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RESEARCH NOTE

Wenjing Xie, Keji Liu, Fei Xie and Haoyuan Ding

POLITICAL TIES AND FIRM PERFORMANCE IN CHINA: EVIDENCE FROM A QUANTILE REGRESSION

Abstract
Whether political ties enhance or weaken firm performance has been widely investigated in a number of studies, including some on China. Based on a database of non-financial A-share listed firms from 2004 to 2012, we study the effects of political ties on firm performance within a quantile regression framework. We find that there is a positive relationship between political ties and economic performance, but that it is diminishing with respect to firm performance. Political ties appear particularly important for weaker firms.

Keywords
political tie, firm performance, quantile regression, diminishing effect

A number of studies have looked at the effects of political ties on the performance of companies since the seminal work of Sapienza (2003). Firms with political connections are observed to enjoy preferential treatment in obtaining bank loans (Sapienza 2003; Khwaja and Mian 2005; Claessens, Feijen, and Laeven 2008; Li et al. 2008; Firth et al. 2009; Boubakri, Cosset, and Saffar 2012), with respect to tax benefits (Adhikari, Derashid, and Zhang 2006; Faccio, Masulis, and McConnell 2006; Wu et al. 2012), and in gaining financial assistance from the government (Johnson and Mitton 2003; Faccio, Masulis, and McConnell 2006). This literature concludes that connected firms also have superior financial performance (Fan, Wong, and Zhang 2007; Boubakri, Cosset, and Saffar 2012; Faccio 2010; Wu, Wu, and Rui 2012).

With respect to China, it is known that state-owned enterprises (SOEs) enjoy an advantaged status in obtaining bank loans, subsidies, tax breaks, and many crucial inputs (Chow, Song, and Wong 2010; Poncet, Steingress, and Vandenbussche 2010; Wu et al. 2012). Firms with political connections do not face underinvestment problems (Xu, Xu, and Yuan 2013), receive favorable government treatment (Sheng, Zhou, and Li 2011; Khwaja and Mian 2005; Li et al. 2008), are more likely to receive government contracts and bailout funds (Faccio, Masulis, and McConnell 2006), have stronger cash positions, secure larger long-term loans and have lower financing costs (Su and Fung 2013), and are more likely to survive (Du and Girma 2010). Such firms also have more confidence in the legal system (Li et al. 2008).

The theoretical reason for these findings is simply stated. The incentive for corporations to establish political connections in transition economies ultimately arises from continuing

state control of key resources. In a relationship-based economy such as China's, building connections with the government or even engaging in politics can facilitate private communications with officials, thereby mitigating severe information asymmetries and risks of discrimination (Li et al. 2008; Wu, Wu and Rui 2012; Xu, Xu, and Yuan 2013).

Previous studies have generally shown how political connections affect average corporate performance across large samples of firms, typically using OLS specifications. But these findings only summarize the average relationship between a set of regressors and the outcome variable based on the conditional mean function. There are reasons to think that the effects of political connections are heterogeneous. Weakly performing corporations are more likely to obtain more significant effects from the informal links with the government. Put differently, the marginal effect of building connections with the government should be larger for poorly performing corporations.

Such results can be viewed as an extension of the resource-based theory of the firm, because such firms have insufficient resources and information as compared with their better performing peers. Take bank loans as an example. Better-performing firms have a good reputation with respect to repayment of loans from banks. Poorly performing firms do not have such reputations, so obtaining loans is harder and the terms are less favorable. Political connections can overcome these disabilities and should thus have larger marginal effects on performance.

To test for the possibility of these differential effects, we adopt the quantile regression (QR) approach. The QR approach has been used extensively in various studies (Margaritis and Psillaki 2010; Li, Sun, and Zou 2009; Ebersberger, Marsili, and Reichstein 2010; Falk 2012). In comparison with OLS, QR has two advantages for our purposes. First, QR provides a richer characterization of the data, and allows for the consideration of the effect of a covariate on the entire distribution of induced variable and not merely its conditional mean. Second, QR is more robust to non-normal errors and outliers than OLS.

Our QR regression results do find that firms can benefit from political connections whether they perform well or poorly. However, the magnitude of coefficients varies widely across the distribution, particularly when we focus on companies in the bottom quantile of firm performance. The positive effect of political connections for the bottom quantile is approximately twice as high as that in the top one, thereby indicating that the effect of political tie is diminishing with respect to firm performance.

