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Proximity and litigation: Evidence from the geographic location of institutional investors

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Abstract

In this paper, we examine how the geographic distance between a firm and its largest institutional investors affects the firm's litigation risk. We show that geographic proximity between the firm and its largest institutional shareholders reduces the incidence of a lawsuit. Moreover, we find that geographic proximity affects the relationship between institutional investors' ownership and the litigation risk of their portfolio firms. These findings indicate that geographically proximate investors may have an informational advantage over investors who are located far away, and that this advantage manifests itself in more effective monitoring of firm management, and consequently, in lower litigation risk.

JEL classification: G23; G34; K41
Keywords: Litigation; Institutional investors; Geography; Monitoring; Corporate governance

1. Introduction

This paper addresses the question of whether the geographic proximity of the financial institution to its portfolio firm affects the litigation risk on the part of the firm. We study the effect of geography on litigation, while simultaneously capturing other core features of institutional investments such as ownership concentration and investment horizon. To the best of our knowledge, no previous study has tested the importance of physical distance between an institution and its portfolio firm in explaining litigation risk.

The extant literature documents that corporate misconduct that leads to litigation causes significant and often irreparable damage to firm value as well as heavy losses to investors (e.g., DuCharme et al., 2004; Haslem, 2005; Karpoff et al., 2008; Gande and Lewis, 2009; Atanasov et al., 2012). Moreover, market penalties have been shown to be considerably more severe than the legal penalties imposed on a sued firm. For example, Karpoff et al. (2008) report that a sued firm tends to lose about 40% of its market capitalization upon the announcement of a lawsuit. The authors show that the reputational damage is about 7.5 times higher than the legal penalties/settlement paid by the firm.

At the same time, the shareholder litigation literature shows that institutional investors, via their monitoring activities, can significantly affect a firm's litigation risk (e.g., Talley, 2009; Cheng et al., 2010; Pukthuanthong et al., 2017). Institutional monitoring includes extracting and gathering information from and about a firm's management, as well as persuading, influencing, and exerting pressure on the firm's top decision-makers. In addition, the literature suggests that institutional monitoring is performed through private channels rather than through high-profile proxy voting (e.g., Carleton et al., 1998). The evidence indicates that private communications with a firm's management lead to more effective monitoring. Exploring the impact of institutional investors on a portfolio firm's litigation risk, Pukthuanthong et al. (2017) document

that ownership by institutional investors with long-term investment horizons tends to decrease a firm's litigation risk, whereas short-term institutional ownership increases that risk. They argue that long-term investors have better knowledge of the firm's projects and its management and are better able to forecast the firm's future. In addition, institutions with large ownership stakes should benefit from economies of scale, which lower their cost of monitoring and allow them to take advantage of improved firm governance and better performance. Thus, while short-term investors tend to exit bad investments, long-term investors have a strong incentive and more leverage to monitor management and influence firm decisions.

Arguably, the effectiveness of institutional control can be further increased through the geographic proximity of the institution to the firm. Prior research implies that geographic closeness facilitates formal and informal communication and collaboration. For example, Coval and Moskowitz (2001) show that institutional investors who are located close to their portfolio firms have a significant informational advantage over investors who are located far away. Geographic proximity enables institutions to gain access to private information and to obtain public information at a lower cost. Similarly, Ayers et al., (2011) demonstrate that close geographic proximity between a firm and a monitoring institution leads to more efficient information exchanges.

The above studies provide interesting insights that spur our investigation into whether geographically proximate institutions deter litigation through more effective monitoring. Since corporate misconduct that leads to litigation often causes considerable losses to investors (Karpoff et al., 2008), institutions that hold a large position in a firm or positions that are potentially difficult to liquidate may choose not to file a lawsuit against a firm's unethical management to shield themselves from possible losses and negative publicity. Instead, they may

prefer to strengthen the monitoring intensity of their portfolio firms ex-ante and to monitor via other mechanisms such as private negotiations. All else equal, the outcomes of such private negotiations should depend on the geographic location of the institutions vis-à-vis the monitored firms. Therefore, institutions located in proximity to their monitored firms should be able to monitor more effectively than institutions domiciled in more remote locations. Consequently, we expect a positive association between the incidence of lawsuits and geographic distance between institutions and their portfolio firms.

