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CCP committees, worker benefits and firm performance: empirical evidence from Chinese private firms

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Abstract

Purpose – With an increasing number of Chinese private firms establishing primary level CPC Party committees, it is important to study the role of Party organizations in these firms. Using a nationwide survey of private firms in 2006, we empirically study the firm-level CCP committee's effect on workers' benefits and firm performance.

Design/methodology/approach – To overcome the potential endogeneity, we employ the regression discontinuity approach by utilizing the following rule from the Constitution of the CCP: Primary party committees should be established in any basic work unit with more than 3 full party members.

Findings – Our empirical results show that party committees in private firms have positive and statistically significant effects on many types of workers' benefits, including pension, unemployment insurance and workplace safety.

Originality/value – This paper highlights CCP committees as an important alternative mechanism in coordinating labor relationships in China when formal labor protecting institutions are weak.

Keywords CCP committee, Worker's benefits, Regression discontinuity

Paper type Research paper

1. Introduction

Significant progress has been made recently forming Chinese Communist Party (CCP) committees in domestic private firms. According to the Eighth Chinese Private Enterprise Survey, 30.6% of domestic private firms have established Party committees, general Party branches, Party branches and other grassroot-level Party organizations. The number of Party committees established in private firms is increasing while Party-related work is simultaneously being gradually carried out. As the legal system for protecting workers in private firms is still imperfect, the degree of unionization is relatively low (Ge, 2007) and labor-management disputes remain prominent (Xia, 2004). Party committees in private firms are expected to protect the legitimate rights and interests of workers and coordinate all parties' interests as per the law, however, in practice, Party committees in private firms are often constrained by factors such as firm ownership, the way a firm operates and its ideology. However, the extent to which Party committees have performed functions of worker protection has raised concerns (Hu, 2002; Zhu, 2009). As private firms play an increasingly important role in providing employment opportunities and promoting economic growth, it is crucial to explore whether Party committees in private firms can effectively perform their

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duties safeguarding worker's interests and coordinating labor-management relations. This study uses detailed private enterprise survey data to empirically examine whether Party committees in private firms can effectively improve employee benefits.

As CCP organizations play a special role in the corporate governance structure in China, most existing studies focus on the impact of CCP organizations on corporate governance structure and performance from the perspective of corporate governance. Qian (1995) noted that staff appointment power of Party organizations in state-owned enterprises could be a balancing force to restrict the power of management to some extent, but this could not generate effective governance structure. Chang and Wong (2004) studied the relationship between the corporate performance and the relative decision-making power of Party organizations in listed companies of China and found that the decision-making power of the Party organizations on major shareholders was positively correlated with corporate performance and that of management was negatively correlated. By using data of state-owned listed companies that disclosed the Party committee information, Ma *et al.* (2012) studied the impact of the leadership system "two-way access , cross appointment [1]" on corporate governance and directorate efficiency. They found that "two-way access" has an inverted "U-shaped" relationship with the level of corporate governance. Wei (2013) found that listed companies with a strong presence of Party organizations in China tend to have lower productivity, which was particularly severe for state-owned enterprises and firms in regions with high unemployment rates. At the same time, although the strong presence of Party organizations in private enterprises did not affect corporate performance, the senior management tended to have weaker professional backgrounds but stronger political connections. Opper *et al.* (2002) and Wong *et al.* (2004) studied the factors affecting the decision-making power of Party organizations on listed companies in China and concluded that the decision-making power was mostly constrained by large non-state-owned shareholders or major institutional investors.

Party organizations play an important role in leading mass organizations, such as labor unions and the Communist Youth League and protecting the legitimate rights and interests of workers but these roles have not been fully explored in the literature. Unlike existing studies, this paper discusses whether Party organizations in private enterprises can effectively protect the interests of workers and improve their benefits. A challenge faced by the study is the endogeneity of Party organizations. Since the establishment of Party organizations and the benefits of workers in enterprises may be related to factors, such as corporation size and performance, the identification of the causal relationship between Party organizations and worker's benefits can be hindered. To eliminate possible endogeneity and obtain reliable parameter estimates, this paper, based on the number of CCP members in a private enterprise required by the Constitution of the Communist Party of China (CCP Constitution) to establish grassroot Party organization, used the regression discontinuity approach to estimate how Party organizations affect worker's benefits and firm performance. The results show that Party organizations in private enterprises help improve the benefits of workers significantly, which offers empirical evidence for the argument that Party organizations in private enterprises fulfill their duties to safeguard the interests of workers and play an important role in coordinating labor-capital relations.

Compared with the existing findings, this study makes possible contributions in three ways. First, this paper examines the influence of Party organizations in private enterprises on the benefits of Chinese workers. Most previous studies briefly delved into the Party organizations in state-owned enterprises, with few focused on the role of Party organizations in private enterprises, especially the protection of worker interests. Second, the paper adopts the regression discontinuity approach to deal with endogeneity and obtain accurate parameter estimates, which provides reliable references for the impact of Party organizations in the enterprises. Third, the findings of this study highlight the role of Party organizations in

coordinating labor-capital relations. Previous studies on worker's benefits and labor-capital relations in China mostly focus on the role of labor unions (Metcalf and Li, 2006; Ge, 2007; Lu *et al.*, 2010; Yao and Zhong, 2013), which, in China's context, are under the leadership of Party organizations in enterprises. Indeed, Dong *et al.* (2016) present evidence that Party branches and unionization play complementary roles in promoting the coverage of social insurance in private firms. We contribute to this strand of literature by showing that Party organizations can affect worker's benefits through other channels even when the effect of labor unions is controlled. The findings in this paper not only enrich the research on labor unions, but also provide a new perspective and the evidence to explore the labor-capital coordination mechanism in China.

The remainder of the paper is organized as follows: the first section gives a brief introduction to the evolution and roles of Party organizations in state-owned enterprises and private enterprises; the second section discusses the research methods used in the paper, including regression discontinuity design and model specification; the third section introduces the data and the definitions of variables; the fourth part provides the estimation results; the fifth section checks the validity of the estimation methods; and the final section is the conclusion.

2. Institutional background

The origin of Party organizations in enterprises began in the early days after the founding of the Communist Party of China (CCP). At the Fourth National Congress of the CCP in 1925, it was stipulated that "the basic organizations of the Party should be the branch Party organizations in enterprises and governmental departments" and that "a Party branch can be established as long as there are three Party members". After the founding of the People's Republic of China, the CCP played a significantly leading role in state-owned enterprises because of its core leadership in China and state-owned enterprises are owned by the public. Despite rounds of reforms and leadership adjustments in state-owned enterprises, the Party-government's co-leading structure and core leadership of Party organizations in state-owned enterprises remained unchanged (Ma *et al.*, 2012).

