What Drives Corporation Litigation Risk of Chinese Firms?

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Abstract

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This paper explores whether ownership characteristics, qualified foreign institutional investors, geographic distance between the firm's headquarter and its largest institutional investors, and the legal environment a firm operates in affect a firm's litigation risk in China. Using a comprehensive sample of publicly listed firms and a subsample of sued firms from 2009 to 2018, we employ logit regression to examine our hypotheses. We find that state ownership, foreign institutional investors, and the legal environment have a strong influence on a firm's risk of being sued. We also find negative coefficients for long-term institutional investors' ownership and positive coefficients for the distance between the firm and its largest long-term institutional investors, but both coefficients are insignificant. Our findings provide important insights into the role of active versus passive monitoring in the Chinese market and their effects on a firm's likelihood to be ousted for alleged fraud.

Keywords: Litigation Risk, Qualified Foreign Institutional Investors, State Owned Entities, Legal Environment, Investor Proximity.

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1. Introduction

In this paper we attempt to answer whether and how internal and external factors affect a Chinese firm's litigation risk. Based on prior studies, we consider four aspects that might have a strong relation to the firm's risk of being sued: (1) state ownership, (2) qualified foreign institutional investor (QFII) ownership, (3) the legal environment, and (4) the geographic distance between a firm and its largest investors. We argue that the power provided through state ownership can serve as form of property rights protection, including reducing the frequency of inspections by the government and law enforcement agencies, and alleviating rent-seeking behavior of government officials (Zhang, 2005). Similarly, Zhang and Deng (2019) demonstrate that in the past decades QFIIs have brought a large amount of capital and advanced investment concepts to the Chinese capital market. As a result, they have helped maintain the stability of the securities market and have helped promote the healthy development of Chinese capital markets. Also along the same line, the rule of law where a listed company is located can help strengthen the supervisory role of senior independent directors, allowing them to restrain other employees from violating rules and regulations (Quan and Yao, 2015). Finally, Giroud (2013) shows that manufacturing plants that are located geographically close to their headquarters can supervise more effectively and can obtain higher profits. This also translates to institutional investors who have been found to provide better monitoring if they are located close to a given firm (Mazur et al, 2018).

China is a socialist country, and its people and businesses must adhere to the socialist system. One of the most distinctive features of the socialist system is the public ownership of the means of production. The best embodiment of the socialist public ownership economy is ownership by the

whole people, that is, an economy controlled by state-owned firms. Therefore, state-owned entities have an overall strategic position in balancing regional development, creating employment opportunities, and regulating income redistribution. They occupy a dominant position in important industries and key fields that are vital to the national economy in China (Liu, 2016) such as electricity, military, and chemical industries. However, political background is an open signaling mechanism, which can convey to the market that companies have government relations, thereby reducing the probability of litigation (Wang et al., 2019). Therefore, political connections may induce firms to take on more risk as it hinders their ability of creating strong monitoring and incentive mechanisms. (Zhang, 1999 and Otchere et al., 2020). We investigate the effect of state ownership on a firm's litigation risk. Our results show that there is a negative relationship between state ownership and lawsuit incidents, meaning that the presence of state ownership in a firm reduces the possibility of a firm being sued.

Institutional investors usually hold large shares of a firm than individual investors, they have professional investment advisors and large investment capabilities, since their interest are closely connected to the firm's performance, institutional investors are more willing to participate in the firm management. Carleton et al. (1998) present evidence that institutional investors have greater access to a firm's management and are therefore able to supervise it actively. In a conflict of interest, institutional investors can file a proxy resolution to exert their monitoring power over manager's preferences. (Gillan and Starks, 2000). However, a proxy resolution may not be an effective way to resolve conflict between investors and management (Karpoff, 2008). On the other hand, institutional investors can actively monitor the defendant firm's managerial irregularities with a securities class action (Romano, 1991). Morck et al. (1988), propose two hypotheses to illustrate that the relationship between management ownership and firm's market valuation is not monotonic.

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(1) The entrenchment hypothesis suggests that market valuation can be adversely affected by high ownership stakes, (2) Convergence of interest hypothesis suggests that larger management ownership are associated with higher market value. Consequently, the influence of different types of investors on firms is complicated and worth investigating.

Qualified foreign institutional investor (QFII) entered the Chinese market decades ago with the gradual relaxation and improvement of QFII policy restrictions. Firstly, the State Administration of Foreign Exchange of China (SAFE) announced that China establish a mechanism for qualified financial investment institutions to ease the free flow of domestic and foreign capital and promote the efficient allocation of capital. Secondly, the approval procedures for overseas investment will be further simplified, and foreign direct investment will only be verified for authenticity to encourage foreign investment. Thirdly, the qualified foreign institutional investors are allowed to invest in A-shares, government bonds, and corporate bonds approved by the China Securities Regulatory Commission on the Shanghai and Shenzhen Stock Exchanges. As a transitional system with limited introduction of foreign capital, qualified foreign institutional investor (QFII) has been successful in countries and regions such as South Korea, India, Brazil, and China's Taiwan region since the 1990s, and has greatly promoted the development of the local securities market. Thus, the intention of China's capital market regulators to introduce QFII is to use their advanced value investment concepts to promote the stable and healthy development of Chinese capital market. These days QFII's China's securities market participation has been rising. According to the QFII institutions list, released by the CSRC in February 2011, there are 107 QFII institutions in China's capital market, and the total quota of QFII institutions has increased from $ 4billion in 2002 to $ 30billion in 2007. Chen et al. (2018) find that most of the QFIIs are well funded, which means that they have better investment capabilities than other investors. When the

QFIIs trade in Taiwan, they have a significant influence on capital market operations (Chen et al., 2018). Chang (2010) find that local margin traders, dealers, and mutual funds in Taiwan are willing to follow foreign investors to increase or decrease holdings in a particular sector subsequent to positive or negative qualified foreign institutional investors order flows. Thus, QFIIs are the most important institutional investors in Taiwan's stock market. In our paper, we find that QFIIs do play a monitoring role and decrease the possibility of firms getting sued. This finding could be supported by the convergence of interest hypothesis, indicating that the higher the shareholdings of QFII, the greater the motivation to improve corporate governance, so that QFII's participation in corporate governance has changed from passive to active supervision, and its positive effects on corporate performance continue to expand. Besides, the QFII has a high degree of professionalism and strong information gathering capabilities. QFII's active participation in corporate governance can obtain higher investment returns, which will increase with the improvement of corporate performance. Therefore, QFII is willing to monitor the firm's management effectively and actively participate in corporate governance.

When we further consider investment horizons in our model, the outcomes are still in line with the hypothesis that firms with qualified foreign institutional investors have a lower litigation risk.