Our findings are supportive of our predictions. We find that firms that are located in closer proximity to their investors have lower litigation risk. More specifically, we show that large institutional investors with close proximity to the firms' headquarters diminish the probability of a lawsuit. Further, we find that investors' geographic closeness to an investee firm affects the relationship between the investors' ownership and the firm's litigation risk. More specifically, for the largest long-term institutional investors we find that the closer the investors are located to the firm, the more their stock ownership decreases the firm's litigation risk. The results for the largest short-term investors show that when the investors are geographically close to their investee firm, the positive effect of their ownership on the firm's litigation risk is weaker.[1] These findings imply that geographically proximate investors have an informational advantage over investors located far away. This advantage manifests itself in less costly and more effective monitoring and, as a consequence, a lower incidence of litigation against the firm. Our results are robust to potential endogeneity of the regressors in our empirical model. In addition, the findings continue to hold after taking into account different measurement methodologies and alternative econometric specifications.

[1] It is worth noting that even though the word "positive" normally implies "*good,*" in this case it has to be understood as "increasing the firm's litigation risk" and thus as a *bad* effect for the firm. The opposite holds true for the word "negative" in the same context.

Our paper contributes to several strands of the literature. First, it adds to the research on financial risk (e.g., Cheng et al., 2010; Atanasov et al., 2012; Hanley and Hoberg, 2012; Brochet and Srinivasan, 2014) by showing that a firm's litigation risk is significantly lower if institutional investors with concentrated holdings are headquartered in proximity to the monitored firm. Second, it contributes to the body of work on the relevance of geography by providing evidence for an explicit link between the geographic proximity of institutional investors and firm behavior. In addition, we document important interaction effects suggesting that (1) geographic closeness strengthens the already negative effect of institutional ownership by long-term investors on an investee firm's likelihood of being sued, and (2) investor-firm proximity weakens the positive relationship between short-term institutional ownership and portfolio-firm litigation risk. Finally, our study extends the literature that examines the specific channels through which institutional investors affect a firm's internal control mechanisms.[2] To the best of our knowledge, there is no study to date that has documented the importance of geographic proximity in determining a firm's litigation risk. Our findings are not only important for academics, but also for practitioners and policy makers, as they highlight the role of institutional investors in closely monitoring their portfolio firms and in addressing potentially serious issues early on (i.e., before they become litigable).

The remainder of the paper is organized as follows. In Section 2 we review the literature and develop our hypotheses. In Section 3 we describe our data sources, sample construction, and the variables used in the empirical analysis. In Section 4 we outline the methodology. In Section 5 we present the results, while in the following section we provide a series of robustness tests. We conclude in Section 7.

[2] For a comprehensive review of this literature, see Edmans (2014).

2. Related literature and hypotheses development

Our paper builds on several strands of the theoretical and empirical finance literature. First, extending research on financial risk, our work draws on several studies focusing on the risk associated with corporate litigation. Existing empirical research indicates that corporate misconduct frequently results in irreparable damages to shareholders. Losses can be enormous and include legal costs and penalties, settlement payments, significant business disruptions and, most importantly, reputation damages (e.g., DuCharme et al., 2004; Haslem, 2005; Karpoff et al., 2008; Gande and Lewis, 2009; Atanasov et al., 2012). Studies by Bhagat et al., (1994), Bizjak and Coles (1995), and Bhagat et al., (1998) investigate the effect of inter-firm lawsuits on firm value. These studies report a significant decline in a firm's stock price on the date of the lawsuit initiation. In a related paper, Karpoff et al. (2008) posit that the largest penalties on the firm are imposed by the markets rather than by legal authorities. Further, Gande and Lewis (2009) report a significant and negative effect of shareholder-initiated class action lawsuits on the sued firm's stock price. In line with prior research, the authors report a significant and negative stock price reaction on the date of the lawsuit filing. Moreover, they show that in anticipation of a lawsuit, investors partially capitalize their losses, and that the negative effect of this capitalization on the firm's stock price is considerably stronger than the effect observed on the filing date. Because litigation is so costly, it can be used as a disciplinary device by institutional investors (Cheng et al., 2010). On the other hand, for essentially the same reason, stakeholders may want to avoid litigation. Lowry and Shu (2002) argue that one way to reduce a firm's likelihood of being sued is to impose more intense scrutiny over the firm's activities.