As the private enterprises in China played an increasingly important role in the national economy, the establishment of Party organizations in private enterprises was included in the agenda. According to Article 19 of the Company Law of the People's Republic of China: "The CCP Constitution stipulates that the Party organization should be established in an enterprise to conduct Party activities, for which the enterprise shall provide necessary support." This lays the legal foundation for the establishment of Party organizations in private enterprises. To facilitate Party building in non-public economic organizations, the Notice on Enhancing Party Building in Non-public Economic Organizations (Trial) was issued by the Organization Department of the CCP Central Committee in 2000. The Notice elaborated on the principle of Party organization establishment in non-public sectors, stipulating that all non-public economic organizations with three or more Party members should establish primary-level Party organizations. If there are three to 50 Party members in the organization, a Party branch shall be established. If the number of Party members exceeds or is between 50 and 100, the general branch committee and primary-level Party committee should be established. As required by the CCP Constitution approved at the 16th National Congress of the CCP: "Party organizations should be established in basic units including enterprises, villages, governmental departments, schools, research institutes, sub-districts, social organizations and companies of People's Army of Liberation as long as the organizations have three or more Party members."

However, as the private enterprises are non-public properties and profits-driven, the role of Party organizations in private enterprises is quite different from that in state-owned enterprises. According to the CCP Constitution, the functions of the primary-level

Party organizations in non-public economic organizations are to "implement the Party's policies, guide and supervise enterprises to obey national laws and regulations, lead such mass organizations as labor unions and the Communist Youth League, unite workers, protect the legal rights and interests of all parties and promote the sound development of enterprises". As labor protection was insufficient in private enterprises in China, the labor unions only played a limited role (Ge, 2007) and labor disputes occurred frequently (Xia, 2004; Yao, 2005). Therefore, the Party organizations in private enterprises play a significant role in the coordination of labor-capital relations and protection of worker's interests [2].

In theory, Party organizations coordinate labor-capital relations and protect the interests of workers in several ways. The first is to strengthen the role of labor unions in private firms. Due to the underdevelopment of market-supporting institutions and strong government control over mass organizations, labor unions in China play a limited role in labor protection as they are not allowed to organize strikes or collective bargaining as their western counterparts would (Metcalf and Li, 2006; Ge, 2007; Lu *et al.*, 2010). Instead, firm-level labor unions in China are under the concurrent leadership of local Party organizations and higher-level unions. China's Constitution, trade union laws and trade union articles of association clearly stipulate that Chinese trade unions consciously accept the leadership of the Party. Grassroots Party organizations regularly listen to work reports of trade unions and help solve problems encountered in daily operations. Local Party organization also plays an important role in the nomination, appointment and removal of union leaders through its personal control. In addition, local Party organizations can help labor unions to secure resources from the government, improve the working conditions of union members and provide necessary material guarantees for unions. Dong *et al.* (2016) found that the presence of Party committees in Chinese private firms can enhance the role of labor unions in labor protection. As shown in Table A1 in the appendix, private firms with Party organizations are also more likely to establish labor unions.

Second, Party organization in firms can also affect worker's benefits though personnel control and participation in daily management. According to the CCP Constitution (revised in 2002) and the regulations issued by the Organization Department of the CCP Central Committee in 2000, Party organizations have an important say in the nomination, appointment and removal of important personnel, such as human resources, in firms [3]. Party secretaries participate in or attend important meetings on corporate management where they communicate with corporate management to affect the decision-making process of enterprises; in addition, the Party organizations in firms are required by the CCP Constitution to promote and implement the policies, principles and resolutions of the corporate Party organizations and higher Party organizations to guide and supervise the operations of enterprises, thus protecting the legitimate rights and interests of workers.

3. Estimation strategy

This section discusses the methods used in this paper to estimate the impact of Party organizations. If it is random whether an enterprise establishes a Party organization or not, then unbiased estimates can be obtained with the ordinary least squares (OLS). But, as discussed in the previous section, the establishment of a Party organization is not random. It largely depends on the number of Party members in the enterprise and. it is safe to conclude that enterprises with more Party members are often larger in size. According to many studies, the size of enterprises is positively correlated with worker's wages and other benefits (Even and Macpherson, 1994; Zábojník and Bernhardt, 2001). Since the size of enterprises and other unobservable factors may influence the establishment of Party organizations and worker's benefits, it is possible that the OLS cannot generate consistent estimates on the impact of Party organizations.

Based on the number of Party members for the establishment of Party organizations in enterprises required by the CCP Constitution, the regression discontinuity estimation method was used to obtain consistent estimates on the impact of Party organizations [4]. According to the CCP Constitution and related documents, when the number of Party members in an enterprise is three or more, a Party organization should be established [5]. Therefore, when the number of Party members in an enterprise reaches three, the probability of an enterprise establishing a Party organization is expected to increase significantly [6] as verified in Figure 1. When the number of Party members reaches the cutoff point of three, the probability rises sharply and, among enterprises with three or more Party members, most have established Party organizations according to the regulations. The relationship between the average benefits of employees and the number of Party members demonstrates a similar pattern. Figure 2 shows a significant increase in the pension insurance per worker paid by an enterprise when the number of Party members in the enterprise exceeds three [7]. These patterns justify the applicability of fuzzy regression discontinuity in the estimation of the impact of Party organizations on worker's benefits (Imbens and Lemieux, 2008).

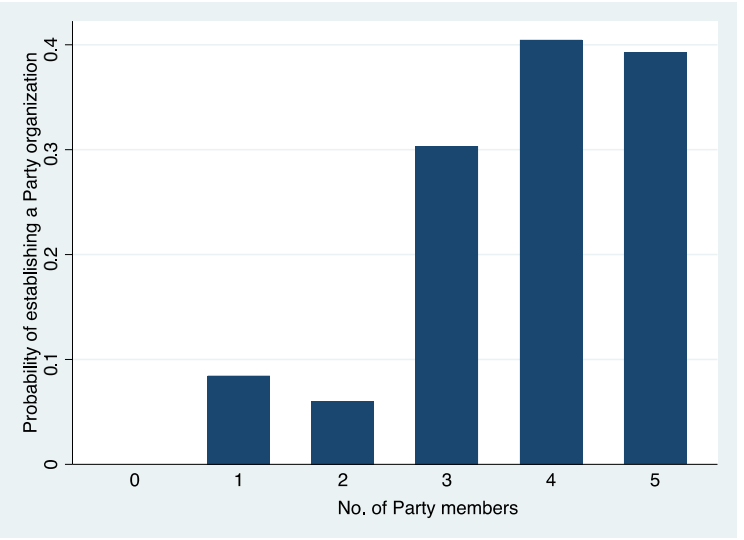
Fuzzy regression discontinuity is chosen based on the following logic: as the provision of the CCP Constitution (whether there are three or more Party members) is an exogenous shock for enterprises, the provision can be used as an instrumental variable to estimate Party organization's impact on the benefits of workers. However, as the number of Party members is directly correlated to the benefits of workers, it cannot be used as a valid instrumental variable. Ideally, we can restrict the sample around the enterprises that should establish Party organizations according to the Constitution and use enterprises with three or more Party members as the experimental group and those with less than three Party members as the control group. The instrumental variable can then be used to estimate the impact of Party organizations on workers' benefits with the provision of CCP Constitution as an exogenous factor (Lee and Lemieux, 2010), when the impact of the number of Party members is controlled in small intervals.