We then analyze the external factor, including the legal aspect of firms in China. Fan et al. (2011) report that the level of law environment in different regions of China varies dramatically. Since there are 31 provinces in China, their geographical environment are different, the local government will have different priorities when they develop the provinces, therefore, the level of economic development varies dramatically. Chu and Liu (2015) find that the differences in the level of economic development between regions have further aggravated the differences in the legal

environment between regions. Also, the effect of implementing the same law in different regions will vary depending on the level of economic development in different regions. At the same time, the law itself has a time lag effect, there will be many new problems in the development of society, and the law can only be formulated with the new problems, so it cannot keep up with the development of society. Walder (1995) has proved that the development of China's legal system is far behind the economic development, thus the legal framework plays a very limited role in the contract enforcement. Huang et al. (2019), suggest that although China has a unified legal regime, there is a large variation in the law enforcement and legal protection of investors among different provinces. Jiao et al. (2015) show that the local legal environment has a significantly positive influence on firms' product, technological, process, and management innovation. Huang et al. (2019) find that the smaller IPO underpricing for family firms is more pronounced when the firm is located in a province with a high quality of legal environment. They also find that proper legal protection promotes transparent information disclosure and reduces the verification cost for outside investors, and therefore lowers moral hazard and information asymmetry instances between market participants.

In our research we utilize a dataset that includes the all the regions legal environment index within China, with it we examine whether the quality of the legal system affects the firm's litigation risk. Furthermore, we also set a high legal variable, which equals to one if the index equals or above the median, and 0 otherwise. Our results show that the legal environment could increase the frequency and quality of the firm's trading information disclosure, forcing the firms to trade transparently. Therefore, we suggest that a proper legal system decreases information asymmetry, guarantees investors protection and increases credit, therefore reducing the firm's litigation risk.

Most studies focus on the proximity effect on parent-subsidiary companies in China. We

consider the physical distance between a firm's headquarter and its largest institutional investors. Talley (2009) shows that institutional investors play an important role in supervising the firm's regulations. For instance, institutional investors could restrain the abuse of power by firm's manager, and could make firms disclosure more transparent, risk control and investment decisions more reasonable. In recent research, Mazur et al. (2018) find that the distance effect, between institutional investors' headquarters and a firm's location, is significantly positive, meaning that the larger the distance between the firm and the largest institutional investors, the higher the firm's possibility of the firm being sued. Institutional investors who are located physically close to the firm may have informational advantages over institutional investors who are located far away from the firm's headquarters. Closely located investors can therefore conduct effective monitoring of the firm's management, thus decreasing the firm's litigation risk.

The results of our findings support those assumptions. In our study, we also take in consideration institutional investors investments horizons. We find that the effect of long-term institutional investor's ownership is negative and the effect of distance between the firm and its largest long-term institutional investors is positive, but both coefficients are insignificant. Furthermore, we evaluate if institutional investors can lessen the distance effect by holding shares for a long-time period. The coefficient of the interaction is significantly negative, suggesting that the largest institutional investors can weaken the distance effect by participating in the firm's management actively for over four quarters. Thus, firms with long term institutional investors and a closely located investors have a lower litigation risk.

Our paper contributes to several strands of the literature. First, it adds to the research on state owned entities (SOEs), showing that firms with state-controlled background have a lower litigation risk than the private firms. Second, it adds to the research on qualified foreign institutional investors

(QFII), showing that with their professional team, rich experience, and strong investment capability, can improve the firm's management, thus decreasing their litigation risk. Next, we build the connection between the legal environment and a firm's litigation risk, and we prove that a well-functioning legal system monitors firms effectively and forces them to strengthen their management, in turn lowering their litigation risk. Finally, following Mazur et al. (2018), we switch to Chinese capital market to test the distance effect between a firm's headquarter and its largest institutional investors among the top 5 shareholders. Our results indicate that a firm's litigation risk is significantly lower if institutional investors are located closely to the firm's headquarters due to effective monitoring and an informational advantage.

The paper proceeds as follows: In Section 2 we review the literature and develop our hypotheses. Section 3 we describe the sample data. Section 4 we claim our model specification. Empirical results are reported and discussed in Section 5, and our conclusions are presented in Section 6.

2. Literature review

2.1. Litigation risk of firms

In recent years, China's firms' reforms have been fast-growing and far-reaching. However, such a scene of prosperity comes with a rapid increase in corporate irregularities. Liu et al. (2016) investigate the effect of litigation risk and law on cost of corporate debt financing. Their study shows that when Chinese firms facing economic disputes, companies are more willing to resort to lawsuits if the private mediation approach is invalid. Litigation is a suboptimal way to solve conflicts because a lawsuit involves a high cost (attorney, court fees, restitution fees), and there is

the uncertainty of how the firm can proceed until the final verdict (Wang et al., 2008). Bizjak and Coles (1995), Firth et al. (2011), and Lin et al. (2013) examine the effect of inter-firm lawsuits on the firm value. These studies find that there is a significant decrease in a firm's stock price when a firm has irregularities. Furthermore, Liu et al. (2016) also find that firms who are involved in a lawsuit are more likely to be charged higher debt financing costs.

Higher litigation risks have a direct effect on the firm's value, their regular operations and their borrowing ability, therefore it is important to determine what aspects can increase or diminish the litigation risk for a firm. Our study considers four aspects that might be involved in determining this: ownership nature (SOE), qualified foreign institutional investor (QFII), legal environment of regions and geographic distance between the largest institutional investors and the firm's headquarters.

2.2. State owned entities

Political connections affect corporate outcomes, including firm performance, positively. (Fan et al., 2007). Faccio et al. (2006) report that political connections benefit firms by providing them with ease of access to licenses, planning permissions and bailouts in times of distress. These studies are mainly focused on private listed firms that have political connections, Chinese companies tend to be owned, at least partially, by the state; those companies are known as enterprise state owned entities (SOEs). Enterprise reforms are carving out the operational units of the SOEs and reorganizing them as limited liability companies with share capital and with profit-making objectives; even then SOEs play an important role in the Chinese economy, as part of the stake remains under control of the state. Local and regional governments hold on average approximately 30 % of a firm's shares, another 30 % is held by other legal entities, most of these controlled by

the government (Firth et al., 2011). As firms with political affiliations benefit from ease of restrictions and bailouts, we believe that SOEs, which are owned by the government, are less likely to be sued or more likely to not be punished. We therefore formulate our first hypothesis as follows:

Hypothesis 1: Firms that are state controlled have lower litigation risk than private firms.

2.3. Qualified foreign institutional investors

Qualified foreign institutional investor (QFII), is a program, launched in 2002 by the Chinese government, that gives certain licensed international investors the opportunity to invest in China's stock exchanges. These investment opportunities include the buying and selling of yuan-denominated " A " shares of Chinese companies. This program mainly aims to introduce foreign capital and to standardize the market by their advanced value investment concept. Huang and Shiu (2009) find that firms with a larger proportion of qualified institutional investors (QFIIs) perform better than firms have a lower percentage of QFIIs. Wu et al. (2011) point out that the qualified foreign institutional investor (QFII) plays an important and positive role as an investor in China's A-share market and firms with QFIIs are superior to those without QFIIs in terms of profitability, operational capability, and corporate governance quality. Further, they also report that the existence of the QFII in a firm can improve the firm's performance, In China, foreign investors prefer large companies with low book-to-market ratios as those firms have less information asymmetry (Lin and Shiu, 2003). Additionally, QFIIs may also have a preference for larger well-known firms with some element of state ownership, lower liability levels, and greater turnover capacity (Liu et al., 2020).