The second strand is concerned with incentives for large institutional shareholders to monitor firms' management. Finance theory predicts that stronger monitoring on the part of large

outside investors reduces agency costs and moral hazard problems. For example, Shleifer and Vishny (1986) argue that large investors have the right incentives to curb the tendency of a firm's managers to undertake negative NPV projects, as they hold large enough stakes to absorb the costs of monitoring. Further, Noe (2002) and Edmans and Manso (2011) suggest that effective monitoring can be performed not only by a single large shareholder but by multiple large investors acting together. Moreover, their models predict that investors will intervene and interact directly with management to influence the decision-making process whenever there is a need for increased vigilance. Consistent with these theories, empirical research finds that institutional investors diminish managerial opportunism. For example, Hartzell and Starks (2003) show that the sensitivity of managerial pay to firm performance is significantly higher when the monitoring by institutions is more intensive. Chen et al., (2007) document that institutional investors influence management decisions to make higher quality takeovers, and Cheng et al. (2010) indicate that institutions improve board independence. Other studies on institutional intervention in corporate activity suggest that institutional monitoring is often performed through private channels rather than through high-profile proxy voting (e.g., Carleton et al., 1998), indicating that private communication with a firm's management allows monitoring to be more effective. Simultaneously, a number of studies on shareholder litigation document that institutional investors influence firms' litigation risk using various monitoring mechanisms (e.g., Talley, 2009; Cheng et al., 2010; Pukthuanthong et al., 2017). It has also been documented that the size of the investment stake and the investment horizon of the institution are significant determinants of the monitoring outcomes (e.g., Parrino et al., 2003; Cronqvist and Fahlenbrach, 2008; Pukthuanthong et al., 2017). These studies suggest that larger shareholders have better abilities and stronger incentives to monitor. Simultaneously, the literature distinguishes between

long- and short-term investors based on the expected investment horizons of their portfolio holdings. It has been argued that these two types of investors have different monitoring incentives (e.g., Gaspar et al., 2005; Chen et al., 2007; Derrien et al., 2013). Long-term shareholders care about long-term value creation due to the fact that their holdings cannot be easily liquidated; therefore, they are more likely to perform viable monitoring of the firm's activities. Short-term investors, on the other hand, tend to pursue quick profit opportunities due to the time-varying nature of their portfolio strategies and engage less in active oversight of the management. As a result, they are said to "vote with their feet" and sell their shares if they are unhappy with firm performance (Parrino et al., 2003; Chen et al., 2007). This heterogeneity in investor type has been shown in the literature to have implications for corporate behavior. For example, long-horizon shareholders tend to induce managers to engage in more profitable acquisitions (Chen et al., 2007) and to pursue higher investment rates, less debt financing, and lower payout ratios (Derrien et al., 2013), whereas short-term investors are associated with lower research and development expenditures (Bushee, 1998), significantly lower abnormal returns from mergers, higher long-run underperformance (Gaspar et al., 2005), and indifference to corporate social responsibility activities (Nguyen et al., 2018). In the context of litigation risk, Pukthuanthong et al. (2017) show that firms with greater ownership of long-term institutional investors have lower litigation risk, while firms with a greater representation of short-term institutional owners are at higher risk of being sued.