When fuzzy regression discontinuity is employed, a common approach is to use the two-stage least squares to estimate related parameters under the framework of instrumental variables (Angrist and Lavy, 1999). In this paper, the two-stage estimation method proposed by Van der Klaauw (2002) was used and whether or not the enterprise had three or more Party members was taken as the instrumental variable [8]. To be specific, we used x_i to denote the number of Party members in enterprise I, P_i to indicate whether enterprise i has established a Party organization or not (1 for yes and 0 for no) and Y_i to represent the dependent variable. The model specification of the two-stage estimation is expressed as follows:

$$P_i = f(x_i) + \gamma \cdot 1(x_i \geq \overline{x}) + u_i \tag{1}$$

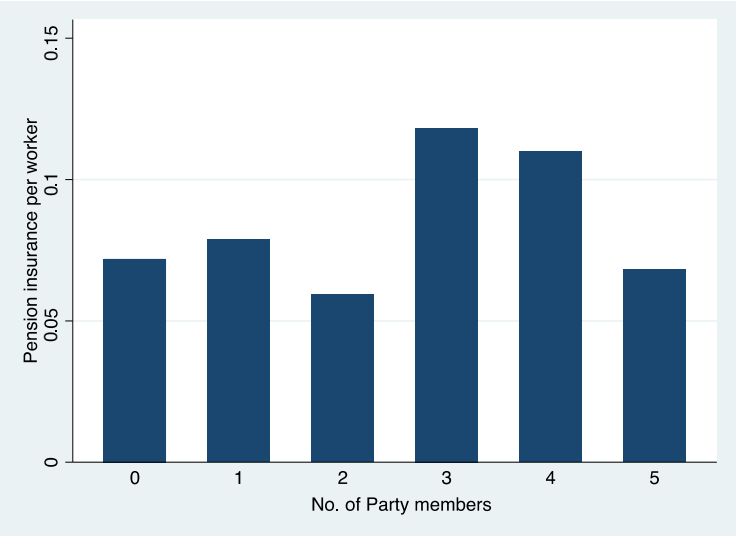
$$Y_i = \alpha + \beta \cdot P_i + k(x_i) + v_i \tag{2}$$

Where $1(x_i \geq \overline{x})$ is an indicator function (which takes value one when the number of Party members reaches or exceeds the cutoff point three and zero otherwise). $f(x_i)$ and $k(x_i)$ are two control functions of x_i. In this paper, $f(x_i)$ and $k(x_i)$ were set as low-order polynomials, with different slopes on both sides of the discontinuity point. Parameter γ captures the discontinuous changes in the probability of establishing a Party organization at the cutoff point, while parameter β measures the difference of the outcome variable Y_i between enterprises on both sides of the cutoff point. Due to a lack of information about how each enterprise implements the provision of the CCP Constitution, the implementation intensity is assumed as the same across all enterprises and the impact of Party organizations on workers' benefits is deemed as homogeneous [9]. Therefore, if the direct impact of the number of Party members can be controlled by $f(x_i)$ and $k(x_i)$, then the impact of Party organizations on worker's benefits can be estimated.



Note(s): The horizontal axis shows the number of Party members in a firm, while the vertical axis represents the probability of an enterprise to establish a Party organization

Figure 1.
Party organizations and number of Party members



Note(s): The horizontal axis shows the number of Party members in a firm, while the vertical axis represents the probability of an enterprise to establish a Party organization

Figure 2.
Pension insurance per worker paid by an enterprise and number of Party members

The key identification assumption is that, if there is no provision on the number of Party members to the establishment of Party organizations, the outcome variables will be continuous around the cutoff point. In other words, the benefits of workers should be similar when no or all enterprises near the discontinuity point establish Party organizations. Homogeneity hypothesis is also adopted in the paper that the Party organizations play the same role among enterprises. These hypotheses are expressed as below (Hahn *et al.*, 2001; Van der Klaauw, 2002):

H1. The conditional mean function $E(v|x)$ is continuous at $\overline{x}$.

H2. When x_i is given, P_i and β are independent from each other near the discontinuity point.

In the regression analysis, in addition to the key explanatory variables (the number of Party members and whether there is a Party organization), enterprise and entrepreneur characteristics were also controlled. In theory, if the control variable Z is continuous at the critical point under the condition of x_i, then adding Z will have no impact on the estimated treatment effect but, in practice, it cannot be guaranteed that x_i is close enough to the critical value. Therefore, adding control variables to an econometric model can eliminate the bias. Moreover, if Z is related to the explanatory variables, then the addition of the control variables improves the accuracy of the estimation as well.

We test the validity of the proposed regression discontinuity method in several ways. First, different window widths will be estimated to test the sensitivity of the estimation results. Second, we estimate the parameters under different functional form of $f(x_i)$ and $k(x_i)$ to test the robustness of the estimates. Finally, we will test whether the control variables, except for the number of Party members that are independent of Party organizations, have discontinuities near the critical point. No such discontinuities will be found near the critical point if the regression discontinuity method is valid. In addition, we will discuss a potential threat to identification, i.e. the firm's ability to manipulate the number of Party member employees in section 6.

4. Data and variables

The data used in this paper is from the 2006 Seventh Nationalwide Survey of Private Enterprises. The survey was jointly conducted in the first half of 2006 by the Research Program on Chinese Private Enterprises by United Front Work Department of the CCP Central Committee, the All-China Federation of Industry and Commerce, the State Administration for Industry and Commerce and the China Society for the Study of the Private-Sector Economy [10]. The All-China Federation of Industry and Commerce conducted multi-stage sampling at a proportion of 0.55% in 31 provinces, municipalities and autonomous regions across China. In counties and (county-level) cities sampled based on socioeconomic development, a total of 2,360 questionnaires were randomly distributed among enterprises which were selected according to the rural-urban distribution and industry presence. A total of 2,301 questionnaires were returned, with a return rate of 97.5% [11]. The State Administration for Industry and Commerce surveyed the frequently investigated enterprises in 15 provinces, municipalities and autonomous regions. A total of 1,600 questionnaires were distributed, with 1,536 returned (a return rate of 96.0%). Therefore, the data used in this paper cover private enterprises of different sizes and industries in 31 provinces, municipalities and autonomous regions across the country, which well reflects the overall development of Chinese private enterprises.

The questionnaire not only collects the personal information of business owners such as age, gender, education, work experience, family background and political participation, but

also business information including firm age, governance structure, capital composition, business operation and labor-capital relations. In terms of Party organizations in private enterprises, the questionnaire asks about the existence of Party organizations and the number of Party members in enterprises. This data provides rich information to study the impact of Party organizations on enterprises. The 2006 report shows that roughly 30% of private enterprises established Party organizations, close to the 30.6% published in the 2008 report and the proportion of Party members of employees was 5.67%. According to the report from the government in 2005, approximately 5.41% of the Chinese people are Party members, which is close to the number (5.67%) in this study [12] which means the number of Party members in the survey is reasonably accurate. Figure 3 shows that there exist substantial variations across different firms in the number of Party members, which provides a good test ground for studying the impact of Party organizations on worker's fringe benefits.

The control variables in the regression analysis include logarithm of enterprise assets, the age of the enterprise and the logarithm of the number of employees. The entrepreneur characteristics include gender, years of education and whether the entrepreneur ever served as the head of any Party or governmental departments, as well as state-owned and collective enterprises, whether he or she is a Party member, a deputy of the national or local People's Congress (PC) or a member of the Chinese People's Political Consultative Conference (CPPCC). As Party organizations can affect worker's fringe benefits through other channels other than a labor union, we control for whether the enterprise has established a labor union in our regression model. In the regression analysis, the fixed effects of industry and province are controlled. Table 1 lists the descriptive statistics of the variables used in this paper.