So far, we find that most of the studies mainly focus on the QFII investment preference, trading behavior, and the impact on the local securities market. Little research has tested the impact

of QFII's presence on a firm's litigation risk. Therefore, we aim to provide new and additional insights into the question of how the qualified foreign institutional investors can affect the firm's possibility of getting sued. The hypothesis is as follows:

Hypothesis 2: Firms with a higher ownership by qualified foreign institutional investors (QFII)

have lower litigation risk than firms with lower ownership by QFII.

To further investigate potential differences in the effect of long-term and short-term investors, we set a dummy variable, which equals to one if the qualified foreign institutional investor (QFII) holds shares for at least four quarters, otherwise it equals to zero to further test our hypothesis.

2.4. Legal environment

The legal environment has an important influence on the capital market. There are 31 provinces in China, but the process of rule of law are different among different regions because the different level of economic development will affect the enforcement of legal provisions in various regions. Fan et al. (2011) point out that the development of China's judicial system lags far behind the reform and development of the economy. Chen and Shiu (2007) show that the differences in the capital structure of the listed companies in different countries are partly due to the differences of the county's legal and institutional environments. Yu (2007) indicates that when the legal system of a region or country is well functioning firms in that region or country will disclose detailed and high-grade information. He also finds that there is a positive relationship between firm value and the law environment of regions, meaning that higher level of law will be accompanied with a higher firm value. Hasan et al. (2008) investigate Asian emerging markets and suggest that improvements in the corporate governance, such as legal environment and investor rights, will lessen the dependency of firm investments on their internal resources. Since capital occupation is the main

way for controlling shareholders to transfer the interests, in the region where the legal environment is highly developed and provides protections to investors, the higher the legal risk will be faced by the controlling shareholder's encroachment on the interests of small and medium-sized shareholders, thus controlling shareholders occupy less capital (Qiu and Rao, 2007).

When the legal system is well functioning disclosure is more effective, thus investors are better informed and the firm can generate more value, due to this our third hypothesis is as follows:

Hypothesis 3: Firms that operate in provinces with a high-quality legal environment have lower litigation risk than firms that operate in provinces with a lower quality legal environment.

The integrity of the legal system shall be different among 31 provinces in China. To account for potential differences, we set a dummy variable, HLegal, which equals to one if the legal index is equal or above the median of the index, and zero otherwise.

2.5. Geographic distance

In our paper, we also focus on the distance between institutional investors and the firm's headquarters. Lawsuits decrease significantly the sued firm's stock price on the date of the lawsuit filing (Bhagat et al., 1998, Gande and Lewis, 2009). Stakeholders will then experience huge losses if the firm where they hold stock is sued. Costs that derive from the conflicts between stakeholders and managers decline when the management ownership increases (Jensen and Meckling, 1976). As their stakes rise, managers are less likely to damage the corporate wealth. Morck et al. (1988) also demonstrate that according to the convergence-of-interest hypothesis, the market value increases with the increase of management ownership. However, they also point out that market valuation can be adversely affected by high ownership stakes based on the entrenchment hypothesis.

Edmans (2009) finds that frequent trading by the institutional investors with advantageous

information could mitigate information asymmetry problems and allow the stock price to better reflect the firm's real value. Talley (2009) and Cheng et al. (2010) prove that the institutional investors can significantly affect a firm's litigation risk. We therefore wonder if institutional investors could actively and effectively supervise the company's management. Therefore, we come out of the hypothesis as follows:

Hypothesis 4.1: Firms with larger institutional ownership face lower litigation risk than firms with lower institutional ownership.

Past studies have proved that the geographical distance matters. For instance, Choi et al. (2012) analyze how the geographic distance between the auditor and the client affects audit quality. They find that there exists a positive effect between the auditor geographic distance and the quality of the audit, the shorter the distance the better was the audit quality. Li (2015) investigates how the physical distance between the parent and subsidiary companies affects the corporate governance and investment behavior of stakeholders. He shows that with an increase in the distance between the parent and subsidiary company the level of corporate governance lowers and the overinvesting behavior becomes more frequent. In our study we attempt to determine if investors' geographical proximity to the firm's headquarters will influence the firm's litigation risk, we also investigate whether the effect of geographic distance will be different considering long and short investment horizons, thus, the hypotheses are as follows:

Hypothesis 4.2: Firms that have a larger geographical distance to their largest institutional investors face a higher litigation risk than firms that operate in proximity to their largest institutional investors.

Hypothesis 4.3: Firms that have a closer geographical distance to their largest long-term institutional investors face lower litigation risk than firms who are far away from

their largest institutional investors.

3. Data description

3.1. Data

We use four sources to collect information: CSRC, CSMAR, Auto Navi map and the Fan-gang index. We examine all published CSRC enforcement actions with filing dates between January 2009 and December 2018. Since the Securities Law promulgated in December 1998, CSRC is the sole regulator of listed companies, stock exchanges, and securities firms. We classify firm's lawsuits in 16 groups by the type of violation and by industry into six groups as we list in Table 2. Initially, there are 1950 observations in our sample from 2009 to 2018. All the market data that we use are collected from CSMAR quarterly files. From the CSMAR database we collect information on the ownership nature, the percentage of QFII ownership and the address of the listed firms. All listed firms' and institutional investors' coordinates are collected manually from the Auto Navi map. The legal environment part, the index we use to represent law environment of a province is from the Fan-gang index, which consists of six indices: (1) total market index; (2) relationship between government and markets index; (3) the development of non-state business index; (4) development of product markets index; (5) development of factor markets index; (6) development of market intermediaries and legal environment index. Higher scores equate to greater legal development. The latest Fan-gang index only updates to 2016, thus in this part, our sample period is from 2009 to 2016.

For sued firms, we match financial statement information one quarter prior to their lawsuit filing dates. For non-sued firms, we match the data at the end of the same quarter. Our final sample

of violated firms contains 2587 observations. Finally, we include all non-sued firms in the CSMAR database as a comparison benchmark.

