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# Political connections and directors' and officers' liability insurance – Evidence from China

Ning Jia[a,1], Xinshu Mao[b,1], Rongli Yuan[c,1,*]

[a] School of Economics and Management, Tsinghua University, Beijing, PR China
[b] School of Business, Beijing Technology and Business University, Beijing, PR China
[c] Renmin Business School, Renmin University of China, Beijing, PR China

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ABSTRACT

Political connections provide firms with legal advantages and can shield managers and directors away from litigation risk. Using a sample of Chinese public firms, we find that politically connected firms have lower demand for the directors' and officers' liability insurance (D&O insurance). The association is robust to Heckman two-step selection model, an examination of market reaction to the departure of politically connected managers, a difference-in-differences analysis surrounding the hiring of a politically connected CEO, and controlling for firm performance. The effect is attenuated for firms in regions with strong market development and legal environment, but is accentuated for firms that are less socially important to the local government. Our findings highlight a substitution effect between political connections and D&O insurance in protecting managers and directors against legal liability, and advance our understanding of the key drivers of D&O insurance purchase in emerging markets.

## 1. Introduction

Directors' and officers' liability insurance ("D&O insurance") is a liability cover for company directors and managers to protect them from claims which may arise from the decisions and actions taken within the scope of their regular duties. As a critical component of corporate governance for public companies, D&O insurance has gained increasing popularity around the world. However, compared to North America and Europe where the coverage is prevalent, the demand for D&O insurance in emerging markets, in general, is substantially lower (Yuan et al., 2016; Jia and Tang, 2018).

In this paper, we seek to understand why some firms in emerging markets have little demand for D&O insurance. A distinguishing feature of the emerging markets is that political institutions play a critical role in the business sector and have a profound impact on various corporate performance and decision-making (e.g., Shleifer and Vishny, 1994, 1998; Johnson and Mitton, 2003; Faccio, 2006). Companies are eager to forge close ties with the government because such relationships are valuable – benefits include superior access to debt financing, lower cost of bank loans, lighter taxation, stronger market power, and relaxed regulatory oversight, among others (e.g., Sapienza, 2004; Khawaja and Mian, 2005; Faccio, 2010; Houston et al., 2014).

In this paper we are interested in exploring the legal benefit of political connections and its impact on corporate demand for D&O insurance. As elaborated in the next section, we expect political connections to reduce corporate litigation risk as manifested in both

* Corresponding author at: Renmin Business School, Renmin University of China, No. 59 Zhongguancun Street, Haidian District, Beijing 100872, China.
*E-mail address:* yuanrongli@rmbs.ruc.edu.cn (R. Yuan).
[1] The authors are listed in alphabetical order.

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lower *ex ante* probability of being sued as well as higher *ex post* probability of winning the lawsuit, which in turn reduce the demand for D&O insurance. We test this conjecture using a sample of Chinese firms because political connections are pervasive in China (Rajan and Zingales, 1998; Fan et al., 2007; Hung et al., 2012), and the Chinese government has both de jure and de facto control over the legal system (Lu et al., 2015). Gong (2004) and Clarke et al. (2006), among others, note that China's judiciary operates as an administrative unit within the political system, with its authority derived from the state rather than from the law. As such, firms with political ties to the government are able to enjoy legal protection – these firms are not only less likely to be sued, but even in the event of a lawsuit, they tend to receive favorable treatment from the courts and have a higher probability of winning (Firth et al., 2011; He and Su, 2013; Lu et al., 2015). Because political connections provide an "invisible" layer of protection for affiliated firms and can shield their managers and directors away from litigation risk, we therefore expect these firms to have a lower demand for D&O insurance.

Following prior studies (e.g., Fan et al., 2007), we measure a firm's political connectedness by its CEO's personal political ties. To ensure that our measure truly captures managers who enjoy superior legal protection provided by their political capital, we follow prior studies (e.g., Feng et al., 2014, 2015) and require the politically connected CEO to hold high-level position in the government, that is, he/she has served or is currently serving as a representative of the National People's Congress of China (NPC) or the Chinese People's Political Consultative Conference (CPPCC) at the national, provincial, or county level. The NPC functions as the country's legislative body and is the highest organ of the state, while the CPPCC functions as a top political advisory body made up of members from different parties and organizations as well as individuals (Feng et al., 2015). Our measure of political connections therefore captures CEOs with political capital at the highest levels in China.

Based on a sample of Chinese firms between 2005 and 2014, the baseline results support our conjecture of a negative and significant relationship between a firm's political connectedness and the likelihood of purchasing D&O insurance, after controlling for other determinants of D&O insurance coverage documented by prior studies. The economic effect is sizable: politically connected firms have a 0.7% lower probability of purchasing D&O insurance compared to non-connected firms.

One challenge in interpreting our baseline finding is that the association between political connections and the demand for D&O insurance could be driven by unobservable characteristics that are related to both a firm's political connectedness and its insurance purchase decision, which makes it hard to draw causal inferences. The baseline test is also subject to the concern that a firm's political connectedness may be non-random. We conduct a number of tests to address these endogeneity concerns. We first employ the Heckman two-step sample selection model to control for self-selection bias. We continue to observe a negative and significant impact of political connections on corporate demand for D&O insurance.

Next, we examine market reaction to the departure of politically connected managers. If political connections serve a substitution role to the D&O insurance in shielding firm insiders away from litigation risk, investors are expected to react negatively to the departure of politically connected managers for firms without D&O insurance coverage, while there should be weaker market reaction for firms with D&O insurance. Our finding supports this prediction.

As an alternative approach to mitigate the endogeneity concern, we focus on firms that gained political connections during the sample period via the hiring of a politically connected CEO, and examine changes in their demand for D&O insurance compared to a matched sample of non-connected firms. Results of the difference-in-differences analysis suggest that politically connected firms become less likely to purchase D&O insurance after they gain political connections compared to matched, non-connected firms.

We also attempt to rule out the concern that the documented relationship is driven by firm performance, that is, CEOs of better performing firms are more likely to be elected as NPC and CPPCC representatives and thus gain political connections. At the same time, these firms are intrinsically subject to lower litigation risk. To alleviate this omitted variable concern, we repeat our baseline analysis by adding an interaction term between political connections and a firm's return on assets. We do not find significant results for the interaction effect, which suggests that the relationship between political connections and demand for D&O insurance is not driven by firm performance.

Next we consider two contingencies under which the observed relationship between political connections and the demand for D&O insurance may be accentuated or attenuated. Specifically, we examine two institution-related factors – level of market development and legal environment, which vary significantly across regions in China (Wang et al., 2008; Chen et al., 2013; Fan et al., 2013; Chen et al., 2017). Highly developed markets and strong legal environment indicate higher transparency, more fair competition, and less governmental interferences in local business and legal activities, which we expect to mitigate the effectiveness of political ties in shielding affiliated firms away from litigation risk (Lu et al., 2015). Consistent with our conjecture, we find that the negative relationship between political connections and D&O insurance purchase is attenuated for firms in regions with highly developed markets and strong legal environment.

Finally, we conduct several additional tests to ensure the robustness of our findings and to explore whether acquiring political connections as opposed to buying D&O insurance is an efficient decision. We use the percentage of politically connected members among top management team, supervisors and board of directors as an alternative measure of political connections, and our main findings remain unchanged. We also examine the moderating effect of the firm's social importance to the local government and find that the impact of political connections on the demand for D&O insurance is stronger for firms that are less socially important and thus without guaranteed protection by the local government.

Our findings highlight a substitution effect of political connections for D&O insurance coverage in protecting corporate managers and directors against personal liability and litigation risk. This is consistent with Park (2018), which shows that firms increase the liability insurance coverage for their directors and officers in response to increased litigation risk. Close ties with the government appear to provide affiliated firms an "invisible" layer of legal protection that diminishes their need for D&O insurance. This finding adds to the growing literature on the determinants of D&O insurance coverage (e.g., Zou et al., 2008). Prior studies have

predominantly focused on a firm's financial characteristics and corporate governance features, but are silent on the institutional features. Findings of this study suggest that political connections are a key factor in a firm's decision to purchase D&O insurance.

Relatedly, findings of this paper enhance our understanding of the differences in the breadth of D&O coverage across countries, and particularly what drives the demand for D&O insurance in emerging markets. Zou et al. (2008) study controlling-minority shareholder incentive conflicts – a prevalent agency problem in emerging markets, and find that such conflicts are a major driver for the demand of D&O insurance. We focus on political connections, which are also a prevalent feature of companies in emerging markets. We show that political connections reduce corporate demand for D&O insurance.