According to the research by scholars such as Freeman (1981), when there is no labor-capital coordination mechanism such as labor unions, entry into and exit from a firm is the main mechanism regulating worker's benefits which mainly affect young "marginal" workers with high mobility. In enterprises with labor unions, the preferences of older workers with lower mobility are valued by the unions and enterprises' expenditure on fringe benefits is increased through collective bargaining. According to the CCP Constitution and related documents, Party organizations in private enterprises should play a role in protecting worker's interests, especially those from disadvantaged groups. Party organizations have important impacts on the fringe benefits of workers other than wages. As wages are often fixed by labor contracts, this paper focuses on two fringe benefits indicators, i.e. workplace safety and worker insurance [13]. In regression analysis, both the coverage of the benefits indicators and the average expenditure paid by the company for each worker were used. The coverage indicators include medical insurance coverage, pension insurance coverage and unemployment insurance coverage among all the workers. The per capita indicators include per capita expenditure for workplace safety (10,000 yuan), per capita medical insurance expenditure (10,000 yuan), other medical expenses per capita (10,000 yuan), pension insurance expenditure per capita (10,000 yuan) and unemployment insurance expenditure per capita (10,000 yuan) [14].

Table 2 compares the differences in these indicators between companies with and without Party organizations. On average, companies with Party organizations have higher coverage in medical insurance, pension insurance and unemployment insurance than companies without Party organizations. The differences are statistically significant. Table 3 shows the OLS estimation results, which suggest that Party organizations have significantly positive impact on the coverage of and per capita expenditure on medical insurance, pension insurance and unemployment insurance. Moreover, the benefits indicators show that enterprises with labor unions offer much better benefits than those without labor unions. The result is consistent with the existing findings on the labor unions in Chinese enterprises (Lu *et al.*, 2010; Yao and Zhong, 2013). Other variables, such as a firm's age and the education background of the business owner, are also positively correlated with the benefits of workers.

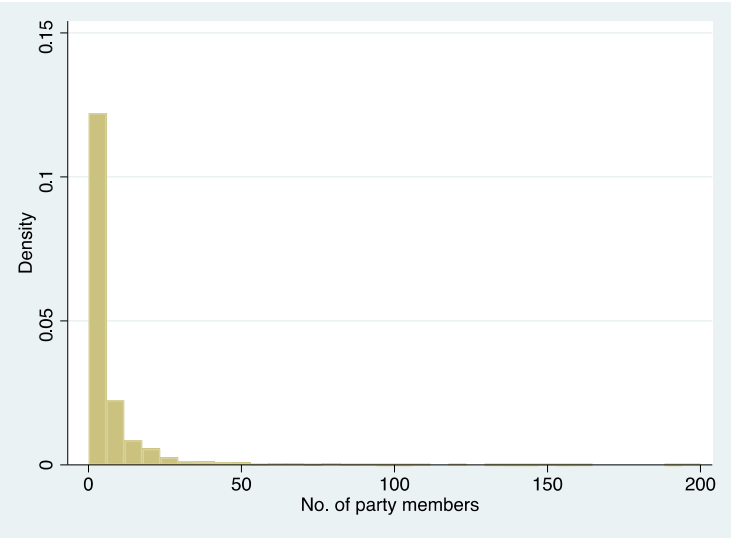


Figure 3.
The distribution of number of Party members

Note(s): The horizontal axis shows the number of Party members in a firm, while the vertical axis represents the probability of an enterprise to establish a Party organization

Variable	Observation	Mean	Standard deviation	Minimum	Maximum
Party organization (0, 1)	3,022	0.3	0.46	0	1
Number of Party members	2,793	6.96	16.02	0	110
Labor union (0, 1)	3,240	0.53	0.5	0	1
Log assets (10,000 RMB)	2,503	5.49	1.78	0	11.85
Enterprise age (year)	3,690	7.06	4.46	1	21
Log employees	3,574	3.85	1.57	0	9.35
Leverage ratio	1890	0.17	0.26	0	1
Female (0, 1)	3,828	0.14	0.35	0	1
Education (year)	3,815	13.64	2.89	6	19
Former cadre (0, 1)	3,841	0.18	0.38	0	1
Party member (0, 1)	3,446	0.4	0.49	0	1
Former SOE head (0, 1)	2,400	0.35	0.48	0	1
PC or CPPCC (0, 1)	3,841	0.38	0.49	0	1
Labor productivity	3,033	2.52	1.43	−4.09	6.1
Return on sales	2,850	0.08	0.17	−1	0.99
Return on equity	2,190	0.3	0.55	−0.2	3.33

Table 1.
Descriptive statistics

Source(s): The data is organized by authors based on National Surveys of Privately Owned Enterprises in China

5. Main estimation results

5.1 First stage estimation results

The two-stage estimation method proposed by Van der Klaauw (2002) and Chen and Van der Klaauw (2008) was adopted to implement the regression discontinuity method. In the first stage, $f(x_i)$ was set as a continuous linear function of x_i, allowing different slopes of x_i on both

Variable	Total sample	With party organization	Without party organization	Difference
Medical insurance (coverage)	0.17	0.24	0.15	0.09***
Pension insurance (coverage)	0.3	0.4	0.25	0.15***
Unemployment insurance (coverage)	0.18	0.28	0.15	0.13***
Workplace safety (per capita expenditure, 10,000RMB)	0.1	0.11	0.09	0.02***
Medical insurance (per capita expenditure, 10,000RMB)	0.05	0.05	0.05	0
Other medical expenses (per capita expenditure, 10,000RMB)	0.02	0.02	0.02	0
Pension insurance (per capita expenditure, 10,000RMB)	0.08	0.13	0.07	0.06***
Unemployment insurance (per capita expenditure, 10,000RMB)	0.02	0.02	0.02	0

Note(s): Significance levels 0.1, 0.05 and 0.01 are noted by *, ** and ***, respectively
Source(s): The data is organized by authors based on National Surveys of Privately Owned Enterprises in China

Table 2.
T test

sides of the cutoff point. In the second stage, $k(x_i)$ was set as a low-order polynomial. Table 4 shows the estimation results of the first stage under different model specifications. In the first column, in addition to the key explanatory variable (there are three or more Party members), only the fixed effects of industry and province were controlled. The results suggest that enterprises with three or more Party members are 54.2% more likely to establish Party organizations than those with less than three Party members.

In the second and third columns, the number of Party members and the interaction terms between the number of Party members and whether there are three or more members were added. The results in the dummy variable show that whether there are three or more Party members in an enterprise remains significant, but the magnitude is slightly reduced. The estimation results also suggest that the probability of an enterprise to establish a Party organization is greater when it has more Party members, but there is no monotonous linear relationship between the number of Party members and the probability of establishing a Party organization. The closer the number of Party members is to the critical value stipulated by the CCP Constitution, the greater role it plays in establishing Party organizations. In the fourth column, the enterprise and entrepreneur characteristics were controlled and the estimation results of the key explanatory variables remain stable and so, to improve the estimation, the model specification of the fourth column was used in first stage estimation.