3.2. Variables

First, we define Sued as our litigation variable, which equals one if the firm violates the regulations during the sample period, otherwise it equals zero. Next, we set different independent variables for each aspects. For state owned entities (SOEs), we set the variable Stateowned, which equals one when the listed firms are SOEs and zero otherwise. We define the QFII variable as the total ownership of the qualified foreign institutional investors, which equals the percentage of the QFII ownership. Further, in our analysis, we distinguish the difference between long- and short-term investors. We create LOwnQ, if the qualified foreign institutional investors hold shares at least the last four quarters it is considered long-term investors and the variable equals one, otherwise it equals zero. We define the Legal represents for the legal environment index. We also set another dummy variable, HLegal, which equals one if the index is equal or above the median of the legal environment index, and zero otherwise. To calculate the geographical distance between institutional investors and the firm's headquarters we use the procedure used by Mazur et al. (2018) as a reference. We first identify the institutional investors among the top five shareholders of the firm, and we create the Own variable (total ownership by the largest institutional investor) and the Dist variable (average distance between the firm and the largest institutional investors). Specifically, we construct a measure of geographic distance at the end of each quarter. For each firm, we calculate the equally weighted average distance between the firm's headquarters and each institutional investor among the top 5 shareholders. Then we aggregate institutional ownership information for each firm and each quarter. To consider investment horizons we create a dummy

variable, Long, which equals one if the largest institutional investor hold shares for at least the last four quarters, otherwise it equals zero. LongOwn and LongDist represent the total ownership of the long term institutional investors and average distance between the firm and the largest institutional investors.

Finally, we define several control variables that might affect the firm's litigation risk based on the previous research. Our control variables are: firm size, return on asset, stock return, book-to-market ratio, Tobin's Q, financial leverage, and audit information. We use the natural log of a firm's total assets to measure the size of the firm (Lsize). Alexander (1991) points out that large firms might be more likely to be sued because they allow investors to extract larger settlements. However, institutional investors are more willing to monitor the firm's management effectively and affect the firm's decisions when they have a large investment in a large firm (Gillan and Starks, 2000; Morck et al.,1988). Thus, the impact of this variable needs to be controlled. Besides, to control the firm's profitability, we select return on assets (ROA). Next, we control the firm's performance by adding firm's stock return (Stock return), book-to-market ratio (BM), and Tobin's Q. We consider that higher stock return and Tobin's Q and lower book-to-market ratio are a positive sign of firm's performance, which means these kinds of firms face a lower risk of being sued. Lev (1974) tests a sample of companies and finds a positive relationship between leverage and the risk of the firms. Additionally, Defond and Jiambalvo (1994) mention that high leverage firms are more frequently involved in fraud. Therefore, we also include financial leverage (Leverage) in our model. We argue that auditors from Big Four accounting firms may help firms improve their management and monitor their activities, in that way firms are less likely to be sued , thus, we create a dummy variable, Big4, indicating whether a firm's auditor is from Big Four accounting firms or not. We winsorize all of our variables except the dummy variables at the top and bottom 0.5 % to reduce

the influence of the outliers. In Table 1 we will provide more details of the definition and source of all the data we mentioned above.

3.3. Descriptive statistics

In Table 2 we provide descriptive statistics for the firm's sued data, independent variables of the four parts, and all control variables we used in our test. Furthermore, we report the results of the t-test of the sued and non-sued groups.

Panel A shows the basic information of 1432 violated firms in our sample. In detail, we class the violated firms by year, by industry, and by allegation type. All classifications are based on the criterion provided by the CSMAR database. We have 1432 violated firms, but the total numbers of the last group is different from the former two groups. That is because firms might violate multiple regulations at the same time, thus, some of the firms may count multiple times, so the total observations for the three groups are different. In the first classification, there is a sharp increase of violated firms in 2012, the amount does not vary as much from 2012 to 2018. People's Daily Online (2013) reports that half of the listed firms had a strong incentive to whitewash their financial statements, which led to a surge in corporate violations. Industrial firms account for more than 66 % of all industries. Financial firms have the lowest amount of the lawsuits, which only accounts for 4 % of all industries during the sample period. Panel A also reports that others account for 29.9 % of all violations, and delayed disclosure takes the second place, which accounts for 20.7 %. Stock manipulation is very rare during the sample period, which only accounts for 0.03 %.

Panel B of Table 2 reports descriptive statistics for the key variables and control variables of sued and non-sued firm. We also provide the results for the mean and median equality tests of the subsamples. The results reveal significant differences for most of our independent variables

between the two groups, which indicates initial evidence that these variables have a strong influence on the firm's litigation risk. For example, the mean and median of the legal environment index (Legal) and the total ownership of largest institutional investors among the top 5 shareholders (Own) are significantly higher for non-sued firms than for sued firms (both significant at the 1 % level), while the median of the distance between firms and their largest institutional investors among the top 5 shareholders is significantly higher for sued firms than for non-sued firms (significant at 5 % level), indicating that if the firm is in a province with a highly developed legal system or institutional investors are closely located to the firm's headquarters, the firm is less likely to be sued. Besides, the equality tests show that state owned nature (Stateowned) and the long-term ownership of QFII (LOwnQ) are significantly higher (at the 1 % level of significance) for non-sued firms than for sued firms.

[Insert Table 2 about here]

4. Model specification

In this section we specify our model for each part based on our sample separately. We choose the logit model for our test since the variable of lawsuits is a binary qualitative variable.

4.1. The effect of the state-controlled ownership on litigation risk

To test Hypothesis 1, we start to examine how the state ownership nature affects the firms' litigation risk by logit regression. Specifically, we create θ_i stands for the likelihood of a lawsuit, thus, $1-\theta_i$ represents the likelihood of no lawsuit. Given the logit$=\ln(\theta_i / (1-\theta_i))$ as the dependent variable. More formally, we construct logit regression as follows:

$$Ln\left(\frac{\Pr(Sued_i = 1)}{1 - \Pr(Sued_i = 1)}\right) = \alpha + \beta Stateowned_i + \sum_{m=1}^{M} \delta_m Controls_{i,m} + YearDummies$$
$$+ IndustryDummies + \varepsilon_i \tag{1}$$

where $Sued_i$ is a dummy variable, which equals to one if firm i is violated during the sample period, otherwise it equals zero. Stateowned equals to one if firm i is state-controlled and $Controls_{i,m}$ are m variables based on the relevant literature and are demonstrated in detail in Table 1. We also control year and industry fixed effects in our model.

4.2. The effect of the QFII on litigation risk

To examine Hypothesis 2, we test whether the existence of qualified foreign institutional investor (QFII) has a significant effect on the irregularities of a firm. Furthermore, we try to figure out the potential difference when considering investment horizons. Using the same model we choose in part 1, the logit regression model is created as follows:

$$Ln\left(\frac{\Pr(Sued_i = 1)}{1 - \Pr(Sued_i = 1)}\right) = \alpha + \beta QFII_i + \gamma LOwnQ_i + \phi QFII_i * LOwnQ_i + \sum_{m=1}^{M} \delta_m Controls_{i,m}$$
$$+ YearDummies + IndustryDummies + \varepsilon_i \tag{2}$$

where $QFII_i$ denotes the ownership of the qualified foreign institutional investors during our sample period, estimated as the total ownership by the qualified foreign institutional investors (QFIIs). $LOwnQ_i$ is a dummy variable that equals to one if the qualified foreign institutional investor (QFII) holds shares in a firm for at least the last four quarters, and zero otherwise. We further employ the interaction of $QFII_i$ and $LOwnQ_i$ in our regression.