Our paper also contributes to the growing literature on the value of political connections (e.g., Agrawal and Knoeber, 2001; Berkman et al., 2010). It has been shown that political connections help firms secure favorable regulatory conditions (Agrawal and Knoeber, 2001) and access to resources such as bank loans (Khawaja and Mian, 2005; Faccio, 2006; Houston et al., 2014), which ultimately increases the value of firms (Roberts, 1990; Fisman, 2001) and improves their performance (Johnson and Mitton, 2003). A number of prior studies have specifically studied the merits and costs of political connections in China. For example, Chen et al. (2011a, 2011b) find that political connections lead Chinese private firms to more concentrated corporate control structures, which allow the controlling owner to retain all of the benefits arising from connections with politicians. Liu and Tian (2013) find political connections to facilitate entrepreneurial firms' access to the IPO market. Cull et al. (2015) demonstrate that government connections are associated with substantially less severe financial constraints. Schweizer et al. (2017) find that political connections increase the likelihood of Chinese privately-owned enterprises' cross-border M&A deals, whereas trigger the cost of negative announcement returns as well as lower accounting performance. Cao et al. (2017) find politically connected CEOs have a lower probability of turnover and cause a weaker turnover-performance sensitivity than non-politically connected CEOs. Wu et al. (2012a, 2012b) find that private firms with politically connected managers outperform those without such managers, and enjoy tax benefits. Pan and Tian (2017) find that the investment expenditure of firms declines significantly after the ousting of the politicians. Our study adds to this line of research and suggests that political connections also affect corporate insurance purchase decision, a hitherto unexplored area in the literature.

The remainder of the paper proceeds as follows. Section 2 provides institutional background and hypotheses development. Section 3 describes the data and presents descriptive statistics. Section 4 reports main empirical results. Section 5 addresses the endogeneity issue. Section 6 reports the results of additional tests. Section 7 concludes the paper.

## 2. Institutional background and hypotheses development

### 2.1. The evolution of D&O insurance in China

Over the course of China's capital markets development since early 1990s, Chinese regulators have borrowed a number of governance practices from western countries in an effort to maintain a healthy and sustainable development of the capital market. To ensure that the interest of corporate stakeholders is well protected, the Chinese Company Law (Article 111) stipulates that “when a resolution of the shareholders' general meeting or of the board of directors violates the law or administrative rules and regulations or infringes the lawful rights and interests of the shareholders, the shareholders concerned shall have the right to bring a lawsuit in a people's court demanding that such illegal or infringing action be stopped.”[2] Securities Law (revised in 2005) also stipulates that directors, senior managers, or any other persons of the issuer or the listed company directly responsible for corporate misconduct shall be subject to the joint and several liabilities of compensation, except for anyone who is able to prove his exemption of any fault. Since then, corporate shareholders and other stakeholders are provided substance and procedures for seeking civil damages against directors and managers of a public company.

As a result, securities lawsuits in China were on the rise and corporate executives and directors were finding themselves subject to greater exposure to personal legal risks (Jia and Tang, 2018). Over the years, directors of a number of listed companies in China have been sued alongside the company by investors for failure of oversight duties. Examples include Guangdong Yorkpoint Science and Technology Co., Ltd. (Ticker: 000008), Fujian Jiuzhou Group Co., Ltd. (Ticker: 000653), Shanghai Dongfang Electronics Co., Ltd. (Ticker: 000682), Chongqing Changjiang River Water Transport Co., Ltd. (Ticker: 600369), Guangdong Kelon Electrical Holdings Co., Ltd. (Ticker: 000921), Daqing Lianyi Petro-Chemical Co., Ltd. (Ticker: 600065).

These litigations are real threat and have material adverse impacts on corporate executives and directors. For example, in the case of Daqing Lianyi Petro-Chemical Co., Ltd. (Ticker: 600065), the court ordered the company and its directors to pay over 8 million RMB to compensate investors for the loss (Jia and Tang, 2018). In addition to monetary loss, litigations against managers and directors have also been found to result in re-arrangement of executive compensations (Zhang and Liu, 2016) and a higher probability of subsequent managerial/director turnover (Song and Zhang, 2011).

In anticipation of ever increasing civil liability lawsuits, Article 39 of the Code of Corporate Governance sets forth that listed companies can purchase D&O insurance for their directors and officers to protect their personal assets in the event of a lawsuit. The first D&O policy in China was launched in 2002 through joint efforts by China's largest insurance company, China Ping An Insurance Co., Ltd., and Chubb Insurance Group (Jia and Tang, 2018). The D&O insurance gradually gained popularity among public companies, particularly companies with a higher (perceived) litigation risk (Zou et al., 2008).

[2] http://www.china.org.cn/english/government/207344.htm.

### 2.2. Political connections and corporate litigation risk

Reformed from a centrally planned economy, the Chinese government controls the key resources that are essential for the corporate sector (Piotroski and Zhang, 2014). A growing body of evidence suggests that close ties to the government are a source of value for firms (Fisman, 2001; Faccio, 2006). Political connections provide business opportunities, preferential access to financing, lower tax rates, government subsidies, and bailout possibilities (Fisman, 2001; Faccio, 2006; Claessens et al., 2008; Ferguson and Voth, 2008; Goldman et al., 2009). Using a sample of Chinese firms, Li et al. (2008) find that political connections have a positive effect on firm performance and help connected firms to obtain loans from banks or other state institutions. Wu et al. (2012a, 2012b) find that politically connected private firms in China enjoy significant tax benefits.

A stream of more recent studies has uncovered the value of political connections in the legal arena. The general finding is that politically connected firms enjoy lower *ex ante* litigation risk and fare better in the judicial process in the event of a lawsuit. In China, the government holds both de jure and de facto control over the legal system (Lu et al., 2015). The courts are financed by the government and the judges are government employees. Gong (2004) notes that China's judiciary operates as an administrative unit within the political system, with its authority derived from the state rather than from the law. Whether and to what degree legal institutions are used to resolve problems is a government decision. Clarke et al. (2006) assert that the legal system in China is generally considered a tool of governance and control, and is essentially the property of government. Lubman (1999) refers to the courts in China as a "bird in a cage." The courts tend to apply laws within certain policy boundaries to respond to the changing priorities of the government.

Given Chinese government's intervention in the legal system, several studies have shown that firms with close ties to the government receive explicit favoritism from the courts. These firms have better access to the bureaucratic system, which could influence a case's outcome. Consistent with these arguments, Li et al. (2008) show that politically connected firms are more likely to resort to the court for business dispute. He and Su (2013) examine 2724 publicized verdicts from Shanghai courts and find that courts favored government-related firms. Firth et al. (2011) also find evidence that politically connected Chinese firms are favored in the judicial process. Moreover, when politically connected firm loses its initial case, there is a higher likelihood that it will file and win an appeal. Lu et al. (2015) study a large sample of corporate commercial lawsuits from China and find similar evidence that firms' political connections have a positive effect on their court outcomes. Such effect is more pronounced in provinces with weaker legal institutions.

If political connections can only prevent losing a case and cannot reduce the *ex ante* likelihood of litigations, in equilibrium it may not be an optimal choice not to purchase D&O insurance. In fact, prior studies have shown that regardless of the outcome, getting involved in a lawsuit in and of itself can have material impacts on the firm. For example, based on a sample of Chinese firms, Firth et al. (2011) find evidence that corporate litigation announcements depress the stock prices of both defendant and plaintiff firms. We empirically examine the impact of corporate political connections on the likelihood of being sued and provide evidence in the Appendix. We download corporate lawsuits data for all Chinese firms from the Chinese Law Research Database.[3] We measure litigations in three ways: (1) *ProbLit*, a dummy variable for the probability of litigation that equals 1 if a firm is sued in a given year, and 0 otherwise; (2) *LitCount*, the number of lawsuits that a firm is subject to in a given year, and (3) *LitAmount*, total monetary amount at stake in all lawsuits for a firm in a given year. As shown in Table 1, we find consistent evidence across three measures that politically connected firms are indeed subject to lower *ex ante* litigation risk – they incur lower probability of being sued, fewer lawsuits in a given year, and these lawsuits tend to be more minor in nature.

### 2.3. Hypotheses development

The two links made in prior research – the link between litigation risk and the demand for D&O insurance, and the link between political connections and litigation risk – which are discussed in Section 2.1 and 2.2 respectively, provide a basis for our prediction regarding the relationship between political connections and the demand for D&O insurance. If political connections effectively shield directors and managers away from litigation risk, a firm's close tie to the government is expected to reduce its demand for the D&O insurance.

It is worth noting that some prior studies view political connections as a double-edged sword because government officials and bureaucrats may engage in rent-seeking behaviors (Krueger, 1974; Faccio, 2006; Boubakri et al., 2008). For example, Fan et al. (2007) find evidence that Chinese firms with politically connected CEOs underperform relative to those without connections based on 3-year post-IPO stock returns. Chen et al. (2011a, 2011b) find that political connections significantly reduce investment efficiency in Chinese SOEs. However, even if the government engages in rent-seeking behaviors that increase the likelihood of connected firms' being sued by disgruntled investors, their chance of losing the case is still low because the government has incentives to protect these firms, thereby leading to a lower demand for the D&O insurance. Based on the above arguments, we state our main hypothesis as follows:

**Hypothesis 1.** Politically connected firms are less likely to purchase D&O insurance compared to non-connected firms.

We also consider two moderating factors that may affect the relation between corporate political connections and the demand for D&O insurance. The first contextual variable that we examine is market development of the region in which the firm resides. Cull and

[3] This database is provided by CSMAR.

