_employee
wfa_f_union	0.637***	0.297	0.0610	0.115
	(0.211)	(0.240)	(0.0938)	(0.406)
relation_mw_f	-0.00168	-0.0248	0.00542	-0.0154
	(0.0937)	(0.106)	(0.0411)	(0.186)
2.ownership	0.379	0.648*	-0.146	0.345
	(0.289)	(0.332)	(0.127)	(0.541)
3.ownership	0.403*	0.267	-0.131	-0.170

	(0.231)	(0.266)	(0.103)	(0.444)
4.ownership	0.170	0.00411	-0.310	0.0554
	(0.439)	(0.525)	(0.195)	(1.047)
5.ownership	0.189	0.915	0.244	0.846
	(0.512)	(0.604)	(0.234)	(0.859)
ln_size	-0.0642	-0.0327	0.00977	0.0467
	(0.0709)	(0.0812)	(0.0313)	(0.130)
firm_age	-0.00149	-0.00462	-0.00368	-0.0248*
	(0.00658)	(0.00795)	(0.00291)	(0.0130)
ln_asset_labor	0.293***	0.319***	0.0311*	0.464***
	(0.0369)	(0.0439)	(0.0164)	(0.0721)
newmachine	0.00237	0.00594**	-3.41e-05	0.00230
	(0.00257)	(0.00301)	(0.00113)	(0.00477)
Constant	2.234***	-0.0909	1.353***	-0.0507
	(0.559)	(0.638)	(0.247)	(1.083)
Observations	368	340	342	270
R-squared	0.178	0.160	0.036	0.151
R-squared by hand	0.178	0.160	0.0357	0.151
Log Lik	-618.6	-605.4	-283.8	-584.1

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

VI conclusions

There has long been controversial arguments as to union's effect in China as union is not organized by labors, thus some think the official union is controlled by government thus have no real effects. However, some think even though Chinese unions are not completely independent there are still some space unions can pay their roles, and some scholars do get some findings that unions in China have some real effects.

With only official union existence, it is hard to distinguish the paper unions from real unions. This article uses workers recognition of union existence which is different from what management report as additional information, and find that workers recognition of union existence can reflect union effectiveness, thus can be an indicator of union strength. Empirical findings are supportive of this argument.

Also we find that, union participation into workplace activities are positively related to workers recognition of union existence.

As to unions' effect, we find there is large redistributive effects of unions on workers outcomes, but the insignificant effect of unions' effect on the performance of establishments except on revenues.

One potential mechanism unions become effective in enhance workers' welfare is through better management-worker relations.

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