4.3. The effect of the legal environment on litigation risk

For testing Hypothesis 3, we select the legal index from the Fan-gang index to represent the province development level. Liu et al. (2016) point out that the effect of companies' pending litigation on their bank credit loan cost is more severe in the regions with a poor law environment. Also, Yu (2007) reports that the higher level of law environment in the region, the more transparent the trading information at the time of the company's litigation. In contrast, regions with a relatively low legal environment have lower transparency making it more difficult for banks to obtain detailed information about a company's litigation through the restrictive mechanism of laws and regulations. Inspired by these studies, we decide to find out the potential difference between the undeveloped regions and developed regions. Our model is as follows:

$$Ln\left(\frac{Pr(Sued_i = 1)}{1 - Pr(Sued_i = 1)}\right) = \alpha + \beta Legal_i + \gamma HLegal_i + \varphi Legal_i * HLegal_i + \sum_{m=1}^{M} \delta_m Controls_{i,m}$$
$$+ YearDummies + IndustryDummies + \varepsilon_i \qquad (3)$$

where $Legal_i$ measures the quality of the legal environment of the province in which the firm is headquartered. Further we set another vairable, $HLegal_i$, which is a dummy variable that equals one if the legal environment index is equal or above the median of the legal environment index, and zero otherwise. Finally, we include $Legal_i$, $HLegal_i$, and their interaction in the full model. Year and industry fixed effects are also controlled.

4.4. The effect of the geographic distance on litigation risk

To examine Hypothesis 4.1, we first want to confirm that institutional investors affect the firm's litigation risk. After, to support Hypothesis 4.2, we test how does the geographic distance between the firm and the largest institutional investors among the top five investors affects a firm's

litigation risk. Finally, for the Hypothesis 4.3, we investigate whether investment horizons affects our results and if the distance effect is weakened when institutional investors hold shares for a long time period. Thus, we employ long term variables like $LongOwn_i$, $LongDist_i$, $LOwnQ_i$, and their interactions to test Hypothesis 4.3. We still employ logit regression, which is expressed as follows:

$$Ln\left(\frac{\Pr(Sued_i = 1)}{1 - \Pr(Sued_i = 1)}\right) = \alpha + \beta Own_i + \sum_{m=1}^{M} \delta_m Controls_{i,m} + YearDummies$$
$$+ IndustryDummies + \varepsilon_i \tag{4.1}$$

$$Ln\left(\frac{\Pr(Sued_i = 1)}{1 - \Pr(Sued_i = 1)}\right) = \alpha + \beta Dist_i + \sum_{m=1}^{M} \delta_m Controls_{i,m} + YearDummies \tag{4.2}$$
$$+ IndustryDummies + \varepsilon_i$$

$$Ln\left(\frac{\Pr(Sued_i = 1)}{1 - \Pr(Sued_i = 1)}\right) = \alpha + \beta LongOwn_i + \gamma LongDist_i + \varphi LongOwn_i * LongDist_i \tag{4.3}$$
$$+ \sum_{m=1}^{M} \delta_m Controls_{i,m} + YearDummies + IndustryDummies + \varepsilon_i$$

$$Ln\left(\frac{\Pr(Sued_i = 1)}{1 - \Pr(Sued_i = 1)}\right) = \alpha + \beta LOwnQ_i + \gamma Dist_i + \varphi LOwnQ_i * Dist_i + \sum_{m=1}^{M} \delta_m Controls_{i,m}$$
$$+ YearDummies + IndustryDummies + \varepsilon_i$$

All variables except independent variables are all the same as we defined in section 4.1. In equation (4.1), Own_i represents the total ownership of the institutional investors in the firm. In equation (4.2), $Dist_i$ denotes the average geographic distance between the largest institutional investors among the top five shareholders and the firm. In equation (4.3), $LongOwn_i$ represents the total ownership of institutional investors who hold shares for at least four quarters; the remaining shareholders are considered short term investors. $LongDist_i$ represents the average distance of institutional investors who hold shares for at least four quarters, the rest is considered average

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distance of short-term institutional investors. $LOwnQ_i$ is the variable that we define in part 2, equals one if the qualified foreign institutional investors hold shares for at least the last four quarters, and zero otherwise. The reason why we add LOwnQ here is because the distance between a firm's headquarters and its qualified foreign institutional investors is relatively far, based on our expectations that distance effect is positive and the institutional ownership effect is negative, we wonder whether the qualified foreign institutional investors hold shares for a long time could take the edge off the distance effect. In addition to the above model specifications, we also consider models in which we employ interaction terms of $LongDist_i * LongOwn_i$ and $Dist_i * LOwnQ_i$.

5. Empirical results

5.1. The effect of the state-controlled ownership on litigation risk

Table 3 reports the results for the full sample of our logistic regression estimations. Model 1 shows the results for the regression that only includes the control variables. Models 2 includes the independent variable Stateowned and control variables. The coefficient of Stateowned is significantly negative (at the 1 % level of significance), which means the result is in line with our Hypothesis 1 that firms with state-controlled ownership have lower litigation risk than those private firms. Besides, we see that our control variables, financial leverage (leverage) have a positive coefficient (at the 1 % level of significance), which is consistent with Defond and Jiambalvo (1994) that firms with a higher leverage will engage in fraud more frequently.

[Insert Table 3 about here]

5.2. The effect of the QFII on litigation risk

Table 4 reports the results of the relationship between the QFII and litigation risk by logistic

regression. In Model 1 we test the effect of the QFII on the firm's litigation risk without considering investment horizons. Model 2 includes the control variables and the long-term qualified foreign institutional investors which equals one if the qualified foreign institutional investors hold shares for at least last four quarters and zero otherwise. All coefficients of the ownership and long term variables in the model are significantly negative. Model 3 represents the full model as expressed by equation (2). The interaction of QFII * LOwnQ is positive, but it is insignificant. Overall, we suggest that the results are in line with our Hypothesis 2: firms which have qualified foreign institutional investors, especially long term investors, have lower litigation risk than firms without them. Such results confirm the previous points of view again that the qualified foreign institutional investors could urge the firm's managers to improve corporate performance, alleviate agency cost and protect shareholders' rights and interests (Zhang and Deng, 2019). However, Wu et al. (2011) find that QFIIs tend to invest in large, reputable, and well performing firms. Therefore, further testing should be done to examine whether QFIIs lower the litigation risk of firms with their expertise and effective monitoring, or if the firms already had a lower litigation risk and QFIIs were simply attracted to them.