**Table 1**
Political connections and the probability of being sued.

| | *ProbLit* | *LitCount* | *LitAmount* |
|---|---|---|---|
| | (1) | (2) | (3) |
| *PoliticalConnection* | −0.141** | −0.183*** | −0.013** |
| | (−2.48) | (−2.65) | (−2.12) |
| *FirmSize* | −0.123*** | −0.409*** | −0.019*** |
| | (−4.27) | (−13.29) | (−6.63) |
| *Leverage* | 1.501*** | 4.412*** | 0.176*** |
| | (8.78) | (25.79) | (9.69) |
| *ROA* | −0.531 | 0.980* | −0.065 |
| | (−0.92) | (1.77) | (−1.19) |
| *Growth* | 0.043 | −0.118 | 0.003 |
| | (0.60) | (−1.63) | (0.43) |
| *Vol* | 0.326 | 0.609 | 0.004 |
| | (0.32) | (1.39) | (0.06) |
| *RevSD* | 0.026 | 0.079 | 0.002 |
| | (0.57) | (1.51) | (0.37) |
| *CFOSD* | 1.371*** | −0.188 | 0.167*** |
| | (2.59) | (−0.30) | (3.01) |
| *BoardIndependence* | 0.127 | −1.453** | 0.018 |
| | (0.25) | (−2.40) | (0.35) |
| *Top1* | −0.007*** | −0.003 | −0.001*** |
| | (−3.41) | (−1.23) | (−2.98) |
| *SOE* | −0.045 | −0.289*** | −0.007 |
| | (−0.84) | (−4.67) | (−1.13) |
| *Constant* | 0.746 | 5.377*** | 0.193*** |
| | (1.22) | (7.75) | (3.15) |
| Year and Industry FEs | Included | Included | Included |
| N | 7867 | 7867 | 7867 |
| $Chi^2$ | 247.30 | 137.16 | 315.13 |
| Pseudo $R^2$/adj. $R^2$ | 0.08 | 0.14 | 0.20 |

This table reports regression results of lawsuits on a firm's political connectedness. *ProbLit* is a dummy variable for the probability of litigation that equals 1 if a firm is sued in a given year, and 0 otherwise. *LitCount* is the number of lawsuits that a firm is subject to in a given year. *LitAmount* is the total RMB amount involved in all lawsuits for a firm in a given year divided by total assets. *Growth* is a firm's annual sales growth. *RevSD* is the standard deviation of sales growth for a firm in the last five years. *CFOSD* is the standard deviation of operating cash flow for a firm in the last five years. Definitions of other variables are provided in Table 2. *t*-statistics based on robust standard errors and clustering at the firm level are displayed in parentheses. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

Xu (2005) find that in regions with less-developed markets, firms are more likely to have politically connected CEOs and directors in order to help gain administrative and legal advantage. We therefore posit that the effect of political connection on D&O insurance coverage is weaker for firms in regions with more-developed markets.

**Hypothesis 2.** The effect of political connection on D&O insurance coverage is weaker for firms in regions with more-developed markets.

The second contextual variable that we examine is legal environment of the region in which the firm resides. All provinces adhere to the constitution and the national laws, which are issued by the National People's Congress. However, there are regional-differences in the level of enforcement practices (Wang et al., 2008). Lu et al. (2015) find supporting evidence that court advantage of politically connected firms is larger in provinces with weaker legal institutions. We therefore expect the relationship between political connections and D&O insurance coverage to be weaker in regions with strong legal environment.

**Hypothesis 3.** The effect of political connection on D&O insurance coverage is weaker in regions with strong legal environment.

## 3. Sample, measurements and descriptive statistics

### 3.1. Sample selection

Our sample is initially composed of all firms listed on the Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) from 2005 to 2014. We choose year 2005 as the beginning of our sample period because certain data required for subsequent empirical analyses (e.g., management ownership data and resume information) are not available prior to 2005. The China Securities Regulatory Commission (CSRC) mandates public firms to disclose the biographies and curriculum vitae of senior executives in their annual reports. Disclosed information includes demographic and educational background, current and former work experience, as well as rank in China's political system (Chen et al., 2017). After collecting a CEO's resume from the China Stock Market Accounting

Research (CSMAR) database, we cross-validate each CEO's political position with disclosure made on the official websites of NPC, Provincial People's Congress, CPPCC, and Provincial Political Consultative Conference.

We manually collect information on corporate purchase of D&O insurance from the annual reports and disclosed minutes of boards' and shareholders' meetings, because the CSRC requires that any purchase of D&O insurance should be proposed by the board of directors and approved at shareholders' meetings.[4] Financial information as well as corporate governance data, including data on board size, independent directors, and state ownership are also retrieved from the CSMAR database.

We exclude financial firms (e.g., banks, insurance companies, and investment trusts) because their financial statements tend to be influenced by factors unique to their industry. After further excluding firms that do not have available data for the calculation of control variables, our final sample consists of 8783 firm-year observations, representing 227 firms with D&O insurance coverage.

### 3.2. Variable measurements

#### 3.2.1. Dependent variable: D&O insurance purchase

Consistent with prior studies (e.g., Yuan et al., 2016; Jia and Tang, 2018), our measure of a firm's demand for D&O insurance is a dummy variable that equals 1 if a firm purchases D&O insurance in a given year, and 0 otherwise.

#### 3.2.2. Main independent variable: Political connectedness

Following prior studies (e.g., Fan et al., 2007; Lu et al., 2015), we measure a firm's political connectedness by its CEO's personal political ties. To ensure that our measure truly captures CEOs who are able to enjoy legal protection provided by their political capital, we follow Feng et al. (2014, 2015) and require politically connected CEOs to hold high-level positions in the government; that is, our main variable of interest *PoliticalConnetion* is a dummy variable that equals 1 if the CEO has served or is currently serving as a member of the National People's Congress of the China (NPC) or the Chinese People's Political Consultative Conference (CPPCC), both of which are the country's top political advisory body (Shambaugh, 2009; Feng et al., 2014, 2015).

The NPC is the highest organ of state power. It decides on the choice of the Premier of the State Council upon nomination by the President of China, and on the choice of the Vice-Premiers, State Councilors, and Ministers in charge of ministries or commissions upon nomination by the Premier. It also elects the President of the Supreme People's Court and the Procurator-General of the Supreme People's Procuratorate. The CPPCC is an important institution of political consultation, democratic supervision and participation in the deliberation and administration of state affairs. It conducts consultations before policy decisions are made, while the NPC votes on policy decisions after the consultations are finished and the government carries them out after policy decisions are made. Thus, members of NPC and CPPCC are considered high-level government officials who have higher status and power compared to other levels of government officials.[5]

We choose a CEO's personal political tie over state ownership as the main measure of political connectedness for several reasons. First, in transition and developing economies, private company owners also have strong motivations to participate in politics to gain political capital (Li et al., 2006). In fact, prior studies have shown that compared to private firms, SOEs are less likely to have CEOs who are members of the NPC or CPPCC. This is consistent with the findings of prior studies that becoming a member of the NPC and/or CPPCC is a major means through which this is achieved (e.g., Wright, 2010; Chen and Dickson, 2010; Feng et al., 2015). Second, state ownership is likely to be a more noisy measure of political connectedness in the context of this study. For example, due to social equity pressures, SOEs have been found to pay less cash compensation and more non-cash benefits to executives, possibly to avoid criticism from the public (Li et al., 2007; Firth et al., 2007; Adithipyangkul et al., 2011). As such, state ownership may also capture superior non-cash executive benefits that include D&O insurance coverage.

#### 3.2.3. Control variables

We control for an array of firm characteristics that have been shown to affect the demand for D&O insurance (e.g., Core, 1997; Zou et al., 2008; Yuan et al., 2016): *FirmSize* is the natural logarithm of book value of total assets; *Leverage* is the ratio of book value of debts divided by book value of total assets; *BTM* is the book-to-market ratio of a firm in a given year; *ROA* is the ratio of net income divided by the book value of total assets; *Vol* is the standard deviation of daily stock return; *MgmtOwnership* is the number of shares held by the top management team divided by total shares issued; *BoardIndependence* is the percentage of independent directors on a board; *Crosslist* is a dummy variable that equals 1 if a firm is cross-listed in an overseas stock exchange in a given year and 0 otherwise; *Top1* is the percentage of shares owned by the largest shareholder; *MKTScore* is provincial market development index provided by Fan et al. (2011); *LawScore* is provincial legal environment index provided by Fan et al. (2011); and *SOE* is a dummy variable that equals 1 if a firm's ultimate controlling shareholder is the state and 0 otherwise. Moreover, we add year and industry dummies to control for the year and industrial fixed effects. Detailed variable definitions are provided in Table 2.

[4] It is worth noting that we only regard the years with actual company disclosure of D&O insurance purchase as treatment observations. That is, if a company explicitly discloses D&O insurance purchase in 2008 and 2010, but not in 2009, we only treat year 2008 and 2010 as treatment observations. Based on insights from industry practitioners and being consistent with Yuan et al. (2016), we do not make the assumption that when a company begins to buy D&O insurance, it will continue to do so in all future years.

[5] It is worth noting that even if a CEO has served or is serving as a lower level government official who has certain influence on China's legal system but is classified as non-connected given our definition, it should only bias against finding a significant difference in the propensity of purchasing D&O insurance between connected and non-connected firms.