5.2 Second stage estimation results: party organization and workers' benefits

Table 5 reports the second stage estimation results. According to Panel A, Party organizations have significantly positive impact on the coverage and the per capita expenditure of worker's benefits. The coverage of pension insurance and unemployment insurance of enterprises with Party organizations is significantly higher than that of enterprises without Party organizations by 13.5% and 16.6%, respectively. The per capita expenses on workplace safety and unemployment insurance paid by enterprises with Party organizations are 1.2% (10.8 yuan) and 1.8% (3.6 yuan) higher than those paid by enterprises without Party organizations [15]. Party organizations have a greater impact on worker's benefits coverage than on per capita expenditure. This is probably because, when coordinating labor-capital relations, Party organizations focus more on including more workers in the coverage of basic social security programs, such as pension insurance and

Table 3.
OLS estimation results

Variable	Coverage				Per capita expenditure			
	Medical insurance	Pension insurance	Unemployment insurance	Workplace safety	Medical insurance	Other medical expenses	Pension insurance	Unemployment insurance
Party organization	0.0739** (0.0279)	0.159*** (0.0218)	0.128*** (0.0264)	0.113 (0.198)	0.735*** (0.253)	0.415 (0.283)	1.074*** (0.289)	1.072*** (0.174)
Labor union	0.0629*** (0.0181)	0.0836*** (0.0209)	0.0817*** (0.0169)	0.703** (0.291)	0.692*** (0.161)	0.319 (0.252)	1.164*** (0.185)	0.728*** (0.152)
Log assets	0.00827 (0.00783)	0.0116 (0.00893)	0.0107 (0.00722)	0.153* (0.0763)	0.0166 (0.0648)	−0.103* (0.0514)	0.0536 (0.0581)	−0.0585 (0.0443)
Age of enterprise	0.00277 (0.00169)	0.00492** (0.00239)	0.00250 (0.00260)	−0.00396 (0.0241)	0.0611*** (0.0198)	0.0519** (0.0237)	0.0913*** (0.0152)	0.0422* (0.0247)
Log employee	−0.0134 (0.00923)	−0.0455*** (0.0140)	−0.0297** (0.0114)	0.190* (0.109)	−0.113 (0.105)	0.185* (0.0918)	−0.115 (0.0774)	−0.0483 (0.0716)
Female	−0.0612*** (0.0206)	0.0123 (0.0329)	−0.0219 (0.0244)	−0.612* (0.308)	−0.331 (0.288)	−0.372 (0.297)	−0.00478 (0.247)	−0.272 (0.222)
Years of education	0.0123*** (0.00298)	0.0145*** (0.00325)	0.0134*** (0.00421)	0.000776 (0.0582)	0.131*** (0.0284)	−0.0241 (0.0388)	0.142*** (0.0223)	0.102*** (0.0368)
Former cadre	−0.0108 (0.0317)	−0.0206 (0.0403)	−0.0233 (0.0416)	0.298 (0.400)	0.261 (0.194)	0.290 (0.223)	0.0776 (0.142)	0.169 (0.172)
CCP member	−0.0113 (0.0205)	0.0206 (0.0310)	0.0128 (0.0210)	−0.538** (0.197)	−0.000853 (0.281)	−0.329* (0.168)	0.229 (0.282)	0.131 (0.147)
Former SOE head	0.0469** (0.0193)	0.0783*** (0.0231)	0.0895*** (0.0246)	0.431** (0.166)	0.405** (0.162)	0.0480 (0.159)	0.474*** (0.128)	0.430*** (0.148)
NPC or CPPCC	−0.0225 (0.0229)	−0.0197 (0.0432)	−0.0564 (0.0386)	0.152 (0.192)	−0.197 (0.219)	−0.105 (0.231)	−0.315 (0.344)	−0.515** (0.248)
Constant	0.288*** (0.0693)	0.400*** (0.0586)	0.118* (0.0695)	−5.212*** (0.741)	−6.425*** (0.794)	−7.301*** (0.653)	−7.321*** (0.503)	−9.051*** (0.727)
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	827	978	905	1,064	1,070	992	1,088	1,035
R-squared	0.170	0.244	0.206	0.174	0.209	0.117	0.330	0.201

Note(s): Standard errors are clustered at provincial level and reported in parentheses. Significance levels 0.1, 0.05 and 0.01 are noted by *, ** and ***, respectively. All regressions control for industrial, year and provincial fixed effects

Source(s): The data is organized by authors based on National Surveys of Privately Owned Enterprises in China

Variable	Party organization	Party organization	Party organization	Party organization
Driving variable at 3 or above	0.542*** (0.0305)	0.495*** (0.0336)	0.454*** (0.0427)	0.438*** (0.0558)
Driving variable		0.00310*** (0.000805)	0.0200* (0.00991)	−0.0269 (0.0209)
(Driving variable-3) * Driving variable at 3 or above			−0.0169* (0.00980)	0.0300 (0.0204)
Firm level control	No	No	No	Yes
Fixed effect	Yes	Yes	Yes	Yes
Observations	2,172	2,172	2,172	933
R-squared	0.428	0.450	0.450	0.544

Note(s): Standard errors are clustered at provincial level and reported in parentheses. Significance levels 0.1, 0.05 and 0.01 are noted by *, ** and ***, respectively. All regressions control for industrial, year and provincial fixed effects

Source(s): The data is organized by authors based on National Surveys of Privately Owned Enterprises in China

Table 4.
First stage estimation results

unemployment insurance. But the per capita expenditure on these programs depends on the nature of the programs and the enterprises. Therefore, Party organizations have limited impact on the per capita expenditure on worker's benefits.

Enterprises that are mostly affected by the provision of the CCP Constitution are those near the cutoff point and thus it is therefore expected that Party organizations will have greater impact on these companies. In Panel B, we further examined the enterprises with zero to six Party members near the cutoff point [16] where greater impact of Party organizations was found as expected. Compared with enterprises without Party organizations, the pension insurance coverage in those with Party organizations near the cutoff point is 38.2% higher and the per capita expenses on workplace safety and unemployment insurance are 1.77% and 1.2% higher, respectively. But the sharp reduction in the sample size leads to greater variance of the estimated parameters.

As reliable parameter estimate should not be affected by the extreme value or specific function of the driving variable, Table 6 checks the robustness of baseline results with different functional forms of $f(x_i)$ and $k(x_i)$. According to Lemieux and Milligan (2008) and as Lei *et al.* (2010), both $f(x_i)$ and $k(x_i)$ were set as the linear functions of x_i in Panel A and different slopes of x_i on both sides of the discontinuity point were allowed. In Panel B, both $f(x_i)$ and $k(x_i)$ were set as the second-order polynomials of x_i [17]. The estimation results under different functional forms remain stable and consistent and Party organizations have significantly positive impact on both the coverage and per capita expenditure of worker's benefits.