[Insert Table 4 about here]

5.3. The effect of the legal environment on litigation risk

Table 5 reports the results of the effect of the legal environment for the sample of our logistic regression estimations. Model 1 tests the general effect of the law environment on the firm's litigation risk. The coefficient of Legal is significantly negative. In Model 2, we further create a dummy (HLegal) which equals one if the legal index is equal or above the median of the legal index, and zero otherwise. We find that the coefficient of the HLegal still remains significantly

negative. Model 3 represents the full model as expressed in equation (3). Since the coefficient Legal and HLegal are both significantly negative, we create Legal * HLegal interaction term as a further support to our result. We find that the coefficient of the interaction Legal * HLegal is significantly negative. The result is consistent with the former two tests, giving further support to our assumptions that highly developed legal systems would force the firm to trade transparently and execute effective management regulations, thus, the legal environment does matter; firms that operate in provinces with a high quality legal environment have a lower litigation risk than firms operating in provinces with a poor legal environment.

[Insert Table 5 about here]

5.4.　The effect of the geographic distance on litigation risk

Table 6 reports the results of the geographic distance effect on litigation risk by logit regression. Model 1 and Model 2 show the results of distance and ownership variables with control variables separately. We find that the institutional investor's ownership effect is significantly negative, and the distance effect is significantly positive. In Model 3, we test full model that includes both ownership and distance variables and their interaction. These outcomes are consistent with Talley (2009) and Cheng et al. (2010) where they suggest that institutional investors have a strong effect on the firm's litigation risk. This is also in line with our Hypothesis 4.1 indicating that firms with institutional investors have a lower litigation risk than firms without institutional investors. Additionally, it confirms our Hypothesis 4.2, supporting the claim that a close distance between the largest institutional investors and the firm decreases the firm's litigation risk.

Next, in Model 4 and 5, we consider ownership and distance variables with investment horizons. We first set a dummy variable, Long, which equals one if the institutional investors hold

shares for at least last four quarters, and zero otherwise. Then we create LongOwn equals Long *

Own and LongDist equals Long * Dist in order to test whether investment horizons would affect

our results. Although the coefficient of the LongOwn is negative and the coefficient of LongDist

is positive, they both lose the significance, indicating that investment horizons will not affect the

firm's litigation risk. Model 6 represents the full model of both LongOwn and LongDist variables

and their interaction. The meaning of this model is that we try to find whether the institutional

investors hold shares for a long period would weaken the distance effect on the firm's litigation

risk. The coefficient of the interaction is significantly negative, indicating that long investment

horizons can alleviate the distance effect. Model 7 is an extension that we want to see whether the

long holding period of qualified foreign institutional investors (QFIIs) could weaken the distance

effect. Although the coefficient of the interaction is negative it is also insignificant, therefore, we

suggest the impact of the long term qualified foreign institutional investors on the distance effect

is weak. The coefficient of the LOwnQ is significantly negative, which give extra support to our

Hypothesis 2 and our Hypothesis 4.1, indicating that the presence of institutional investors affects

the firm's litigation risk.

[Insert Table 6 about here]

6. Discussion

Our paper generally consists of four aspects that might have effects on the firm's litigation risk.

First, we investigate how state-owned ownership affects the firm's litigation risk. Most of the extant

studies are mainly focused on private listed firms who have political connections benefit from them.

We investigate SOEs, where the political backgrounds are much stronger than those of private firms.

We wondered whether these tight connections would shield illegal activities, this paper attempts to

find out the true effect of state-owned ownership on the firm's litigation risk. Our result supports our hypothesis, firms controlled by the state have a lower possibility of being sued compared to private firms. However, we could not claim that the government would be a good supervisor and effective monitor of the firm's management to help reduce the firm's fraudulent activities, it may also because of the risk aversion of managers or the hesitation of the affected parties to sue an enterprise owned by the government.

In the second part we wonder if different types of investors would have a different effect on the firm's litigation risk. Prior research has proved that the presence of QFII improves the firm's performance, alleviates the agency cost, and it has a positive influence on the firm's market value (Zhang and Deng, 2019). Our results support hypothesis 2, showing that firms with qualified foreign institutional investors (QFIIs), especially long-term investors, significantly decline their litigation risk. However, we still are not clear whether the low litigation risk is partly because of the qualified foreign institutional investor's effective monitoring, or the QFII tends to invest in firms with good performance and reputations, which means the firms themselves have a low litigation risk. We expect that further research could give us more explicit suggestions.

After considering the investor's type, we switch to investigate the external environment. China has 31 provinces and the level of legal environment development varies greatly among the regions, so we posit that the legal system would also affect the firm's regulations and decisions, thus affecting the firm's possibility of being sued. Using the data from 2009 to 2016 and the legal environment index from the Fan-gang index, we show that higher legal environment index could decrease the possibility of firms being sued. When we employ dummy variable Hlegal, trying to find potential difference between high and low legal environment index, the result is still in line with our hypothesis that firms operate in provinces with high quality of legal environment have a

lower litigation risk than firms in provinces with a poor legal environment.

The last part is motivated by Mazur et al. (2018), where they examine the geographic distance effect on the firm's litigation risk. To the best of our knowledge, studies mainly focus on the effect of the distance between a company and its subsidiaries on investment behaviors of Chinese investors (Li, 2015). Our research tests the relationship between the geographic distance of institutional investors among the top five shareholders and the litigation risk of firms. Using a sample of shareholder irregularities, we test our data by using the logit model. We find that the coefficient of the geographic distance is significantly positive and the coefficient of the ownership of the largest institutional investors is significantly negative, indicating that institutional investors who are located closer to the firm's headquarters and firms with large proportion of ownership held by institutional investors, have a lower possibility of being sued. We also consider investment horizons and we find that although the sign of the coefficients is consistent with the ownership and distance variables, the impact of long term investment horizons does not change our results, thus long-term investment horizons have a weak effect on the litigation risk. However, the interaction of the LongOwn and LongDist is significantly negative, meaning that the long-term investment horizons would mitigate the distance effect. Furthermore, we test long term qualified foreign institutional investors and distance effect together. The coefficient of the interaction is negative and insignificant, indicating that long term investment horizons of qualified foreign institutional investors do not influence the distance effect. Ultimately, close distances allow institutional investors to conveniently participate in the firm's management, allowing them to gather insider information with ease, therefore, the firm's litigation risk would be reduced.

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Appendices

Table 1: Variable definitions

This table provides variable definitions and data sources for all variables used in our analysis. We list the state ownership-related variables in Part 1, the foreign investor related variables in Part 2, the legal environment-related variables in Part 3, and the geographic distance-related variables in Part 4. For all variables in this group (the geographic distance variables) that use distance, the distance measures between the firms and the investors are calculated based on the geographic coordinates of the corresponding entities. The formula is as follows:

$Distance_{f,i}=r*arccos\{sin(lat_f)*sin(lat_i)+cos(lat_f)*cos(lat_i)*cos(lon_f-lon_i)\}$, where f and i denote the firm and the investor, both lat (latitude) and lon (longitude) are measured in radians, and r is the earth's radius measured in miles (3,963 miles).