**Table 2**
Definitions of variables.

| Variables | Definitions |
|---|---|
| Dependent variable | |
| *D&O* | A dummy variable that equals 1 if a firm purchases D&O insurance in a given year and 0 otherwise |
| Independent variables | |
| *PoliticalConnection* | A dummy variable that equals 1 if a CEO is politically connected (that is he/she has served or is currently serving as a representative of the National People's Congress (NPC) or the Chinese People's Political Consultative Conference (CPPCC) at the national, provincial or county level), and 0 otherwise |
| *PoliticalConnection_Pencentage* | The percentage of politically connected members among top management team, supervisors and board directors combined |
| *BoardIndependence* | The percentage of independent directors on a board |
| *BTM* | The book-to-market ratio of a firm in a given year, that is, book value of equity/(market price at the end of fiscal year * the number of shares outstanding) |
| *CFOSD* | The standard deviation of operating cash flow for a firm in the last five years |
| *Crosslist* | |
| *Emp* | A dummy variable that equals 1 if a firm is cross-listed in an overseas stock exchange in a given year and 0 otherwise |
| *FirmSize* | A dummy variable that equals 1 if the firm's natural logarithm of total employees is above the median among all firms in that region, and 0 otherwise |
| *Growth* | |
| *LawScore* | The natural logarithm of book value of total assets<br>The percentage change in total revenues between two consecutive years<br>Provincial legal environment index provided by Fan et al. (2011) |
| *Leverage* | The ratio of book value of debts divided by book value of total assets |
| *LitAmount* | The total RMB amount involved in all lawsuits for a firm in a given year divided by total assets |
| *LitCount* | The number of lawsuits that a firm is subject to in a given year |
| *MgmtOwnership* | The number of shares held by the top management team divided by total shares issued |
| *MKTScore* | Provincial market development index provided by Fan et al. (2011) |
| *QNPCrep* | The ratio between the number of NPC representatives (at the national level) in a province and the total number of NPC representatives at the national level in China |
| *QPROVrep* | The ratio between the number of NPC and CPPCC representatives (at the provincial level) in a province and the total number of provincial NPC and CPPCC representatives in China |
| *ProbLit* | A dummy variable for the probability of litigation that equals 1 if a firm is sued in a given year, and 0 otherwise |
| *RevSD* | The standard deviation of sales growth for a firm in the last five years |
| *ROA* | Net income divided by the book value of total assets |
| *ROA_Dummy* | A dummy that equals 1 if a firm's ROA is above the industry median in a year, and 0 otherwise |
| *SOE* | A dummy variable that equals 1 if a firm's ultimate controlling shareholders is the state and 0 otherwise |
| *Subsidies* | A dummy variable that equals 1 if the firm's annual local government subsidies as a percentage of its annual sales is above the median among all firms in that region, and 0 otherwise |
| *Top1* | The percentage of shares owned by the largest shareholder |
| *Vol* | Stock return volatility, which is the standard deviation of daily stock return |

This table contains the definitions of variables used in our analysis. All continuous independent variables are winsorized at the 1st and 99th percentiles.

### 3.2.4. Summary statistics

Table 3 Panel A presents the sample distribution by year. As shown, observations are distributed fairly evenly across years without significant clustering. Panel B presents the summary statistics of variables used in the baseline analysis. To minimize the effect of outliers, we winsorize all continuous independent variables at the 1st and 99th percentiles. The mean of *D&O* is 2.5%. The mean of *PoliticalConnection* is 30.9%. As for the control variables, on average the managerial ownership is 3.1%, 36.2% of directors on a board is independent directors, 1.6% of our sample is cross-listed, the largest shareholder owns approximately 36.5% of total shares, and 61.3% of sample firms are state-owned. Firms in our sample have an average size of 21.787, an average leverage of 0.511, an average book-to-market ratio is 41.9%, an average return on assets of 0.034, and an average stock volatility of 0.031. In addition, the mean provincial market development index during our sample period is 6.805 and the mean provincial legal environment index is 10.024.

## 4. Baseline empirical results

To examine how a firm's political connections affect its demand for D&O insurance, we estimate the following probit model:

$$D\&O_{i,t+1} = \beta_0 + \beta_1 PoliticalConnection_{i,t} + \sum_{q=2}^{m} \beta_q (\text{qth } ControlVariable_{i,t}) + Year + Industry + \varepsilon_{i,t} \quad (1)$$

where *i* indexes firm and *t* indexes time. The dependent variable *D&O* is a dummy variable that equals 1 if a firm purchases D&O insurance in a given year, and 0 otherwise. The main variable of interest *PoliticalConnection* is whether a firm is politically connected in a given year. *ControlVariable* is a vector of firm characteristics that could affect a firm's D&O insurance purchasing decision as discussed in Section 3.3.3. To mitigate potential endogeneity, we regress D&O measure in year $t + 1$ on the values of political connections and other explanatory variables in year *t*. Standard errors are clustered at the firm level.

Table 4 presents the regression results. Column (1) only includes the key variable of interest and an array of basic firm characteristics, whereas column (2) also includes corporate governance features. Column (3) presents the results of the full model that also includes firm ownership type. In all three columns, the coefficient estimate on the key variable of interest *PoliticalConnection* is

**Table 3**
Sample distribution and descriptive statistics.

Panel A: Sample distribution

| Year | *PoliticalConnection* = 0 | *PoliticalConnection* = 1 | Total Observations |
|---|---|---|---|
| 2005 | 819 | 34 | 853 |
| 2006 | 805 | 13 | 818 |
| 2007 | 772 | 31 | 803 |
| 2008 | 856 | 32 | 888 |
| 2009 | 891 | 23 | 914 |
| 2010 | 876 | 18 | 894 |
| 2011 | 913 | 13 | 926 |
| 2012 | 930 | 26 | 956 |
| 2013 | 872 | 21 | 893 |
| 2014 | 822 | 16 | 838 |
| Total | 8556 | 227 | 8783 |

Panel B: Descriptive statistics

| Variable | Obs | Mean | Median | Std | Min | Max |
|---|---|---|---|---|---|---|
| *D&O* | 8783 | 0.025 | 0.000 | 0.155 | 0.000 | 1.000 |
| *PoliticalConnection* | 8783 | 0.309 | 0.000 | 0.462 | 0.000 | 1.000 |
| *FirmSize* | 8783 | 21.787 | 21.668 | 1.153 | 19.068 | 25.827 |
| *Leverage* | 8783 | 0.511 | 0.520 | 0.186 | 0.051 | 1.180 |
| *BTM* | 8783 | 0.419 | 0.358 | 0.274 | −0.422 | 2.964 |
| *ROA* | 8783 | 0.034 | 0.029 | 0.052 | −0.346 | 0.239 |
| *Vol* | 8783 | 0.031 | 0.029 | 0.022 | 0.003 | 1.636 |
| *MgmtOwnership* | 8783 | 0.031 | 0.000 | 0.099 | 0.000 | 0.681 |
| *BoardIndependence* | 8783 | 0.362 | 0.333 | 0.050 | 0.091 | 0.714 |
| *Crosslist* | 8783 | 0.016 | 0.000 | 0.125 | 0.000 | 1.000 |
| *Top1* | 8783 | 36.479 | 34.589 | 13.722 | 9.887 | 74.976 |
| *MKTScore* | 8783 | 6.805 | 6.890 | 1.600 | 0.000 | 9.950 |
| *LawScore* | 8783 | 10.024 | 8.180 | 5.287 | 0.180 | 19.890 |
| *SOE* | 8783 | 0.613 | 1.000 | 0.487 | 0.000 | 1.000 |

This table reports the sample distribution by year (in Panel A) and descriptive statistics of variables used in the baseline analysis (in Panel B). Definitions of variables are provided in Table 2.

significantly negative, which supports our conjecture that politically connected firms have an advantage in corporate litigations, thereby leading to a lower demand for the D&O insurance. The economic effect is significant: the magnitude of the coefficient estimate suggests that politically connected firms have a 0.7% lower probability of purchasing the D&O insurance than non-connected firms.

Among control variables, large firms and cross-listed firms are more inclined to purchase D&O insurance, which are consistent with the findings of prior studies (e.g., Zou et al., 2008; Jia and Tang, 2018).

## 5. Endogeneity

A major concern of our baseline results is endogeneity. For example, a firm's political connectedness may be non-random and this may cause a self-selection bias. It is also possible that omitted variables that affect both political connectedness and D&O insurance purchase decision drive our results. Furthermore, there is a reverse causality concern that D&O insurance purchase decision may affect a firm's likelihood of obtaining political connections.

In addition to using lagged values of political connection, in this section we further address the endogeneity using several alternative approaches, including the Heckman (1979) two-step sample selection model, an examination of market reaction to the departure of politically connected managers, an examination of how demand for D&O insurance changes after firm hires of a politically connected CEO, and adding the interaction term with firm performance.[6]

### 5.1. Heckman two-step sample selection model

A firm's political connectedness may be non-random and this may cause a self-selection bias. To address this concern we adopt the

[6] We also tried firm fixed effects specification to address the endogeneity issue. However, we do not get the expected results. A plausible reason is that the percentage of treatment observations in our sample is relatively low (i.e., only 227 firm-year observations involve D&O insurance coverage) and sticky across years, therefore firm fixed effects analysis may lack the power to detect significant results. We acknowledge this as a limitation of the study.