Third, our study is related to the body of literature that investigates the relevance of geographic proximity between investors and their portfolio firms. For example, Coval and Moskowitz (1999, 2001) show that financial institutions preferentially hold positions in local firms that are domiciled in proximity to their headquarters. Their findings suggest that

institutions select nearby firms to benefit from the superior information obtained via closer monitoring and access to the same social circles. The authors argue that geographic proximity allows for better information exchanges during on-site visits and conversations with key staff, suppliers, and customers. More recently, Baik et al., (2010) found that geographic proximity facilitates the transfer of private information from the firm to its institutional investors. Their results suggest that the informational advantage is greater for institutions with larger ownership stakes in their portfolio firms, but does not vary with other institutional characteristics such as the institution's investment horizon or trading style. A related body of work extends this literature and corroborates the above findings concerning the economic importance of proximity. For instance, Bodnaruk (2009) finds that individual investors prefer to invest in firms if they are in physical proximity to one of the firm's offices or production facilities. Moreover, when investors relocate, they rebalance their portfolios by selling stocks of firms that have now become remote and by investing in firms that are closer to their new location. Bae et al., (2008) show that because of their proximity advantage, earnings forecasts of domestic analysts are more precise than forecasts produced by foreign analysts. Ayers et al. (2011) find that insiders are less likely to exercise discretion in financial reporting, if institutional investors are located in geographic proximity. Mazur and Salganik-Shoshan (2017) show that proximity among institutional investors has a positive impact on the efficiency of the corporate incentive system. Moreover, Giroud (2013) presents evidence that manufacturing plants that are located in geographic closeness to their headquarters, and are thus monitored more effectively, benefit from greater investment and higher productivity.

Motivated by these three literature streams, our study aims to provide new and additional insights into the question of how institutional investors can curb managerial behavior.

Specifically, we focus on the link between the geographical proximity of institutions to their portfolio firms and the probability of litigation against those firms. Our first hypothesis can be summarized as follows: physical proximity of institutional investors to a firm's headquarters reduces the probability of litigation against that firm. This hypothesis is based on the evidence documented by the aforementioned literature, which suggests that geographic proximity of institutional investors to a firm facilitates the transfer and acquisition of both public and private information and thereby enables more efficient monitoring. Thus, nearby institutions, i.e., investors who have the actual ability as well as strong incentives to monitor, can be expected to be more capable of influencing the firm's management to undertake value-enhancing ventures and to behave ethically, i.e., to avoid misconduct. We therefore formulate our first hypothesis as follows:

Hypothesis 1: *The geographic distance between a firm and its largest institutional investors increases the firm's litigation risk. Thus, the larger the distance between the largest institutional investors and the firm, the higher the firm's litigation risk.*

It is not clear from the literature whether the effect of geographic distance can be expected to differ for investors with long- and short-term investment horizons. To account for potential differences in the effect for long-term and short-term investors, we test the hypotheses for each investor type separately. The extant literature does not identify any reasons for the effect to be opposite for the two types of investor. Consequently, we expect Hypothesis 1 to be valid for both types of investor.

Further, we focus on the potential mediating effect of the distance between a firm and its largest institutional investors on the previously documented impact of institutional stock ownership on firm litigation risk. Consistent with prior studies, we predict that closer geographic

proximity between institutional investors and a firm allows for less costly and more effective monitoring, which will correspondingly affect the relationship between institutional ownership and litigation risk. In particular, given the differential effect of long-term versus short-term institutional investor ownership on litigation likelihood documented by Pukthuanthong et al. (2017), we expect that closer geographic proximity to the largest long-term (short-term) institutional investors will strengthen (weaken) the negative (positive) relationship between long-term (short-term) institutional stock ownership and the firm's litigation risk. Thus, our second hypothesis is as follows:

Hypothesis 2: *The larger the distance between a firm and its largest long-term (short-term) institutional investors, the weaker (stronger) the positive (negative) influence of the investors' stock ownership on the firm's litigation risk.*

The above relationship highlights the impact of geographic proximity on the strength of monitoring by institutions as well as the substitutability effect between proximity and equity ownership.

3. Data description

3.1. Data

We consider all non-IPO related securities class action lawsuits filed under Section 10b(5) of the 1934 Securities Exchange Act with filing dates between January 1996 and December 2007, as listed in Stanford's SCAC[3]. We classify lawsuits into nine allegation groups based on the lawsuit descriptions provided by Stanford's Securities Class Action Clearinghouse, the Securities Class Action Alert (a monthly newsletter published by Institutional Share

[3] http://securities.stanford.edu.