Variables	Definition	Source
Main variable of interest		
Sued	Dummy variable, equal to one if the firm was sued during the sample period, and zero otherwise.	CSMAR: China Listed Firms Research Series - CSRC Enforcement Actions
Part 1: State ownership variables		
Stateowned	Dummy variable, equal to one if a firm is controlled by the state, and zero otherwise.	CSMAR: China Listed Firms Research Series - Equity Nature
Part 2: Qualified foreign institutional investor (QFII) variables		
QFII	The percentage ownership by qualified foreign institutional investors (QFII) in a firm.	CSMAR: China Listed Firms Research Series - Institutional Investors
LOwnQ	Long term QFII, a dummy variable, which equals one if the qualified foreign institutional investor (QFII) holds shares for at least the last four quarters, and zero otherwise.	Same as above

(Continued)

Table 1: Variable definitions—*continued*

Part 3: Legal environment variables

Legal	Development of market intermediaries and the legal environment index, a sub-category of the Fan-Gang Index which is estimated by Fan Gang and published in the 2018 NERI Report.	Marketization Index of China's Provinces: NERI Report 2018
HLegal	Dummy variable, equals to one if the legal index of a province is equal to or above the median of the legal indexes for all provinces; otherwise it is zero.	Same as above

Part 4: Geographic distance variables

Dist	Average distance between the firm and its largest institutional investors among the top 5 shareholders. This variable is estimated as the equally weighted average distance, in hundreds of miles (only those investors are include in the distance calculation for whom location data were available).	Investor coordinates collected from map website. CSMAR: China Listed Firms Research Series - China's Listed Firms' Basic Information
Own	Total ownership of the largest institutional investors among the top 5 shareholders.	CSMAR: China Listed Firm Research Series - Top 10 Shareholders
Long	Dummy variable, equal to one if the largest institutional investors hold shares for at least four quarters, and zero otherwise.	Same as above
LongDist	Equals Long*Dist	Same as above
LongOwn	Equals Long*Own	Same as above

(Continued)

Table 1: Variable definitions—*continued*

Control variables

Firm size	Natural logarithm of total assets.	CSMAR: China Stock Market Financial Statements Database
ROA	Net income over total assets.	CSMAR: China Stock Market Financial Statements Database
Stock return	Average of the daily stock returns during a one-year window ending one quarter prior to the lawsuit filing quarter.	CSMAR: China Stock Market Series - Stock Trading
BM	Total assets over market value.	CSMAR: China Listed Firms Research Series - Financial Indices
Tobin's Q	Sum of the market value of equity and the book value of debt over the sum of the book value of equity and the book value of debt.	CSMAR: China Listed Firms Research Series - Financial Indices
Leverage	Book value of total liabilities over book value of total assets.	CSMAR: China Listed Firms Research Series - Financial Indices - Risk Level
Audit	Dummy variable, equals to one if a firm's auditor is a Big Four accounting firm, and 0 otherwise.	CSMAR: China Listed Firms Research Series - Financial Forecasts

Table 2: Summary statistics

This table reports the summary statistics (i.e., the mean, median, and standard deviation) as well as the results for mean and median equality tests for all sample variables. Panel A provides basic information for the number of lawsuits from 2009 to 2018, classified by year, industry, and violation type. The total number of observations in the last column is different from those in columns 2 and 4 because many of our sample firms were accused of violating multiple regulations at the same time. Panel B provides summary statistics relating to state ownership, qualified foreign institutional investor (QFII) ownership, the legal environment index, and the geographic distance between firms and their largest institutional investors with pairwise differences in means (*t*-test) and medians (Wilcoxon test) between the subgroups. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Litigation time series by year, industry, and violation type

Distribution by year		Distribution by industry		Distribution by violation type	
Year	N	Industry class	N	Type	N
2009	94	Finance	98	Fictitious Profit	126
2010	115	Public Utility	369	Fictitious Assets	15
2011	199	Properties	164	False Recording	749
2012	335	Conglomerates	105	Delayed Disclosure	1,250
2013	344	Industrials	1696	Material Omission	992
2014	289	Commerce	155	False Disclosure (Other)	291
2015	286			Fraudulent Listing	3
2016	312			Unauthorized Fund Use	70
2017	280			Corporate Assets Occupied	149
2018	333			Insider Trading	3
				Illegal Stock Trading	53
				Stock Price Manipulation	2
				Illegal Guarantee	94
				Mishandling of General Accounting	442
				Others	1809
Total:	2,587		2,587		6,048

(Continued)

Table 2: Summary statistics—*continued*

Panel B: Mean and median equality tests between the two sub-samples.

Variable	Sued firms			Non-sued firms			t-test	Wilcoxon test
							Means	Medians
	N	Mean	Median	N	Mean	Median	(p-value)	(p-value)
State Owned	2,098	0.345	0.000	86,489	0.391	0.000	0.000***	0.000***
QFII	1,697	0.001	0.000	72,039	0.001	0.000	0.000***	0.000***
LOwnQ	1,697	0.029	0.000	72,039	0.050	0.000	0.000***	0.000***
Legal	1,634	8.315	7.400	63,339	9.136	8.620	0.000***	0.000***
HLegal	1,634	0.442	0.000	63,339	0.505	1.000	0.000***	0.000***
Own	975	0.051	0.030	41,475	0.058	0.032	0.006***	0.005***
Dist	975	7.163	6.642	41,475	6.994	6.589	0.321	0.045**
LongOwn	1,144	0.038	0.015	50,873	0.042	0.016	0.070*	0.739
LongDist	1,144	4.121	2.255	50,873	4.033	1.946	0.571	0.246
Lsize	2,098	8.230	8.060	86,492	8.307	8.100	0.008***	0.109
ROA	2,098	0.026	0.015	86,492	0.035	0.023	0.000***	0.000***
Stock return	2,098	0.001	0.000	86,492	0.001	0.000	0.000***	0.110
BM	2,098	0.608	0.616	86,492	0.603	0.603	0.412	0.204
Tobin's Q	2,098	2.638	2.016	86,492	2.735	2.104	0.030**	0.011**
Leverage	2,098	1.878	1.151	86,492	1.483	1.083	0.000***	0.000***
Audit	2,098	0.032	0.000	86,492	0.064	0.000	0.000***	0.000***

Table 3: The effect of state ownership on corporate litigation risk

This table reports the results for the full sample of estimations of state-owned ownership. We use binary logistic regression which we formulate in section 4.1. Variable definitions are provided in Table 1. Model 1 only include control variables, Model 2 we add our independent variable in. We also control year and industry fixed effects in our models. Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