**Table 4**
Political connections and D&O insurance coverage.

| | *Prob(D&O = 1)* | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| *PoliticalConnection* | −0.167** | −0.142** | −0.138** |
| | (−2.46) | (−2.10) | (−2.05) |
| *Marginal effect* | −0.008** | −0.007** | −0.007** |
| *FirmSize* | 0.227*** | 0.186*** | 0.184*** |
| | (6.10) | (4.88) | (4.72) |
| *Leverage* | 0.198 | 0.266 | 0.266 |
| | (0.83) | (1.10) | (1.10) |
| *BTM* | 0.225 | 0.104 | 0.101 |
| | (1.57) | (0.75) | (0.73) |
| *ROA* | −0.479 | −0.438 | −0.421 |
| | (−0.65) | (−0.60) | (−0.57) |
| *Vol* | −1.548 | −2.174 | −2.174 |
| | (−0.78) | (−0.99) | (−0.98) |
| *MgmtOwnership* | | −0.159 | −0.116 |
| | | (−0.36) | (−0.25) |
| *BoardIndependence* | | −0.171 | −0.162 |
| | | (−0.29) | (−0.27) |
| *Crosslist* | | 0.869*** | 0.867*** |
| | | (5.88) | (5.86) |
| *Top1* | | 0.001 | 0.001 |
| | | (0.32) | (0.26) |
| *MKTScore* | | 0.011 | 0.011 |
| | | (0.23) | (0.23) |
| *LawScore* | | 0.002 | 0.002 |
| | | (0.14) | (0.15) |
| *SOE* | | | 0.029 |
| | | | (0.38) |
| *Constant* | −6.710*** | −5.829*** | −5.803*** |
| | (−8.75) | (−7.29) | (−7.20) |
| Year and Industry FEs | Included | Included | Included |
| N | 8783 | 8783 | 8783 |
| $Chi^2$ | 173.95 | 225.39 | 225.67 |
| Pseudo $R^2$ | 0.10 | 0.12 | 0.12 |

Heckman two-step sample selection model. In the first step, we run a probit regression of the political connection dummy variable *PoliticalConnection* on a comprehensive list of observable characteristics (i.e., all control variables in our baseline regression). Heckman's estimator requires additional exogenous variables that are correlated with a firm's likelihood of having political connections (i.e., the CEO becomes NPC and CPPCC representative), but are uncorrelated with the likelihood of D&O insurance coverage. We choose provincial NPC and CPPCC quota as two potential instruments. The rationale is that in regions with greater NPC and CPPCC quota, local firm's CEO have a greater chance of becoming NPC and CPPCC representatives.[7] However, NPC and CPPCC quota are unlikely to be related to D&O insurance purchase decision. Specifically, we define *QNPCrep* as the ratio between the number of NPC representatives (at the national level) in a province and the total number of NPC representatives at the national level in China, and *QPROVrep* as the ratio between the number of NPC and CPPCC representatives (at the provincial level) in a province and the total number of provincial NPC and CPPCC representatives in China.

We also include year and industry dummies to capture any time-invariant or industry-specific differences. Results of the first-step regression are reported in column (1) of Table 5. Consistent with our conjecture, the coefficient estimate on *QPROVrep* is significant and positive, suggesting that CEOs of firms in regions with more CPPCC quota have a greater chance of becoming representatives. In addition, larger firms, profitable firms, and firms with larger managerial ownership are more likely to have CEOs who are members of the NPC or CPPCC. In contrast, cross-listed firms, firms with high leverage and shareholdings held by the largest shareholders are less likely to have CEOs who are delegated to the NPC or CPPCC. It is also worth noting that compared to private firms, SOEs are less likely to have CEOs who are members of the NPC or CPPCC. This is consistent with the findings of prior studies that in transition and developing economics, private company owners often have strong motivations to participate in politics to gain political capital (Li et al., 2006). Becoming a member of the CPPCC is a major means through which this is achieved (e.g., Wright, 2010; Chen and Dickson, 2010; Feng et al., 2015).

The inverse Mills ratio (IMR) generated from the probit model is then included in the second-step model to control for the potential sample selection bias. The specification of the second-step model is the same as Eq. (1) described in Section 4. The results

[7] The allocation of NPC and CPPCC quota is based on local population and is unrelated to the number of firms in the region. It alleviates the concern that more quota is allocated to regions with more firms, which leads to more intense competition for the NPC and CPPCC positions.

**Table 5**
Heckman two-step selection model.

| | *Prob(PoliticalConnection = 1)* | *Prob(D&O = 1)* |
|---|---|---|
| | (1) | (2) |
| *PoliticalConnection* | | −0.141** |
| | | (−2.10) |
| *FirmSize* | 0.304*** | −0.171 |
| | (16.08) | (−1.21) |
| *Leverage* | −0.491*** | 0.832** |
| | (−4.54) | (2.50) |
| *BTM* | 0.036 | 0.055 |
| | (0.48) | (0.39) |
| *ROA* | 1.155*** | −1.862** |
| | (3.27) | (−2.07) |
| *Vol* | 0.756 | −2.797 |
| | (1.13) | (−1.28) |
| *MgmtOwnership* | 0.967*** | −1.162** |
| | (6.10) | (−2.16) |
| *BoardIndependence* | −0.058 | −0.188 |
| | (−0.20) | (−0.31) |
| *Crosslist* | −0.381*** | 1.308*** |
| | (−3.11) | (5.63) |
| *Top1* | −0.002 | 0.003 |
| | (−1.42) | (0.98) |
| *MKTScore* | 0.031 | −0.104* |
| | (1.23) | (−1.81) |
| *LawScore* | −0.045*** | 0.069*** |
| | (−6.48) | (2.63) |
| *SOE* | −0.373*** | 0.443** |
| | (−10.77) | (2.40) |
| *QNPCrep* | 1.556 | |
| | (1.19) | |
| *QPROVrep* | 10.651*** | |
| | (3.78) | |
| *IMR* | | −1.621*** |
| | | (−2.67) |
| *Constant* | −6.312*** | 2.816 |
| | (−16.27) | (0.85) |
| Year and Industry FEs | Included | Included |
| N | 8783 | 8783 |
| $Chi^2$ | 903.29 | 229.31 |

This table reports regression results of the likelihood of D&O insurance coverage on a firm's political connectedness using Heckman two-step selection model. Definitions of variables are provided in Table 2. *t*-statistics based on robust standard errors and clustering at the firm level are displayed in parentheses. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

are reported in column (2) of Table 5. We continue to observe a significantly negative coefficient on the main variable of interest *PoliticalConnection*. The coefficient of the IMR is negative and significant. This implies that the unobserved factors that motivate firms to appoint politically connected CEOs are negatively related to D&O insurance purchase.

### 5.2. Market reaction to the departure of politically connected managers

In this section we investigate market reaction to the departure announcements of politically connected managers by firms with and without D&O insurance coverage, respectively. A short-window event study is less likely to suffer from the omitted correlated variable problem (Chen et al., 2016) and thus can provide corroborative evidence to support our baseline findings.

To the extent that political connections play a substitution role to D&O insurance in shielding managers and directors away from litigation risk, we would expect a negative market reaction to the announcement of the departure of politically connected managers for firms without D&O insurance coverage. In contrast, market should react less strongly to such announcements made by firms with D&O insurance coverage.

We manually collected the departure announcements of politically connected managers from company websites and other online sources. We carefully checked whether the departure announcement is associated with potentially confounding events, including firm's earnings announcements, profit distributions, mergers and acquisitions, share issues, related party transactions, asset write-downs, because these concurrent announcements make it difficult to observe a clean market reaction to the departure announcements. After excluding potentially confounding announcements, we obtain 665 announcements.

We use the market model to calculate cumulative abnormal return (CAR). The estimation window is 180 days $[-200, -20]$. We

**Table 6**
Market reaction to the departure of politically connected managers.

| Panel A: Full sample | | | |
|---|---|---|---|
| Event windows | N | Mean | Median |
| [−1,0] | 665 | −0.0005*** | −0.0001*** |
| | | (−2.81) | (−3.38) |
| [0,1] | 665 | −0.0008*** | −0.0002*** |
| | | (−4.43) | (−4.55) |
| [−1,1] | 665 | −0.002*** | −0.0004*** |
| | | (−5.27) | (−4.61) |

| Panel B: firms without D&O coverage | | | |
|---|---|---|---|
| Event windows | N | Mean | Median |
| [−1,0] | 642 | −0.0005*** | −0.0001*** |
| | | (−2.84) | (−3.29) |
| [0,1] | 642 | −0.0008*** | −0.0003*** |
| | | (−4.34) | (−4.53) |
| [−1,1] | 642 | −0.0021*** | −0.0004*** |
| | | (−5.25) | (−4.53) |

| Panel C: Firms with D&O coverage. | | | |
|---|---|---|---|
| Event windows | N | Mean | Median |
| [−1,0] | 23 | −0.0003 | 0.0000 |
| | | (−0.21) | (−0.58) |
| [0,1] | 23 | −0.0003 | −0.0000 |
| | | (−0.31) | (−0.18) |
| [−1,1] | 23 | −0.001 | −0.0000 |
| | | (−0.59) | (−0.58) |

This table reports market reaction to the announcement of departure of politically connected managers. Panel A reports results based on the full sample. Panel B and Panel C report the results separately for firms without D&O insurance coverage and with D&O insurance coverage in the year prior to the announcement, respectively. The market model is used and the estimation window is 180 days [−200, −20]. *t*-statistics based on robust standard errors and clustering at the firm level are displayed in parentheses. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

examine three event windows, [−1,0], [0,+1], and [−1,+1]. The daily stock returns are retrieved from the CSMAR database. Panel A of Table 6 presents the cross-sectional means and medians of CARs (value-weighted average market return adjusted) for three event windows surrounding departure announcement dates. The results show that the CARs of full sample are significantly negative at the 1% level, suggesting that stock prices react negatively when investors learn that firms have dismissed their politically connected managers. This finding is consistent with prior studies (e.g., Fisman, 2001) who document a significantly negative market reaction for a decline in political connections.