5.3 Party organization and enterprise performance

As discussed above, Party organizations in private enterprises have significantly positive impact on the benefits of workers which leads to the question of whether the improvement of worker's benefits will impair the performance of enterprises. Enterprises and Party organizations may have different goals. Enterprises aim to maximize profits, while Party organizations and their leaders may focus on other goals, such as social stability and political promotion. Many researchers hold that political intervention often distorts firms from maximizing profits, which is detrimental to their performance (Fan *et al.*, 2007; Shleifer and Vishny, 1994; Wei, 2013). To test the impact of Party organizations on enterprise

Table 5.
Second stage estimation results

Variable	Coverage				Per capita expenditure			
	Medical insurance	Pension insurance	Unemployment insurance	Workplace safety	Medical insurance	Other medical expenses	Pension insurance	Unemployment insurance
Panel A: Total sample								
Party organization	−0.00423 (0.0475)	0.135* (0.0723)	0.166** (0.0603)	1.201** (0.504)	−0.850 (0.615)	0.961 (0.686)	0.826 (1.014)	1.774*** (0.546)
Driving variable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Driving variable^2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	733	873	824	937	946	877	958	919
R-squared	0.155	0.232	0.203	0.179	0.193	0.087	0.281	0.188
Panel B: Sample near the discontinuity point								
Party organization	0.0968 (0.0576)	0.382*** (0.122)	0.129 (0.0943)	1.765 (1.763)	0.398 (0.955)	2.493*** (0.854)	2.187** (0.958)	1.202 (0.922)
Driving variable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Driving variable^2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	503	578	548	630	639	590	638	613
R-squared	0.170	0.208	0.201	0.191	0.189	0.109	0.279	0.169

Note(s): Standard errors are clustered at provincial level and reported in parentheses. Significance levels 0.1, 0.05 and 0.01 are noted by *, ** and ***, respectively. All regressions control for firm and entrepreneur attributes, provincial average wage as well as industrial, year and provincial fixed effects
Source(s): The data is organized by authors based on National Surveys of Privately Owned Enterprises in China

Table 6. Estimation results of alternative model settings

Variable	Coverage				Per capita expenditure			
	Medical insurance	Pension insurance	Unemployment insurance	Workplace safety	Medical insurance	Other medical expenses	Pension insurance	Unemployment insurance
Panel A: Piecewise linear model								
Party organization	0.225** (0.0924)	0.510*** (0.146)	0.317*** (0.100)	2.060* (1.203)	1.963* (1.126)	3.534*** (1.092)	3.027** (1.197)	2.190** (0.803)
Driving variable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interaction term	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	669	800	753	861	867	805	876	842
R-squared	0.141	0.143	0.183	0.145	0.194	0.093	0.262	0.182
Panel B: Quadratic polynomial model								
Party organization	0.0456 (0.0682)	0.248*** (0.0877)	0.257*** (0.0695)	1.749** (0.726)	−0.242 (0.952)	2.243** (0.870)	2.048 (1.273)	2.628*** (0.777)
Driving variable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quadratic polynomial	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	669	800	753	861	867	805	876	842
R-squared	0.174	0.247	0.202	0.161	0.210	0.046	0.296	0.162

Note(s): Standard errors are clustered at provincial level and reported in parentheses. Significance levels 0.1, 0.05 and 0.01 are noted by *, ** and ***, respectively. All regressions control for firm and entrepreneur attributes, provincial average wage as well as industrial, year and provincial fixed effects

Source(s): The data is organized by authors based on National Surveys of Privately Owned Enterprises in China

performance, three indicators were used, namely labor productivity (logarithm of per capita output), return on equity and return on sales.

The estimation results in Table 7 reveal that Party organizations help increase labor productivity but have no significant impact on enterprise profitability. The finding is consistent with those of Lu *et al.* (2010) and Wei *et al.* (2013), who studied the role of labor unions in Chinese private enterprises and with those of Wei (2013), who explored the impact of Party organizations on business performance in private enterprises. As to whether or not the enterprise has a labor union was controlled in the regression, the impact of Party organizations on enterprise performance found in this paper is independent of the impact of labor unions. One possible explanation is that, on the one hand, Party organizations improve worker's benefits by programs, such as medical insurance and workplace safety protection and thus promote their productivity; on the other hand, this increases the labor cost of enterprises. Therefore, Party organizations have no significant impact on enterprise performance.

6. Validity test

As discussed above, the validity of regression discontinuity should be verified under strict assumptions and this section tests the validity of the methods used in this paper. A key assumption about regression discontinuity is that the counterfactual outcome variables demonstrate continuity, which suggests that the average potential outcomes near both sides of the discontinuity point are equal. A common test approach is to check whether the basic characteristics near both sides of the discontinuity point demonstrate a smooth pattern at the discontinuity point (Van der Klaauw, 2002) [18]. In Table 8, the basic characteristics of enterprises and entrepreneurs were used as the dependent variables in regression discontinuity with the same model specification in Table 5 [19]. The estimation results in Table 8 show that the variables that should not be correlated with the existence of Party organizations have no significant discontinuity points at the critical value. The results also justify the application of the regression discontinuity method.

Another concern with the driving variable is whether the number of Party members is under full control of enterprises. Since the enterprises know the provisions of the CCP Constitution and related documents, they may control the number of Party members. In particular, enterprises aiming to establish Party organizations will recruit more Party members, while those without the goal will recruit as few Party members as possible.

For several reasons, we argue that a firm cannot fully control the number of Party members among employees: first, according to the provisions of the Party constitution, private enterprises without party organizations will have their Party members managed by local Party organizations responsible for recruiting Party members and are outside the control of the private firms. Second, even private firms that do not want to establish Party organizations and try to avoid recruiting Party members, cannot stop their employees from joining the Party by submitting applications to local Party organizations. Third, Party organizations have no impact on enterprise performance which leaves enterprises no incentive to control Party member numbers. As a result, the authors of this study believe the threat to identification may not be too serious.

7. Conclusion

While there are many debates about how grassroot Party organizations in private enterprises affect firm operation and performance, few studies explore its impact on worker's benefits. Based on the data from the Seventh National Survey of Private Enterprises in 2006, this paper delved into the impact of Party organizations in private enterprises on worker's benefits and

Variable	OLS			RD		
	Labor productivity	Return on sales	Return on equity	Labor productivity	Return on sales	Return on equity
Party organization	0.422*** (0.115)	−0.00738 (0.0118)	0.0921*** (0.0318)	0.769*** (0.256)	−0.0738 (0.0578)	0.0953 (0.136)
Driving variable	No	No	No	Yes	Yes	Yes
Driving variable^2	No	No	No	Yes	Yes	Yes
Firm level control	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	826	783	792	678	644	649
R-squared	0.356	0.124	0.179	0.376	0.132	0.178

Note(s): Standard errors are clustered at provincial level and reported in parentheses. Significance levels 0.1, 0.05 and 0.01 are noted by *, ** and ***, respectively. All regressions control for firm and entrepreneur attributes, provincial average wage as well as industrial, year and provincial fixed effects

Source(s): The data is organized by authors based on National Surveys of Privately Owned Enterprises in China

Table 7.
Party organization and enterprise performance

Table 8.
Test of significant changes in enterprise characteristics at discontinuity points

Variable	Log assets	Age of enterprise	Log employees	Female	Years of education	Former cadre	Party member	Former SOE head	NPC or CPPCC
Party organization	−0.313 (0.921)	−2.861 (2.959)	1.101 (0.979)	0.144 (0.229)	−2.095 (2.555)	−0.136 (0.376)	0.0705 (0.278)	0.183 (0.546)	−0.0302 (0.301)
Driving variable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Driving variable^2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,043	1,448	1,429	1,497	1,489	1,498	1,360	954	1,498
R-squared	0.227	0.089	0.278	0.042	0.052	0.034	0.108	0.061	0.244

Note(s): Standard errors are clustered at provincial level and reported in parentheses. Significance levels 0.1, 0.05 and 0.01 are noted by *, ** and ***, respectively. All regressions control firm and entrepreneur attributes, provincial average wage as well as industrial, year and provincial fixed effects. The regressions are based on sample with less than six party members

Source(s): The data is organized by authors based on National Surveys of Privately Owned Enterprises in China

enterprise performance with the regression discontinuity research design by using the number of Party members required by the CCP Constitution and related documents for Party organizations in private enterprises as quasi-natural experiments. The results suggest that Party organizations help improve the fringe benefits (other than wages) of workers significantly. The coverage of pension insurance and unemployment insurance, as well as the per capita expenditure on workplace safety and unemployment insurance of private enterprises with Party organizations, are significantly higher than those of enterprises without Party organizations.