The effect of state ownership on corporate litigation risk		
	Model 1	Model 2
State owned		-0.222***
		(0.001)
Lsize	-0.042	-0.014
	(0.136)	(0.629)
ROA	-7.602***	-7.852***
	(0.000)	(0.000)
Stock return	-10.800***	-10.934***
	(0.004)	(0.003)
BM	-0.102	-0.150
	(0.556)	(0.388)
Tobin's Q	0.008	0.002
	(0.659)	(0.926)
Leverage	0.067***	0.070***
	(0.000)	(0.009)
Audit	-0.687***	-0.691***
	(0.000)	(0.000)
Intercept	-3.285***	-3.332***
	(0.000)	(0.000)
Year and Industry FE	Yes	Yes
Observations	88,590	88,587
Pseudo R$_2$	0.023	0.024
Chi-square (p-value)	0.000	0.000

Table 4: The effect of qualified foreign institutional investor (QFII) ownership on a firm's litigation risk

This table reports the results for the full sample of estimations of the QFII ownership. We use binary logistic regression which we formulate in section 4.2. Variable definitions are provided in Table 1. Model 1 includes the ownership variable which denotes the total QFII ownership in a firm. Model 2 shows the result of long term QFII effect, LOwnQ equals one if the QFII hold shares for at least four quarters, and zero otherwise. Models 3 shows the full model that contains the interaction of QFII and the dummy LOwnQ. Year and industry fixed effects are controlled in our models. Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

The effect of qualified foreign institutional investor (QFII) ownership on a firm's litigation risk

	Model 1	Model 2	Model 3
QFII	-14.822**		-6.951
	(0.046)		(0.358)
LOwnQ		-0.370**	-0.581***
		(0.018)	(0.000)
QFII*LOwnQ			11.390
			(0.145)
Lsize	-0.018	-0.017	-0.015
	(0.561)	(0.590)	(0.683)
ROA	-7.699***	-7.673***	-7.481***
	(0.000)	(0.000)	(0.000)
Return	-11.652***	-11.702***	-11.279***
	(0.004)	(0.004)	(0.000)
BM	-0.069	-0.069	0.076
	(0.717)	(0.720)	(0.685)
Tobin's Q	0.012	0.012	0.011
	(0.574)	(0.583)	(0.567)
Leverage	0.067***	0.067***	0.073***
	(0.000)	(0.000)	(0.000)
Audit	-0.771***	-0.766***	-0.746***
	(0.000)	(0.003)	(0.000)
Intercept	-3.457***	-3.495***	-3.518***
	(0.000)	(0.000)	(0.000)
Year and Industry FE	Yes	Yes	Yes
Observations	73,736	73,736	73,736
Pseudo R_2	0.025	0.025	0.026
Chi-square (p-value)	0.000	0.000	0.000

Table 5: The effect of the legal environment on a firm's litigation risk

This table reports the results for the full sample of estimations of the legal environment index. Model 1 tests the effect of legal environment index of different provinces. Model 2 includes the control variables and the dummy variable HLegal, which equals one if the legal index is equal or above the median of the index, otherwise it equals zero. Models 3 shows the results for the full model that includes the interaction of Legal and HLegal. Year and industry fixed effects are controlled in our models. Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

The effect of the legal environment on a firm's litigation risk			
	Model 1	Model 2	Model 3
Legal	-0.043***		-0.009
	(0.000)		(0.676)
HLegal		-0.316***	0.703***
		(0.000)	(0.003)
Legal*HLegal			-0.073***
			(0.007)
Lsize	-0.056*	-0.051	-0.051
	(0.082)	(0.111)	(0.111)
ROA	-5.548***	-5.663***	-5.592***
	(0.000)	(0.000)	(0.000)
Stock return	-5.862	-5.995	-5.949
	(0.115)	(0.107)	(0.113)
BM	0.014	-0.012	0.002
	(0.941)	(0.948)	(0.991)
Tobin's Q	0.021	0.021	0.023
	(0.258)	(0.275)	(0.223)
Leverage	0.060***	0.061***	0.062***
	(0.000)	(0.000)	(0.000)
Audit	-0.526***	-0.540***	-0.553***
	(0.010)	(0.008)	(0.006)
Intercept	-3.098***	-3.288***	-3.307***
	(0.000)	(0.000)	(0.000)
Year & Industry FE	Yes	Yes	Yes
Observations	64973	64973	64973
Pseudo R_2	0.026	0.024	0.027
Chi-square (p-value)	0.000	0.000	0.000

Table 6: The effect of geographic distance between the firm and its largest institutional investors on the firm's litigation risk

This table reports the results for the full sample of estimations of geographic distance. Model 1 and 2 test the effect of total ownership of largest institutional investors in a firm and average distance between the firm and its largest institutional investors. Model 3 is a full model that includes the interaction of ownership and distance. Model 4 and 5 we separately test the effect of long term institutional investors' ownership and the distance between the firm and the long term investors. Model 6 shows the full model that includes long term variables and their interactions. Model 7 includes distance variable and long term QFII variable together, trying to find whether the presence of the long term QFII could weaken the distance effect or not.

The effect of geographic distance between the firm and its largest institutional investors on the firm's litigation risk

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Dist		0.007**	0.014*				0.013
		(0.046)	(0.067)				(0.192)
Own	-0.732*		0.081				
	(0.073)		(0.936)				
LOwnQ							-0.593***
							(0.000)
Own*Dist			-0.156				
			(0.193)				
LongDist					0.007	0.017***	
					(0.197)	(0.000)	
LongOwn				-0.258		0.494	
				(0.375)		(0.483)	
LongOwn*Dist						-0.210***	
						(0.000)	
LOwnQ*Dist							-0.011
							(0.238)
Lsize	-0.031	-0.043	-0.028	-0.053	-0.060	-0.052	-0.013
	(0.537)	(0.382)	(0.525)	(0.253)	(0.176)	(0.270)	(0.815)

(Continued)

Table 6: Geographic distance results—*continued*

ROA	-6.739***	-6.691***	-6.805***	-5.976***	-5.980***	-6.079***	-5.797***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Return	-0.162	-0.146	-0.259	1.525	1.667	1.643	-1.041
	(0.977)	(0.980)	(0.967)	(0.797)	(0.794)	(0.611)	(0.813)
BM	0.068	0.067	0.060	0.120	0.120	0.119	-0.006
	(0.803)	(0.808)	(0.810)	(0.643)	(0.643)	(0.675)	(0.986)
Tobin's Q	0.050**	0.048**	0.052**	0.049***	0.048*	0.051	0.058
	(0.012)	(0.016)	(0.036)	(0.006)	(0.057)	(0.110)	(0.126)
Leverage	0.077***	0.078***	0.077***	0.083***	0.084***	0.083***	0.132***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Audit	-0.763***	-0.837***	-0.749***	-0738***	-0.764***	-0.705***	-0.733***
	(0.000)	(0.000)	(0.002)	(0.000)	(0.001)	(0.003)	(0.000)
Intercept	-3.224***	-3.264***	-3.334***	-3.324***	-3.309***	-3.344***	-3.762***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Year & Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	42450	42450	42450	52017	52017	52017	41232
Pseudo R_2	0.025	0.024	0.025	0.024	0.024	0.025	0.028
Chi-square (p-value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000