DATA

To measure political connections, we obtained a profile of the CEO's and of other directors from the "Profile of Directors and Senior Managers" section of the company's prospectus in the China Stock Market and Accounting (CSMAR) database. We also manually collected the information of the TMT/board members' curriculum vitae, and defined political ties in terms of former or current People's Congress (PC) and Chinese People's Political Consultative Conference (CPPCC) membership. This is a count variable where we count if a TMT/board member belongs to the PC or CPPCC at any level of the Chinese government. In contrast with previous studies (Fan, Wong, and Zhang 2007), our indicator of political ties is more comprehensive because it not only counts information for all directors or senior managers but also for the CEO and chairman (Wu, Wu, and Rui 2012; Xu, Xu, and Yuan 2013). Therefore, the indicator we adopt is a continuous measurement other

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than a dummy variable. However, we also run tests with a simple dummy measurement (dum_gov) equal to 1 when the firm has political connections; otherwise, it is 0, to maintain consistency with previous literature. From the perspective of robustness, we also consider a proportional measurement (propgov), which is the *proportion* of political ties measured as PC and CPPCC members—again former and current—divided by the total number of board and TMT members. An advantage of this last measure is that it controls for the problem of firm scale.

In Table 1, we separate the entire sample into five quantile intervals according to the different levels of firm performance, where the levels of political ties remain relatively constant regardless of the measurement used.

Our financial data are taken from CSMAR database, and include firm performance, firm size, firm age, financial leverage, and ownership concentration index.[1] Firm performance is measured as return on assets (ROA). Our sample spans the years 2004 to 2012, and includes 2,381 firms and 14,917 firm-year observations of non-financial A-share listed Chinese firms from 2004 to 2012. A detailed description of all variables can be found in the Appendix 1.

TABLE 1 Data Description (By Different Levels of Firm Performance)

Range of quantile		Gov	dum_gov	propgov
0 ~ 0.20	Obs.	2985	2987	2946
	Min	0.0000	0.0000	0.0000
	Mean	0.2251	0.1577	0.0146
	Max	6.0000	1.0000	0.4615
0.20 ~ 0.40	Obs.	2982	2984	2944
	Min	0.0000	0.0000	0.0000
	Mean	0.2636	0.1826	0.0173
	Max	6.0000	1.0000	0.5000
0.40 ~ 0.60	Obs.	2973	2984	2948
	Min	0.0000	0.0000	0.0000
	Mean	0.3387	0.2275	0.0217
	Max	6.0000	1.0000	0.5000
0.60 ~ 0.80	Obs.	2939	2983	2909
	Min	0.0000	0.0000	0.0000
	Mean	0.3692	0.2484	0.0247
	Max	6.0000	1.0000	0.5455
0.80 ~ 1.00	Obs.	2920	2979	2882
	Min	0.0000	0.0000	0.0000
	Mean	0.3682	0.2642	0.0239
	Max	6.0000	1.0000	0.4167
0 ~ 1.00	Obs.	14799	14917	14629
	Min	0.0000	0.0000	0.0000
	Mean	0.3125	0.2161	0.0204
	Max	6.0000	1.0000	0.5455

Note: This table presents different measurements of political tie on the sample of listed A share firms in China during the years 2004 to 2012. We split the whole sample into five quantile intervals according to the level of firm performance. Column 3 to 5 report the summary statistics (number of observations, min, mean and max) for each count (Gov), dummy (dum_gov) and proportional (propgov) measurements of proportional tie respectively.

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EMPIRICAL ANALYSIS

To maintain consistency with the previous literature (Wu, Wu, and Rui 2012; Wu et al. 2012), we first re-estimate the political tie–performance interdependence within the following model:

$$ROA_i = \alpha_0 + \alpha_1 \cdot Gov_i + \alpha_2 \cdot Controls_i + \epsilon_i, \quad (1)$$

where GOV_i and ROA_i denote political ties and firm performance for each firm i, respectively. $Controls_i$ is a $1 \times k$ vector that represents control variables, including the natural logarithm of total assets, the nature logarithm of firm age, the debt ratio and the percentage of shares held by the largest shareholder.[2] We also include time, province and industry fixed effects in our model, and robust variances are clustered at the firm level. In Table 2, we can observe that our all our measures of political connections are positive and significant with respect to firm performance, which is consistent with previous

TABLE 2 Impact of Political Tie on Firm Performance (Pooled OLS Model)