We then examine whether investors react differently to the departure announcements of insured and uninsured firms. Based on whether or not the firm purchased D&O insurance in the prior year, we divided the 665 announcements into two groups, 642 announcements made by uninsured firms and 23 announcements made by insured firms. Panels B and C of Table 6 report the cross-sectional means and medians of CARs for insured and uninsured firms, respectively. CARs are negative and significant at the 1% level for uninsured firms. In contrast, for insured firms, CARs in [−1,0], [0,+1], and [−1,+1] window are insignificant.[8]

In summary, the markets react negatively to the departure announcements of politically connected mangers, and more importantly, the reaction is less strong to the announcement made by firms with D&O insurance coverage, suggesting that investors are less concerned about firms losing its legal protection provided firm's political connections for firms that are covered by D&O insurance.

### 5.3. DiD analysis

During the sample period of this study, a number of firms gained political connections by hiring a CEO who serves as the NPC or

[8] Because there are only 23 announcements made by non-D&O firms, we conduct a robustness test by randomly excluding 23 announcements from the sample. Untabulated results suggest that there are no longer observable differences between the two groups (except for one event window), which suggests the results of this test, albeit limited sample size, can provide some insights. Nevertheless, we acknowledge the sample limitation and caution the readers about this caveat.

**Table 7**
Change in demand for D&O insurance surrounding the hiring of a politically connected CEO.

| | *Prob(D&O = 1)* | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| *ConnectedFirm* | −0.469 | −0.572** | −0.558** |
| | (−1.62) | (−1.99) | (−1.99) |
| *Post* | 0.457 | 0.451 | 0.659** |
| | (1.62) | (1.57) | (2.31) |
| *ConnectedFirm*Post* | −0.740* | −0.825* | −0.859* |
| | (−1.86) | (−1.95) | (−1.71) |
| *FirmSize* | | 0.318** | 0.149 |
| | | (2.53) | (0.77) |
| *Leverage* | | −0.455 | −0.153 |
| | | (−0.68) | (−0.23) |
| *BTM* | | −1.149** | −1.378** |
| | | (−2.25) | (−2.50) |
| *ROA* | | −2.427 | −2.089 |
| | | (−1.08) | (−0.79) |
| *Vol* | | 7.680 | 3.714 |
| | | (0.59) | (0.32) |
| *MgmtOwnership* | | | −1.509 |
| | | | (−1.07) |
| *BoardIndependence* | | | 0.969 |
| | | | (0.51) |
| *Crosslist* | | | 1.030** |
| | | | (1.99) |
| *Top1* | | | 0.016* |
| | | | (1.68) |
| *MKTScore* | | | 0.910*** |
| | | | (2.86) |
| *LawScore* | | | −0.097 |
| | | | (−1.41) |
| *SOE* | | | 0.003 |
| | | | (0.01) |
| *Constant* | −4.958*** | −11.002*** | −13.616*** |
| | (−28.03) | (−4.60) | (−3.61) |
| Year and Industry FEs | Yes | Yes | Yes |
| N | 1031 | 1013 | 821 |
| $Chi^2$ | 390.2 | 516.9 | 355.4 |

This table reports the results of change in corporate demand for D&O insurance after the firm hires a politically connected CEO. We identify firms that gained political connections (i.e., hired a politically connected CEO) during the sample period (i.e., treatment firms), and match each treat firm with a control firm that does not have political connections throughout the sample period. Definitions of variables are provided in Table 2. *t*-statistics based on robust standard errors and clustering at the firm level are displayed in parentheses. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

CPPCC representatives. We therefore capitalize on this event and conduct a change analysis to examine how the firm's demand for D&O insurance changes after it acquires political connections.

Operationally, for each firm that gained political connections during the sample period (i.e., treatment firm), we match it with a control firm that does not have political connections throughout the sample period. The control sample is constructed by choosing non-politically-connected firms from the same industry as the politically connected firms, with similar size (i.e., size difference no more than 30% of the size of the politically connected firm), and with the same type of ownership (SOEs or non-SOEs).

After we identify treatment and control firms, we consider a three-year window [−3, +3] around the year of gaining political connection (i.e., year 0 is the event year) and conduct a difference-in-differences (DiD) analysis. Requiring each firm to have at least one usable observation before and after the year of political connection, our final sample includes 821 observations for the DiD analysis, representing 100 politically connected firms and 100 matched non-politically-connected firms.

To perform a regression DiD analysis, we add the following two dummy variables and the interaction term between them into model (1) – *ConnectedFirm*, a dummy variable that equals 1 if a firm is politically connected and 0 otherwise; and *Post*, a dummy variable that equals1 if the observation is on or after the year of gaining political connections and 0 otherwise. *ConnectedFirm*Post* is the interaction item that picks up the changes in the propensity to purchase D&O insurance after firms gain political connection (via hiring a politically connected CEO) relative to the matched non-connected firms.

The results of the DiD analysis are reported in Table 7. The coefficient on *ConnectedFirm*Post* is negative and statistically significant, suggesting that compared to non-politically connected firms, politically connected firms are less likely to purchase D&O insurance after they gain political connections via hiring a politically connected CEO.

**Table 8**
Impact of political connections on D&O insurance coverage and the moderating effect of firm performance.

Panel A: ROA level

| | *Prob(D&O = 1)* | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| *PoliticalConnection* | −0.201** | −0.166** | −0.162** |
| | (−2.47) | (−2.02) | (−1.98) |
| *FirmSize* | 0.226*** | 0.185*** | 0.183*** |
| | (6.08) | (4.86) | (4.70) |
| *Leverage* | 0.206 | 0.273 | 0.274 |
| | (0.87) | (1.13) | (1.13) |
| *BTM* | 0.232 | 0.110 | 0.107 |
| | (1.62) | (0.79) | (0.77) |
| *ROA* | −0.684 | −0.581 | −0.568 |
| | (−0.83) | (−0.71) | (−0.70) |
| *PoliticalConnection*ROA* | 0.964 | 0.673 | 0.695 |
| | (0.76) | (0.53) | (0.55) |
| *Vol* | −1.486 | −2.135 | −2.133 |
| | (−0.75) | (−0.98) | (−0.97) |
| *MgmtOwnership* | | −0.164 | −0.120 |
| | | (−0.37) | (−0.26) |
| *BoardIndependence* | | −0.168 | −0.160 |
| | | (−0.28) | (−0.27) |
| *Crosslist* | | 0.866*** | 0.863*** |
| | | (5.83) | (5.81) |
| *Top1* | | 0.001 | 0.001 |
| | | (0.34) | (0.27) |
| *MKTScore* | | 0.010 | 0.010 |
| | | (0.20) | (0.21) |
| *LawScore* | | 0.002 | 0.002 |
| | | (0.17) | (0.18) |
| *SOE* | | | 0.030 |
| | | | (0.40) |
| *Constant* | −6.694*** | −5.812*** | −5.784*** |
| | (−8.73) | (−7.27) | (−7.18) |
| Year and Industry FEs | Included | Included | Included |
| N | 8783 | 8783 | 8783 |
| $Chi^2$ | 174.93 | 227.82 | 228.16 |
| Pseudo $R^2$ | 0.10 | 0.12 | 0.12 |

Panel B: ROA Indicator

| | *Prob(D&O = 1)* | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| *PoliticalConnection* | −0.220** | −0.198** | −0.195** |
| | (−2.32) | (−2.06) | (−2.03) |
| *FirmSize* | 0.230*** | 0.191*** | 0.189*** |
| | (6.40) | (5.21) | (5.06) |
| *Leverage* | 0.170 | 0.223 | 0.223 |
| | (0.76) | (0.99) | (0.99) |
| *BTM* | 0.207 | 0.080 | 0.077 |
| | (1.44) | (0.57) | (0.55) |
| *ROA_Dummy* | −0.108 | −0.120 | −0.119 |
| | (−1.33) | (−1.47) | (−1.46) |
| *PoliticalConnection*ROA_Dummy* | 0.114 | 0.121 | 0.123 |
| | (0.84) | (0.90) | (0.91) |
| *Vol* | −1.676 | −2.385 | −2.383 |
| | (−0.80) | (−1.02) | (−1.01) |
| *MgmtOwnership* | | −0.151 | −0.109 |
| | | (−0.35) | (−0.24) |
| *BoardIndependence* | | −0.215 | −0.207 |
| | | (−0.36) | (−0.35) |
| *Crosslist* | | 0.874*** | 0.871*** |
| | | (5.92) | (5.90) |
| *Top1* | | 0.001 | 0.001 |
| | | (0.37) | (0.31) |

(*continued on next page*)