Shareholder Services), and the U.S. Department of Justice's PACER database.[4] In addition, we classify lawsuits by industry based on the Fama-French 12 industry classification.

We collect information on institutional holdings and financial statements, as well as market data and distance data, for sued firms one quarter prior to their lawsuit filing dates. For non-sued firms (i.e., all firms in the Thomson Reuters 13F database other than the sued firms), we retrieve market and financial statement information at the end of the same quarter.

Quarterly institutional stock holdings and related information are collected from Thomson Reuters' Institutional Holdings (13F) database, formerly known as the CDA/Spectrum database.[5] Financial statement data are collected from the Compustat quarterly files to facilitate matching with the quarterly institutional holdings data. Stock price data are collected from the Center for Research in Security Prices (CRSP).

Our final sample of sued firms has 1,160 observations with complete information on the lawsuit, the institutional investors' ownership and geographic distance, and all key financial statement and market variables. Finally, we include all non-sued firms in the Thomson Reuters 13F database as a comparison benchmark.

3.2. Variables

First, we define a litigation variable, *Sued*, which is set to one if a firm is sued during the sample period and zero otherwise.

[4] http://www.pacer.gov.

[5] Every quarter, money managers have to file Form 13F with the SEC, which contains information on the ownership of institutional managers with $100 million or more in assets under management.

Further, in our analysis, we focus our attention on a firm's five largest institutional investors and distinguish between short- and long-term investors.[6] For this purpose, we follow the procedure used by Chen et al. (2007). Specifically, for each portfolio firm and each quarter listed in the Thomson Reuters 13F database, we first identify the five largest institutional investors based on their shareholdings, and then categorize those institutional investors as either short-term or long-term based on their investment horizon. If an institutional investor is among a firm's five largest institutional investors for at least the last four quarters, it is considered a long-term investor; if the institutional investor is among the five largest institutional investors for less than four quarters, it is considered a short-term investor.

Next, for each investor type, we construct a measure of geographic distance. More specifically, at the end of each quarter, we calculate for each firm and for each investor type the equally-weighted average distance between the firm's headquarters and the given investor type using the five largest institutional investors (i.e., *LongDist* for long-term investors and *ShortDist* for short-term investors).

In the next step, we aggregate institutional ownership information for each firm and for each quarter based on the type of institutional investor. Specifically, we construct two variables: *LongOwn*, which denotes the total ownership by long-term institutions among the largest five investors; and *ShortOwn*, which is the corresponding variable calculated for short-term institutions.

Finally, following previous studies, we control for various variables that might affect a firm's probability of being sued, including firm size, profitability, growth opportunities, leverage, accruals, stock return, stock return volatility, exchange listing, as well as industry and

[6] We follow the literature on institutional monitoring, which suggests that only large, long-term institutional investors monitor (e.g., Brickley et al., 1988; Chen et al., 2007; Dharwadkar et al., 2008; Burns et al., 2010; Ayers et al., 2011).

year dummy variables. We use the natural log of a firm's total market capitalization in 1996 dollars to measure the size of a firm (*Firm Size*). Larger firms are more likely to be included in portfolios of institutional investors, especially when institutional investors have indexed portfolios. When there is a large investment in a large firm, institutional investors have a greater incentive to monitor and affect the firm's governance (e.g., Cheng et al., 2010; Gillan and Starks, 2000). Therefore, the risk of litigation is likely to be alleviated for these firms because of the close monitoring by institutional investors. On the other hand, large firms may be more likely to be sued by institutional investors than small firms because there is a greater chance that the investors will be able to extract a sizeable settlement (Alexander, 1991). The exact sign of this variable is thus an empirical question. We use the return on assets (*ROA*) to control for a firm's profitability. We argue that managers of profitable firms have less incentive to engage in illegal activities and thus a lower risk of being sued. Following the literature, we also include a firm's stock return (*Stock Return*) and book-to-market (*Book-to-Market*) to measure performance. Similar to our *ROA* measure, we argue that a higher stock return and a lower book-to-market ratio indicate superior performance and thus lower firm's litigation risk. Moreover, we include stock return volatility (*Volatility*) to control for the riskiness of the firm. Furthermore, we include financial leverage (*Leverage*) because firms with higher leverage have been shown to more frequently engage in fraud or earnings manipulation to avoid debt covenant violations (Defond and Jiambalvo, 1994; Cheng et al., 2010). In addition, we employ accruals (*Accrual Ratio*) because Peng and Röell (2008) show that firms with high accruals are subject to a higher probability of litigation. Moreover, we include a dummy variable that identifies exchange listed firms (*US Listed Dummy*) and a dummy variable that indicates whether or not a firm's auditor is a Big Four or Big Five accounting firm (*Big 4 Dummy*). We expect that a higher quality auditor