VARIABLES	(1) ROA	(2) ROA	(3) ROA
Gov	0.0036***		
	(3.677)		
dum_gov		0.0078***	
		(4.538)	
propgov			0.0504***
			(3.339)
Firm Controls			
lnassett	0.0084***	0.0083***	0.0088***
	(8.855)	(8.741)	(9.254)
lnlifee	−0.0181***	−0.0179***	−0.0182***
	(−8.804)	(−8.816)	(−8.862)
leverage	−0.0118***	−0.0118***	−0.0121***
	(−15.914)	(−15.903)	(−16.762)
shrcr1	0.0003***	0.0004***	0.0003***
	(5.814)	(5.921)	(5.633)
Fixed Effects			
Time F.E.	Yes	Yes	Yes
Province F.E.	Yes	Yes	Yes
Industry F.E.	Yes	Yes	Yes
Constant	−0.1302***	−0.1278***	−0.1351***
	(−6.608)	(−6.522)	(−6.865)
Observations	14,799	14,917	14,629
R^2	0.171	0.172	0.175

Note: This table reports the relation between political tie and firm performance. The following model is estimated with a vector of controls, in particular firm size, firm age, financial leverage and shareholder concentration index: $ROA_i = \alpha_0 + \alpha_1\ Gov_i + \alpha_2\ Controls_i + \epsilon_i$. Time dummy, province dummy and industry dummy are also considered to capture time, regional and industrial fixed effects. The definitions of all variables are stated in Appendix 1. Robust t values are reported in parentheses, clustering at firm level. Here ∗, ∗∗, and ∗∗∗ respectively indicate significance at the 10%, 5%, and 1% levels.

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literature (Li, Sun, and Zou 2009; Wu, Wu, and Rui 2012: Wu et al. 2012; Xu, Xu, and Yuan 2013).

We also implemented a panel fixed effect model (Table 3) and obtained conclusions consistent with the pooled OLS model in Table 2. Again, the results of the panel fixed effect model also show that the effect of the political tie-performance relation on the firm performance is obviously positive under any measurement of political tie.

However, as we noted OLS does not consider the possibility of heterogeneous effects across the distribution. For a comprehensive understanding of QR, we consider a linear specification for the conditional quantiles of ROA_i

$$ROA_i = C_i\beta + \epsilon_i, \tag{2}$$

where ROA_i represents firm performance, C_i are the k × 1 regressors that represent political ties and other constraints, β is the coefficient, and ϵ_i is the error term. The objective of the quantile regression model is to generate different conditional quantile functions.[3]

We now apply the above QR method to examine the conditional quantile estimates for the political tie–performance relation. Table 4 shows that as the firm performance

TABLE 3 Impact of Political Tie on Firm Performance (Panel Fixed Effect Model)

VARIABLES	(1) ROA	(2) ROA	(3) ROA
Gov	0.0041***		
	(4.190)		
dum_gov		0.0084***	
		(4.965)	
propgov			0.0610***
			(3.972)
Firm Controls			
lnassett	0.0065***	0.0069***	0.0068***
	(6.698)	(7.431)	(7.083)
lnlifee	−0.0187***	−0.0183***	−0.0189***
	(−9.908)	(−9.802)	(−10.044)
leverage	−0.0103***	−0.0108***	−0.0106***
	(−12.527)	(−13.415)	(−13.334)
shrcr1	0.0005***	0.0005***	0.0005***
	(8.279)	(8.040)	(8.108)
Fixed Effects			
Time F.E.	Yes	Yes	Yes
Firm F.E.	Yes	Yes	Yes
Constant	−0.0847***	−0.0934***	−0.0903***
	(−4.374)	(−5.020)	(−4.677)
Observations	14,799	14,917	14,629
Between R^2	0.3009	0.3128	0.3061

Note: This table reports the relation between political tie and firm performance. We include firm fixed effect to address the issue of firm heterogeneity. The following model is estimated with a vector of controls, in particular firm size, firm age, financial leverage and shareholder concentration index: $ROA_i = \alpha_0 + \alpha_1\ Gov_i + \alpha_2\ Controls_i + \epsilon_i$. The definitions of all variables are stated in Appendix 1. Robust t values are reported in parentheses, clustering at firm level. Here *, **, and *** respectively indicate significance at the 10%, 5%, and 1% levels.