**Table 8** (*continued*)

| Panel B: ROA Indicator | | | |
|---|---|---|---|
| | *Prob(D&O = 1)* | | |
| | (1) | (2) | (3) |
| *MKTScore* | | 0.009 | 0.009 |
| | | (0.20) | (0.20) |
| *LawScore* | | 0.002 | 0.003 |
| | | (0.21) | (0.21) |
| *SOE* | | | 0.029 |
| | | | (0.38) |
| *Constant* | −6.723*** | −5.842*** | −5.816*** |
| | (−8.99) | (−7.55) | (−7.47) |
| Year and Industry FEs | Included | Included | Included |
| N | 8783 | 8783 | 8783 |
| $Chi^2$ | 177.05 | 227.37 | 227.62 |
| Pseudo $R^2$ | 0.10 | 0.12 | 0.12 |

This table reports regression results of the likelihood of D&O insurance coverage on a firm's political connectedness, and the moderating effect of firm performance. In Panel A, firm performance is measured by a firm's return on assets (*ROA*) in a given year. In panel B, firm performance is measured by a dummy that equals 1 if a firm's ROA is above the industry median in a year, and 0 otherwise (*ROA_Dummy*). Definitions of other variables are provided in Table 2. *t*-statistics based on robust standard errors and clustering at the firm level are displayed in parentheses. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

### 5.4. Controlling for firm performance

There may be a concern that the documented relationship between political connections and demand for D&O insurance is driven by firm performance, that is, CEOs of better performing firms are more likely to be elected as NPC and CPPCC representatives, and at the same time, better performing firms are subject to lower litigation risk. Although in the main analyses we already included return on assets (ROA) as a proxy for firm performance, to further alleviate the concern of omitted variable, we repeat our baseline analysis by adding an interaction term between political connection and performance – proxied by a firm's own ROA in a given year, as well as a dummy variable *(ROA_Dummy*) that equals 1 if a firm's ROA is above the industry median in a given year and 0 otherwise. We report the results in Table 8. While political connections continue to have a significant and negative impact on the likelihood of buying D&O insurance, the interaction term between political connection and performance is insignificant across all columns, which suggest that the relationship between political connection and the likelihood of buying D&O insurance is not affected by firm performance.[9]

## 6. Additional tests

### 6.1. Cross-sectional tests

Empirical results so far suggest that politically connected firms have a lower demand for D&O insurance, as political connections provide them an alternative form of protection against litigation risk. In this section we consider two contingencies under which the observed relationship between political connections and the demand for D&O insurance may be accentuated or weakened. Specifically, we examine two institution-related factors – market development level (hypothesis H2) and quality of local legal institutions (hypothesis H3) - which vary dramatically across regions in China (Wang et al., 2008; Chen et al., 2013; Fan et al., 2013; Chen et al., 2017).

The level of regional market development *MKTScore* is measured by the Index of Marketization (IM) of China's provinces (Wang et al., 2008; Fan et al., 2011; Lin et al., 2016).[10] The legal environment index *LawScore* is obtained from the National Economic Research Institution (NERI) which has been widely used in prior studies (Wang et al., 2008; Hung et al., 2012). This index captures "The degree of legal environment development, measured by the number of lawyers as a percentage of the population, the efficiency of the local courts and protection of property rights." A higher value of *MKTScore* and *LawScore* indicates higher level of market development and stronger legal environment, respectively.

Table 9 presents the results using probit model. In the two columns, the coefficients on *PoliticalConnection* remain negative. More importantly, the coefficient of the interaction term *PoliticalConnection*MKTScore* in Column (1) is positive and significant at the 1% level, suggesting that the negative effect of political connections on the demand for D&O insurance is attenuated for firms operating

[9] One may be concerned that misconduct or fraud being an omitted variable in the model. We alleviate this concern by controlling for provincial market development level (*MKTScore*) and provincial legal environment (*LawScore*) – two variables that can be proxies for legal risk. In addition, we conduct a probit regression to examine the relationship between political connections and the likelihood of misconduct, and find that that politically connected firms are actually more likely to be caught in misconduct. However, we also find these firms are actually less subject to litigation risk. Together, these results imply that political connections play a significant role in the legal arena and can shield connected firms away from litigation even in the face of a higher likelihood of misconduct.

[10] The index covering 1997–2008 is from Fan et al. (2011) and the index covering 2009–2014 is from Fan et al. (2016).

**Table 9**
Impact of political connections on D&O insurance coverage and the moderating effect of regional market development and legal environment.

| | (1) | (2) |
|---|---|---|
| *PoliticalConnection* | −1.381*** | −0.521*** |
| | (−4.01) | (−3.67) |
| *MKTScore* | −0.024 | |
| | (−0.91) | |
| *PoliticalConnection*MKTScore* | 0.179*** | |
| | (3.73) | |
| *LawScore* | | −0.006 |
| | | (−0.78) |
| *PoliticalConnection*LawScore* | | 0.037*** |
| | | (3.09) |
| *FirmSize* | 0.187*** | 0.189*** |
| | (4.82) | (4.89) |
| *Leverage* | 0.244 | 0.236 |
| | (1.00) | (0.98) |
| *BTM* | 0.095 | 0.084 |
| | (0.68) | (0.61) |
| *ROA* | −0.450 | −0.435 |
| | (−0.61) | (−0.60) |
| *Vol* | −2.620 | −2.358 |
| | (−1.09) | (−1.00) |
| *MgmtOwnership* | −0.214 | −0.170 |
| | (−0.46) | (−0.36) |
| *BoardIndependence* | −0.226 | −0.200 |
| | (−0.38) | (−0.34) |
| *Crosslist* | 0.866*** | 0.874*** |
| | (5.84) | (5.93) |
| *Top1* | 0.001 | 0.000 |
| | (0.21) | (0.21) |
| *SOE* | 0.036 | 0.029 |
| | (0.47) | (0.38) |
| *Constant* | −5.533*** | −5.681*** |
| | (−6.92) | (−7.19) |
| Year and Industry FEs | Included | Included |
| N | 8783 | 8783 |
| $Chi^2$ | 234.40 | 236.32 |
| Pseudo $R^2$ | 0.12 | 0.12 |

This table reports regression results of the likelihood of D&O insurance coverage on a firm's political connectedness and the moderating role of market development and legal environment. *MKTScore* is the provincial market development index and *LawScore* is the provincial legal environment index. Definitions of variables are provided in Table 2. *t*-statistics based on robust standard errors and clustering at the firm level are displayed in parentheses. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

in regions with highly developed markets. Also, in Column (2) where the contingent factor is legal environment, the coefficient on *PoliticalConnection*LawScore* is positive and significant at the 1% level. These results suggest that the effect of political connections on the likelihood of D&O insurance purchase is attenuated for firms in regions with strong legal environment.

### 6.2. Alternative measure of political connectedness

In the main analysis we used CEO's political connectedness to measure firm-level political connections. To ensure our findings are not sensitive to this measure, we conducted a robustness test by using the percentage of politically connected members among top management team, supervisors and board directors ("董监高" in Chinese) as an alternative measure of political connection (*PoliticalConnection_Percentage*). Each member's political connectedness is defined in the same way as CEO's political connectedness used in the main analysis. The average (median) percentage of *PoliticalConnection_Percentage* is 4.64% (4%).

We repeat our baseline analysis using this new measure and report the results in Table 10. As shown, the coefficient on *PoliticalConnection_Percentage* is significantly negative, which is consistent with our finding that political connection negatively affects the likelihood D&O insurance coverage.

### 6.3. Social importance or political connections?

Some firms are important in helping local government achieve social objectives, the local government naturally has incentives to protect them, which is expected to reduce the demand for D&O insurance. In this section, we explore whether there exists a

**Table 10**
Impact of political connections in top management team on D&O insurance coverage.

| | *Prob(D&O = 1)* | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| *PoliticalConnection_Percentage* | −1.458*** | −1.303** | −1.279** |
| | (−2.58) | (−2.30) | (−2.23) |
| *FirmSize* | 0.227*** | 0.187*** | 0.185*** |
| | (6.09) | (4.88) | (4.71) |
| *Leverage* | 0.198 | 0.266 | 0.266 |
| | (0.83) | (1.10) | (1.10) |
| *BTM* | 0.228 | 0.105 | 0.102 |
| | (1.59) | (0.76) | (0.74) |
| *ROA* | −0.454 | −0.407 | −0.387 |
| | (−0.61) | (−0.56) | (−0.53) |
| *Vol* | −1.639 | −2.254 | −2.253 |
| | (−0.80) | (−1.01) | (−1.00) |
| *MgmtOwnership* | | −0.186 | −0.134 |
| | | (−0.42) | (−0.29) |
| *BoardIndependence* | | −0.144 | −0.135 |
| | | (−0.24) | (−0.23) |
| *Crosslist* | | 0.875*** | 0.871*** |
| | | (5.95) | (5.92) |
| *Top1* | | 0.001 | 0.001 |
| | | (0.39) | (0.31) |
| *MKTScore* | | 0.010 | 0.010 |
| | | (0.21) | (0.22) |
| *LawScore* | | 0.002 | 0.002 |
| | | (0.17) | (0.17) |
| *SOE* | | | 0.034 |
| | | | (0.45) |
| *Constant* | −6.721*** | −5.852*** | −5.824*** |
| | (−8.78) | (−7.27) | (−7.17) |
| Year and Industry FEs | Included | Included | Included |
| N | 8783 | 8783 | 8783 |
| $Chi^2$ | 173.54 | 224.68 | 225.00 |
| Pseudo $R^2$ | 0.10 | 0.12 | 0.12 |

This table reports regression results of the likelihood of D&O insurance purchase on a firm's political connectedness. *PoliticalConnection_Percentage* is defined as the percentage of politically connected members among top management team, supervisors and board of directors combined. Definitions of other variables are provided in Table 2. *t*-statistics based on robust standard errors and clustering at the firm level are displayed in parentheses. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

substitution effect between a firm's political connectedness and its social importance to the local government.