This study enriches the research on worker benefits and the roles of Party organizations in Chinese enterprises. The findings helped develop a deeper understanding of the labor-capital coordination mechanism in China and provide evidence about the role of Party organizations in private enterprises. Against the backdrop of weak legal protection for Chinese workers and underdeveloped labor unions in private enterprises, Party organizations in non-public enterprises appear to function as an alternative labor-capital coordination mechanism to resolve labor disputes and protect the legitimate rights and interests of workers. Our findings also highlight the importance of the relationship between Party organizations and labor unions when studying worker benefits in China.

While the study provides valuable insights into the role of Party organizations in private enterprise in China, many important issues remain unanswered, which call for more research work. For instance, while possible ways for Party organizations to coordinate labor-capital relations have been discussed, further empirical research is required to explore the specific mechanisms through which Party organizations work. Furthermore, it is not clear whether the role of Party organizations in protecting workers will be weakened or strengthened when legal protection improves over time. These and other crucial questions may provide directions for future research.

Notes

1. A system in which Party members can be appointed to three boards according to laws and Party members on the boards can be appointed to Party committees.
2. There are many cases and extensive media coverage on the involvement of Party organizations of private enterprises in the coordination of labor-capital relations, such as "How Do Party Organizations Be Good "Intermediaries"?" (*Pearl River Times*, July 1, 2010) and "Lubricant to Coordinate the Labor-capital Relations" (*Kunshan Daily*, September 21, 2007).
3. See the Notice on Enhancing Party Building in Non-public Economic Organizations (Trial) issued by the Organization Department of the CCP Central Committee in 2000 for more details.
4. As there are only three values taken by the running variable (0, 1 and 2) at the left of the cut-off, which probably prevents fully exploiting the benefits of an RDD strategy. We thus suggest the reader take caution in interpreting the related findings.
5. About 97 per cent of the enterprises studied in this paper have less than 50 Party members and a Party branch should be established according to relevant regulations. Therefore, the paper focuses on the influence of Party branches.
6. As the establishment of Party organizations is subject to other factors such as the degree of policy implementation, the provisions of the CCP Constitution can only bring about an exogenous increase in the possibility of establishing a Party organization when there are three Party members. But this does not necessarily lead to the shift from 0 to 1. And this justifies why fuzzy regression discontinuity is applicable.
7. The relationships between the number of Party members and other welfare indicators used in this paper demonstrate a similar pattern. We do not report these results to save space, but they are available upon request.

8. According to Van der Klaauw (2002), when a sample is limited to the area near the discontinuity point and the dummy variable that whether the sample exceeds the discontinuity point is used as the instrumental variable, the two-stage least squares estimated and the local Wald estimates obtained by non-parametric methods are equal in number. Compared with the local Wald estimates drawn based only on the observations in a narrow area near the discontinuity point, the two-stage estimates can use more sample information by introducing additional smooth assumptions.
9. According to the Notice on Enhancing Party Building in Non-public Economic Organizations (Trial) released in September 2000 by the Organization Department of the CCP Central Committee, a Party branch should be established if the number of Party members is more than three and less than 50. Most enterprises studied in this paper have three to 50 Party members and should all establish Party branches. It is reasonable to assume that the impact of Party organizations on enterprises is homogeneous.
10. The survey only collected information about the number of party members in 2006. More recent data does not contain such information.
11. For more information about the survey please refer to the analysis report by *China Private Economy Yearbook (2002-June 2004)* (China Zhigong Publishing House).
12. According to the information released by People's Daily Online on July 1, 2006, as of the end of 2005, the total number of CCP members nationwide was 70.8 million. According to the *China Statistical Yearbook 2006*, the population in China was 1.3756 billion at the end of 2005. The proportion of Party members in China can be obtained by dividing the former by the latter.
13. The average wage of workers was taken as the dependent variable as well, but the results showed that Party organizations had no impact on it. See the results in Table A2 in the Appendix.
14. As the questionnaire only covers the total expenditure of enterprises on labor safety protection and other medical expenses, but not the number of workers covered, only the per capita expenditure of the two indicators, rather than their coverage, is used in the paper. The insurance expenditure per capita is computed by dividing the number of all the workers rather than recipients.
15. The result, including enterprise and entrepreneur characteristics, is consistent with the OLS regression results. We do not report these results to save space, but they are available upon request.
16. As 75.12 per cent of the private enterprises in our sample has less than six Party members, the estimation results in this interval are therefore representative. The samples were further limited to a smaller interval (e.g. 1–5, 2–4), which generated similar results. However, in this case, due to the sharp decrease in the sample size and the rapid increase in the variance of the estimated parameters, the significance of Party organizations weakens.
17. Setting the control function as a low-order polynomial is a common approach in the discontinuity regression design. For similar settings, refer to Angrist and Lavy (1999), Meng (2013) etc. Higher-order polynomial settings were also used in the paper, which generated similar results.
18. We also use another approach to directly check whether the basic enterprise characteristics on both sides of the discontinuity point are systematically different. The results showed that, apart from the number of workers and the size of assets, there are no significant differences in other characteristics. As the number of Party members is correlated with the size of an enterprise to some extent, such differences make sense. Results in Table 8 showed that the number of workers and the size of assets demonstrate smooth changes at the critical point.
19. As labor unions are under the leadership of Party organizations, they are not taken as a basic enterprise characteristic independent of the impact of Party organizations.

References

Angrist, J.D. and Lavy, V. (1999), "Using Maimonides' rule to estimate the effect of class size on scholastic achievement", *The Quarterly Journal of Economics*, Vol. 114 No. 2, pp. 533-575.

Chang, E.C. and Wong, S.M.L. (2004), "Political control and performance in China's listed firms", *Journal of Comparative Economics*, Vol. 32 No. 4, pp. 617-636.

Chen, S. and Van der Klaauw, W. (2008), "The work disincentive effects of the disability insurance program in the 1990s", *Journal of Econometrics*, Vol. 142 No. 2, pp. 757-784.

Dong, Z., Luo, Z. and Wei, X. (2016), "Social insurance with Chinese characteristics: the role of Communist Party in private firms", *China Economic Review*, Vol. 37, pp. 40-51.

Even, W.E. and Macpherson, D.A. (1994), "Employer size and compensation: the role of worker characteristics", *Applied Economics*, Vol. 26 No. 9, pp. 897-907.

Fan, J.P.H., Wong, T.J. and Zhang, T. (2007), "Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms", *Journal of Financial Economics*, Vol. 84 No. 2, pp. 330-357.