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TABLE 4 Impact of Political Tie (Gov) on Firm Performance—Quantile Perspective

Quantile	(1) Q = 0.1	(2) Q = 0.3	(3) Q = 0.5	(4) Q = 0.7	(5) Q = 0.9
Gov	0.0049**	0.0027***	0.0031***	0.0030***	0.0023*
	(2.252)	(5.277)	(6.424)	(4.385)	(1.704)
Firm Controls					
lnassett	0.0172***	0.0063***	0.0037***	0.0010**	−0.0048***
	(12.221)	(18.974)	(11.793)	(2.282)	(−5.471)
lnlifee	−0.0213***	−0.0128***	−0.0108***	−0.0084***	−0.0011
	(−5.262)	(−13.332)	(−11.958)	(−6.476)	(−0.456)
leverage	−0.0260***	−0.0130***	−0.0108***	−0.0089***	−0.0074***
	(−28.137)	(−59.516)	(−52.516)	(−30.439)	(−12.931)
shrcr1	0.0003***	0.0002***	0.0002***	0.0003***	0.0005***
	(2.811)	(7.222)	(8.671)	(8.387)	(7.553)
Fixed Effects					
Time fixed effect	Yes	Yes	Yes	Yes	Yes
Province fixed effect	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
Constant	−0.3225***	−0.0875***	−0.0301***	0.0275***	0.1563***
	(−9.971)	(−11.455)	(−4.169)	(2.674)	(7.760)
Observations	14,799	14,799	14,799	14,799	14,799

Note: This table reports the relation between political tie and firm performance at various quantile points. The following model is estimated with a vector of controls, in particular firm size, firm age, financial leverage and shareholder concentration index: $ROA_i = \alpha_0 + \alpha_1 Gov_i + \alpha_2 Controls_i + \epsilon_i$. Time dummy, province dummy and industry dummy are also considered to capture time, regional and industrial fixed effects. The definitions of all variables are stated in Appendix 1. Robust t values are reported in parentheses, clustering at firm level. Here ∗, ∗∗, and ∗∗∗ indicate significance at the 10%, 5%, and 1% levels, respectively.

quantile level changes, the political connectedness coefficient for each quantile varies slightly with respect to its statistical significance, but still indicating that political tie affects firm performance throughout the entire distribution. However, the magnitude of coefficients diminishes quickly, especially when the bottom quintile is compared with other ones. For example, the coefficient of interest of the lowest quantile (while Q = 0.1) is approximately twice as large as that of the highest one (while Q = 0.9). These results are robust to the use of different measurements of political ties (see Appendix 2 and 3).

Figure 1 exhibits the changing parameter of the political tie-performance relationship for the entire distribution, together with the corresponding OLS estimate. Similar to Table 3, the significance varies slightly but the magnitude drops sharply in successive quintiles. Compared with the OLS estimates, the results indicate that the effect exceeds the average (OLS estimates) for the relatively low quantile interval.

CONCLUSION

Whether political ties enhance or impede firm performance has been extensively investigated including in China. But this study is the first to look at this question in a QR framework and find that the effect of political ties—while significant across the

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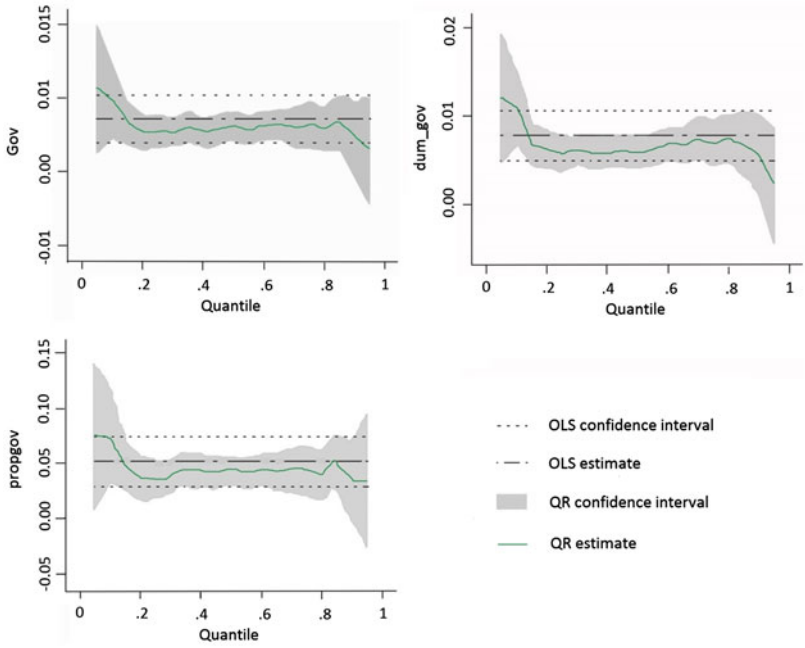
FIGURE 1 The Quantile Estimates of Political Connectedness Coefficient