In particular, we partition our sample into two groups based on a firm's social importance to the local government. We measure social importance in two ways. The first measure is the intensity of local government subsidies. Lee et al. (2017) notes that government subsidies are a particular feature of the social capitalist economy of China where the government's "visible hand" continues to influence the economic activities of market participants. Firms that receive local government subsidies are considered as being more important to the local government. Based on this argument, we measure a firm's importance to the local economy (*Subsidies*) as a dummy variable that equals 1 if the firm's annual local government subsidies as a percentage of its annual sales is above the median among all firms in that region, and 0 otherwise. Our second measure is the number of employees of a firm (*Emp*). Firms with more employees are expected to be socially more important to the local government.

We report the results of the split-sample test in Table 11. In both Panel A and Panel B, we find a significant and negative coefficient on *PoliticalConnection* for firms that are considered less socially important to the local government and thus do not receive guaranteed legal protection. A test of the difference in regression coefficients on *PoliticalConnection* generates a *p*-value of 0.000 (two-tailed) between Columns (1) and (2) in both Panel A and Panel B. For firms that are socially important, the relation between *PoliticalConnection* and demand for D&O insurance becomes insignificant. This finding is consistent with the intuition that these socially important firms receive guaranteed government protection, which mitigates the role of political connections in protecting the firm.[11]

We further provide direct evidence on the relationship between social importance and the likelihood of buying D&O insurance in Table 12. The coefficient on *Subsidies* is negative at the 1% level, indicating that the purchase of D&O insurance on average is indeed lower among firms that receive government subsidies, regardless of their CEOs' political connection. These findings potentially

[11] In an untabulated test we also explore whether a firm's decision to hire a politically connected CEO is an efficient choice by examining whether these CEOs enjoy a compensation premium for their political capital. We do not find evidence that politically connected CEOs receive a compensation premium. This suggests that a CEO's political connection enables the firm to avoid buying costly D&O insurance, but the firm does not appear to pay CEO more to enjoy this benefit.

**Table 11**
Impact of political connections on D&O insurance coverage and the moderating effect of a firm's social importance to local government.

Panel A: Local government subsidies

| | *Prob(D&O = 1)* | |
|---|---|---|
| | *Subsidies* = 0 | *Subsidies* = 1 |
| | (1) | (2) |
| *PoliticalConnection* | −0.290*** | −0.080 |
| | (−2.86) | (−0.61) |
| *FirmSize* | 0.157*** | 0.220*** |
| | (2.99) | (3.04) |
| *Leverage* | 0.070 | 0.363 |
| | (0.24) | (0.87) |
| *BTM* | −0.133 | 0.595** |
| | (−0.69) | (2.38) |
| *ROA* | −0.485 | −0.494 |
| | (−0.54) | (−0.32) |
| *Vol* | −0.780 | −15.031 |
| | (−0.21) | (−1.17) |
| *MgmtOwnership* | −2.468 | 0.810 |
| | (−1.43) | (1.49) |
| *BoardIndependence* | −0.901 | 1.730* |
| | (−1.02) | (1.66) |
| *Crosslist* | 0.640*** | 0.965*** |
| | (2.76) | (3.64) |
| *Top1* | 0.001 | 0.004 |
| | (0.40) | (0.84) |
| *SOE* | 0.021 | 0.001 |
| | (0.21) | (0.00) |
| *Constant* | −4.257*** | −14.333 |
| | (−3.98) | (−0.03) |
| *p*-value of test of difference | 0.000*** | |
| Year and Industry FEs | Included | Included |
| N | 4637 | 3362 |
| $Chi^2$ | 106.42 | 121.24 |
| Pseudo $R^2$ | 0.09 | 0.18 |

Panel B: Number of employees

| | *Prob(D&O = 1)* | |
|---|---|---|
| | *Emp* = 0 | *Emp* = 1 |
| | (1) | (2) |
| *PoliticalConnection* | −0.183* | −0.144 |
| | (−1.64) | (−1.47) |
| *FirmSize* | 0.210*** | 0.099* |
| | (3.09) | (1.68) |
| *Leverage* | −0.197 | 0.752* |
| | (−0.64) | (1.87) |
| *BTM* | −0.236 | 0.374** |
| | (−0.94) | (2.08) |
| *ROA* | −1.089 | 0.332 |
| | (−1.05) | (0.32) |
| *Vol* | −0.965 | −3.516 |
| | (−0.71) | (−0.61) |
| *MgmtOwnership* | −0.372 | 0.780 |
| | (−0.47) | (1.15) |
| *BoardIndependence* | 0.338 | −0.962 |
| | (0.45) | (−0.95) |
| *Crosslist* | 1.031** | 0.830*** |
| | (2.29) | (4.23) |
| *Top1* | 0.005 | −0.000 |
| | (1.62) | (−0.05) |
| *SOE* | 0.044 | 0.054 |
| | (0.41) | (0.42) |

(*continued on next page*)

**Table 11** (*continued*)

| Panel B: Number of employees | | |
|---|---|---|
| | *Prob(D&O = 1)* | |
| | *Emp* = 0 | *Emp* = 1 |
| | (1) | (2) |
| *Constant* | −5.956*** | −7.467*** |
| | (−4.56) | (−6.20) |
| *p*-value of test of difference | 0.000*** | |
| Year and Industry FEs | Included | Included |
| N | 4026 | 3780 |
| Chi$^2$ | 132.24 | 123.28 |
| Pseudo R$^2$ | 0.13 | 0.13 |

This table reports regression results of the likelihood of D&O insurance coverage on a firm's political connectedness and the moderating effect of the firm's social importance to the local government. In Panel A, a firm's social importance to the local government *Subsidies* is a dummy variable that equals 1 if the firm's annual local government subsidies as a percentage of its annual sales is above the median among all firms in that region, and 0 otherwise. In Panel B, a firm's social importance to the local government *Emp* is a dummy variable that equals 1 if the firm's natural logarithm of total employees is above the median among all firms in that region, and 0 otherwise. Definitions of other variables are provided in Table 2. *t*-statistics based on robust standard errors and clustering at the firm level are displayed in parentheses. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

**Table 12**
Impact of subsidies on D&O insurance coverage.

| | *Prob(D&O = 1)* | |
|---|---|---|
| | (1) | (2) |
| *Subsidies* | −0.204*** | −0.250*** |
| | (−3.21) | (−3.21) |
| *FirmSize* | | 0.083* |
| | | (1.86) |
| *Leverage* | | 0.050 |
| | | (0.19) |
| *BTM* | | 0.194 |
| | | (1.31) |
| *ROA* | | −0.230 |
| | | (−0.26) |
| *Vol* | | 3.636*** |
| | | (2.66) |
| *MgmtOwnership* | | −3.454*** |
| | | (−2.65) |
| *BoardIndependence* | | 0.389 |
| | | (0.56) |
| *Crosslist* | | 0.802*** |
| | | (4.19) |
| *Top 1* | | 0.001 |
| | | (0.37) |
| *SOE* | | 0.117 |
| | | (1.31) |
| Constant | −1.929*** | −4.159*** |
| | (−50.91) | (−4.74) |
| N | 8430 | 5755 |
| Pseudo R$^2$ | 0.006 | 0.050 |

This table reports regression results of subsidies on D&O insurance purchase. *Subsidies* is a dummy variable that equals 1 if the firm's annual local government subsidies as a percentage of its annual sales is above the median among all firms in that region, and 0 otherwise. Definitions of other variables are provided in Table 2. *t*-statistics based on robust standard errors and clustering at the firm level are displayed in parentheses. ***, **, and * denote significance at the 1, 5, and 10% levels, respectively.

reinforce the main finding of this paper that a firm's political connections matter to its D&O insurance purchase decision, and that other forms of political connections (other than CEO's political ties) possibly having similar effects.

## 7. Conclusions

This study examines the effect of a firm's political connectedness on its demand for D&O insurance. Using a sample of Chinese public firms over the period 2005–2014, we find evidence that politically connected firms are less likely to purchase D&O insurance. The association is robust to a series of robustness checks including Heckman two-step selection model, an examination of market reaction to the departure of politically connected managers, a difference-in-differences analysis surrounding the hiring of a politically connected CEO, and controlling for firm performance. Further analyses show that the effect is attenuated for firms in regions with strong market development and legal environment, but is accentuated for firms that are less socially important to the local government.

Our findings highlight a substitution effect of political connections for D&O insurance in protecting managers and directors against legal liability. Prior studies show that politically connected firms have an advantage in corporate litigations (Firth et al., 2011; Lu et al., 2015). Our findings suggest that because political connections shield managers and directors away from litigation risks, they reduce the demand for the D&O insurance.

Relatedly, the findings of this paper enhance our understanding of the differences in the breadth of D&O coverage across countries, and particularly institutional factors that drive the demand for D&O insurance in emerging markets. We show that political connections disincentivize firms from purchase D&O insurance.

Our paper also contributes to the growing literature on the value of political connections. Our findings suggest that political connections affect affiliated firms' insurance purchase decision, a hitherto unexplored area in the literature.

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