Freeman, R.B. (1981), "The effect of unionism on fringe benefits", *ILR Review*, Vol. 34 No. 4, pp. 489-509.

Ge, Y. (2007), "What do unions do in China?", Working Paper.

Hahn, J., Todd, P. and Van der Klaauw, W. (2001), "Identification and estimation of treatment effects with a regression-discontinuity design", *Econometrica*, Vol. 69 No. 1, pp. 201-209.

Hu, X. (2002), "A comparative study on Party building between private enterprises and state-owned and other different types of enterprises", *Zhejiang Academic Journal*, Vol. 5, pp. 220-224.

Imbens, G.W. and Lemieux, T. (2008), "Regression discontinuity designs: a guide to practice", *Journal of Econometrics*, Vol. 142 No. 2, pp. 615-635.

Lee, D.S. and Lemieux, T. (2010), "Regression discontinuity designs in economics", *Journal of Economic Literature*, Vol. 48 No. 2, pp. 281-355.

Lei, X., Tan, L. and Zhao, Y. (2010), "Will retirement affect health?", *China Economics Quarterly*, Vol. 9 No. 4, pp. 1539-1558.

Lemieux, T. and Milligan, K. (2008), "Incentive effects of social assistance: a regression discontinuity approach", *Journal of Econometrics*, Vol. 142 No. 2, pp. 807-828.

Lu, Y., Tao, Z. and Wang, Y. (2010), "Union effects on performance and employment relations: evidence from China", *China Economic Review*, Vol. 21 No. 1, pp. 202-210.

Ma, L., Wang, Y. and Shen, X. (2012), "Research on the governance effect of Party organizations in China's state-owned enterprises - from the perspective of 'insider control", *China Industrial Economics*, Vol. 8, pp. 82-95.

Meng, L. (2013), "Evaluating China's poverty alleviation program: a regression discontinuity approach", *Journal of Public Economics*, Vol. 101, pp. 1-11.

Metcalf, D. and Li, J. (2006), *Chinese Unions: an Alice in Wonderland. Advances in Industrial and Labor Relations*, Emerald Group Publishing, Bingley.

Opper, S., Wong, S.M.L. and Ruyin, H. (2002), "Party power, market and private power: Chinese Communist Party persistence in China's listed companies", *Research in Social Stratification and Mobility*, Vol. 19, pp. 105-138.

Qian, Y. (1995), "Reform of corporate governance structure and financing structure", *Economic Research Journal*, Vol. 1, pp. 20-29.

Shleifer, A. and Vishny, R.W. (1994), "Politicians and firms", *The Quarterly Journal of Economics*, Vol. 109 No. 4, pp. 995-1025.

Van der Klaauw, W. (2002), "Estimating the effect of financial aid offers on college enrollment: a regression–discontinuity approach", *International Economic Review*, Vol. 43 No. 4, pp. 1249-1287.

Wei, Y. (2013), "Party control in China's listed firms", *Czech Journal of Economics and Finance*, Vol. 63 No. 4, pp. 382-397.

Wei, X., Dong, Z. and Huang, J. (2013), "Does the labor union improve the labor income share—theoretical analysis and empirical evidence from Chinese private enterprises", *Economic Research Journal*, Vol. 8, pp. 16-28.

Wong, S.M.L., Opper, S. and Hu, R. (2004), "Shareholding structure, depoliticization and firm performance", *Economics of Transition*, Vol. 12 No. 1, pp. 29-66.

Xia, X. (2004), "Private sector: labor relations and coordination mechanism", *Management World*, Vol. 6, pp. 32-52.

Yao, X. (2005), "Development of private economy and adjustment of labor relations", *Zhejiang Social Sciences*, Vol. 2, pp. 78-85.

Yao, Y. and Zhong, N. (2013), "Unions and workers' welfare in Chinese firms", *Journal of Labor Economics*, Vol. 31 No. 3, pp. 633-667.

Zabojnik, J. and Bernhardt, D. (2001), "Corporate tournaments, human capital acquisition, and the firm Size—wage relation", *The Review of Economic Studies*, Vol. 68 No. 3, pp. 693-716.

Zhu, Q. (2009), "The role of Party organizations in the 'two new' organizations: problems and countermeasures", *Exploration*, Vol. 1, pp. 44-49.

Appendix

Variables	(1) OLS Labor union	(2) RD Labor union
Party organization	0.327*** (0.0300)	1.486*** (0.0769)
Log assets	0.0222** (0.00909)	−0.0220** (0.00920)
Age of enterprise	0.00707* (0.00402)	0.00521 (0.00333)
Log employee	0.0588*** (0.0117)	0.0252*** (0.00803)
Female	0.0724* (0.0389)	0.0541 (0.0411)
Years of education	−0.00387 (0.00663)	−0.00345 (0.00487)
Former cadre	−0.0164 (0.0393)	0.0856** (0.0321)
CCP member	0.0134 (0.0376)	−0.212*** (0.0390)
Former SOE head	0.0137 (0.0305)	−0.111*** (0.0322)
NPC or CPPCC	0.0905** (0.0354)	−0.0425 (0.0254)
Constant	−0.0741 (0.140)	0.183* (0.0913)
Driving variable		Yes
Driving variable^2		Yes
Fixed effects	Yes	Yes
Observations	1,175	1,020
R-squared	0.342	0.491

Note(s): Standard errors are clustered at provincial level and reported in parentheses. Significance levels 0.1, 0.05 and 0.01 are noted by *, ** and ***, respectively. All regressions control for firm and entrepreneur attributes, as well as industrial, year and provincial fixed effects

Source(s): The data is organized by authors based on National Surveys of Privately Owned Enterprises in China

Table A1. The impact of Party organization on establishment of labor unions

VARIABLES	(1) OLS Log wage per capita	(2) RD Log wage per capita
Party organization	0.194*** (0.0435)	0.0643 (0.158)
Labor union	0.00273 (0.0406)	0.0459 (0.0575)
Log assets	0.0924*** (0.0159)	0.100*** (0.0169)
Age of enterprise	0.00695 (0.00422)	0.00624 (0.00450)
Log employee	-0.143*** (0.0236)	-0.158*** (0.0323)
Female	-0.0483 (0.0490)	-0.0637 (0.0455)
Years of education	0.0329*** (0.00850)	0.0340*** (0.00934)
Former cadre	-0.00509 (0.0479)	-0.0489 (0.0614)
CCP member	0.00940 (0.0378)	0.0220 (0.0434)
Former SOE head	-0.0176 (0.0401)	-0.00280 (0.0490)
NPC or CPPCC	-0.00794 (0.0496)	-0.0282 (0.0370)
Constant	-0.625** (0.273)	-0.744** (0.280)
Fixed effects	Yes	Yes
Driving variable	No	Yes
Driving variable^2	No	Yes
Observations	1,068	924
R-squared	0.225	0.215

Note(s): Standard errors are clustered at provincial level and reported in parentheses. Significance levels 0.1, 0.05 and 0.01 are noted by *, ** and ***, respectively. All regressions control for industrial, year and provincial fixed effects

Source(s): The data is organized by authors based on National Surveys of Privately Owned Enterprises in China

Table A2.
The impact of party organization on average wage

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