Note: This figure shows the QR and OLS estimations of the political connectedness coefficient with 95% confidence intervals. The political connectedness indexes are measured by three different ways. The definitions of three measurements are presented in Appendix 1.

distribution—are diminishing with respect to firm performance. Hence, we can conclude that political ties play a particularly important role for poorly performing companies. The implications are two-fold for well-performing firms and their counterparts. Political ties improve the profitability of well-performing firms but they would probably be performing well anyway, given the diminishing marginal effects. At the other end of the distribution, political ties are sustaining firms that might otherwise fail. A more market-oriented interpretation is that the government should look hard at these political connections because they are helping firms that don't need it, while sustaining firms that it would be more efficient to let fail.

Wenjing Xie received the B.S. degree in management from Shanghai University of Finance and Economics, Shanghai, China, in 2009, and the Ph.D. degree in economics from Hong Kong Baptist University, Hong Kong, in 2016. She is currently an Assistant Professor with the School of Economics and Finance, Shanghai International Studies University, China. Her research interests include mainly international economics and applied econometrics.

Keji Liu received the B.S. degree in applied math from Huazhong University of Science and Technology, Wuhan, China, in 2009, and the M. Phil. and Ph.D. degrees in math from the Chinese University of Hong Kong, Hong Kong, in 2011 and 2014, respectively. He is currently an Associate Professor with the School of Finance, Shanghai University of Finance and Economics, China. His research interests include mainly mathematical finance and inverse problems.

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Fei Xie received the B.S. and Ph.D. degree in Finance from Shanghai University of Finance and Economics, Shanghai, China, in 2001 and 2007, respectively. He is currently an Assistant Professor with the School of Finance, Shanghai University of Finance and Economics, China. His research interests include mainly financial engineering.

Haoyuan Ding received the B.S. and M.S. degrees in management and economics from Shanghai University of Finance and Economics, Shanghai, China, in 2009 and 2011, respectively, and the Ph.D. degree in economics from the Chinese University of Hong Kong, Hong Kong, in 2014. He is currently an Associate Professor with the School of International Business Administration, Shanghai University of Finance and Economics, China. His research interests include mainly corporate finance, international finance and Chinese economy.

NOTES

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1. Details of variable definitions can be found in the Appendix 1.

2. The similar control variables are employed in Berger and Ofek (1995), Santalo and Becerra (2008).

3. Assume that the conditional mean of ROA is $\mu(C) = C'\beta$, and the quantile function is $F_P(\tau|C) = C'\beta(\tau)$, with τ stands for the quantile variable. We estimate the conditional quantile functions by $\underset{\beta\in\mathbb{R}^k}{\operatorname{argmin}} \left[\tau \sum_{ROA_i \geq C'_i\beta} |ROA_i - C'_i\beta_\tau| + (1-\tau) \sum_{ROA_i < C'_i\beta} |ROA_i - C'_i\beta|\right]$ As τ approaches to zero (one), $C_i\beta_\tau$ describes the behavior of ROA at the left (right) tail of the conditional distribution.

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APPENDIX 1. Variable Definition

Variable Name (Notation)	Description
Political tie (Gov)	The number of political ties (PC and CPPCC members, former and current).
Political tie (dum_gov)	Dummy variable equals to 1 when the firm has political connections, otherwise 0.
Political tie (propgov)	The proportions of political tie (PC and CPPCC members, former and current) divided by the total number of board and TMT members.
ROA (return on asset)	Operating income divided by total assets.
Firm Size (lnassett)	The natural log of total assets at the beginning of the year.
Firm Age (lnlifee)	The natural logarithm of one plus the number of years since listed.
Financial Leverage (leverage)	The ratio of total debts to total assets.
Ownership concentration index (shrcr1)	The percentage of shares held by the largest shareholder (TOP1).

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APPENDIX 2. Impact of Political Tie (dum_gov, dummy measurement) on Firm Performance – Quantile Perspective

Quantile	(1) Q = 0.1	(2) Q = 0.3	(3) Q = 0.5	(4) Q = 0.7	(5) Q = 0.9
dum_gov	0.0110***	0.0062***	0.0058***	0.0075***	0.0056**
	(3.042)	(6.890)	(6.874)	(6.204)	(2.385)
Firm Controls					
lnassett	0.0169***	0.0061***	0.0036***	0.0008*	−0.0048***
	(12.637)	(18.369)	(11.445)	(1.872)	(−5.476)
lnlifee	−0.0212***	−0.0125***	−0.0110***	−0.0084***	−0.0001
	(−5.506)	(−13.122)	(−12.173)	(−6.482)	(−0.046)
leverage	−0.0259***	−0.0130***	−0.0108***	−0.0090***	−0.0075***
	(−29.353)	(−59.425)	(−52.616)	(−30.507)	(−13.000)
shrcr1	0.0003***	0.0002***	0.0002***	0.0003***	0.0005***
	(2.937)	(7.241)	(8.977)	(8.294)	(7.581)
Fixed Effects					
Time F.E.	Yes	Yes	Yes	Yes	Yes
Province F.E.	Yes	Yes	Yes	Yes	Yes
Industry F.E.	Yes	Yes	Yes	Yes	Yes
Constant	−0.3183***	−0.0849***	−0.0298***	0.0313***	0.1510***
	(−10.313)	(−11.097)	(−4.126)	(3.024)	(7.523)
Observations	14,917	14,917	14,917	14,917	14,917

Note: This table states the relation between political tie and firm performance at various quantile points. The following model is estimated with a vector of controls, in particular firm size, firm age, financial leverage and shareholder concentration index: $ROA_i = \alpha_0 + \alpha_1 dum\_gov_i + \alpha_2 Controls_i \epsilon$. Time dummy, province dummy and industry dummy are also considered to capture time, regional and industrial fixed effects. The definitions of all variables can be found in Appendix 1. Robust t values are reported in parentheses, clustering at firm level. Here ∗, ∗∗, and ∗∗∗ indicate significance at the 10%, 5%, and 1% levels, respectively.

APPENDIX 3. Impact of Political Tie (propgov, proportional measurement) on Firm Performance – Quantile Perspective

Quantile	(1) Q = 0.1	(2) Q = 0.3	(3) Q = 0.5	(4) Q = 0.7	(5) Q = 0.9
propgov	0.0738**	0.0382***	0.0436***	0.0443***	0.0342*
	(2.289)	(5.016)	(6.077)	(4.263)	(1.720)
Firm Controls					
lnassett	0.0171***	0.0064***	0.0040***	0.0013***	−0.0043***
	(12.119)	(19.073)	(12.646)	(2.943)	(−4.980)
lnlifee	−0.0206***	−0.0127***	−0.0108***	−0.0085***	−0.0018
	(−5.068)	(−13.200)	(−11.888)	(−6.465)	(−0.723)
leverage	−0.0261***	−0.0130***	−0.0110***	−0.0093***	−0.0076***
	(−27.918)	(−58.691)	(−52.671)	(−30.724)	(−13.211)
shrcr1	0.0003***	0.0002***	0.0002***	0.0003***	0.0005***
	(2.747)	(7.214)	(8.350)	(8.036)	(7.883)
Fixed Effects					
Time F.E.	Yes	Yes	Yes	Yes	Yes
Province F.E.	Yes	Yes	Yes	Yes	Yes
Industry F.E.	Yes	Yes	Yes	Yes	Yes
Constant	−0.3235***	−0.0888***	−0.0352***	0.0225**	0.1500***
	(−9.935)	(−11.544)	(−4.854)	(2.143)	(7.482)
Observations	14,629	14,629	14,629	14,629	14,629

Note: This table shows the relation between political tie and firm performance at various quantile points. The following model is estimated with a vector of controls, in particular firm size, firm age, financial leverage and shareholder concentration index: $ROA_i = \alpha_0 + \alpha_1 prop\_gov_i + \alpha_2 Controls_i + \epsilon_i$. Time dummy, province dummy and industry dummy are also considered to capture time, regional and industrial fixed effects. The definitions of all variables are shown in Appendix 1. Robust t values are reported in parentheses, clustering at firm level. Here ∗, ∗∗, and ∗∗∗ indicate significance at the 10%, 5%, and 1% levels, respectively.