will improve a firm's disclosure quality and discipline management, thus lowering the firm's litigation risk. The extant literature has shown that firms in certain industries may face higher litigation risk than firms operating in other sectors. For example, Francis et al. (1994) show that technology firms and firms in retail industries are more likely to be sued. To account for these findings, we include industry dummy variables (based on two-digit SIC codes) to control for any time-invariant, unobservable industry factors. In addition, we include year dummies to control for potential differences in litigation activity across years.

All variables, except the dummy variables, are winsorized at the top and bottom 0.5% to reduce the impact of outliers. In addition, all dollar amounts are adjusted for inflation. The Appendix provides the definition and data source for each of the aforementioned variables.

3.3. Descriptive statistics

Table 1 provides descriptive statistics for the litigation data and for the main institutional and control variables used in this study. For each variable, the table reports the results of a *t*-test comparing our sued and non-sued subsamples.

Insert Table 1 about here

Panel A of Table 1 provides litigation summary statistics for our sample of 1,160 sued firms. Specifically, the panel reports summary statistics for our sued-firm sample by year, by industry (based on the Fama-French 12 industry classification), by allegation type, and based on whether or not the firm is traded on a major U.S. stock exchange.

The number of lawsuits per year does not vary much between 1998 and 2005 (mean 118 and range 96-135, with the largest number of cases occurring in 2002). Comparatively fewer cases are filed before 1998 and after 2005. Business equipment firms (Industry 6) account for

more than 32 % of all cases. Chemical firms (Industry 5) have the lowest number of lawsuits, being the target of only 1.2 % of all cases during our sample period. The panel also provides details on the nature of the primary alleged fraud in each complaint. In our sample, misleading and/or false statements (Alleg 1) account for approximately 25 % of all lawsuits, followed by failures to disclose existing business problems and misrepresentations about the firm's financial condition (Alleg 3), which account for 16.7 % of all lawsuits. In addition, more than 73% of our sample firms are traded on a major U.S. stock exchange.

In Panel B of Table 1, we provide descriptive statistics for our key institutional variables, distance measures, and control variables for our sued and non-sued firm sub-samples. This panel also reports results for a series of mean and median equality tests of our variables between the sub-samples. These tests reveal significant differences for most of the ownership and distance variables between the two sub-samples, providing initial evidence that these variables affect a firm's litigation risk.

For instance, we find that both the mean and median ownership by long-term institutions among the five biggest investors (*LongOwn*) are significantly higher for non-sued firms than for sued firms (significant at the 1% level). In contrast, our short-term ownership measure is significantly higher for sued firms than for non-sued firms. This difference between long- and short-term ownership suggests that long-term institutional investors have stronger incentives to monitor their firms than short-term investors, who instead "vote with their feet." Our equality tests further indicate that the distance variables (*LongDist* and *ShortDist*) are significantly higher (at the 1% level of significance) for sued firms than for non-sued firms, thus supporting Hypothesis 1.

In line with our expectations, we also observe that sued firms have a lower book-to-market ratio and a higher stock return volatility than non-sued firms. In addition, consistent with Alexander's (1991) deep pocket argument, sued firms tend to be larger.

Panel C of Table 1 provides the Pearson correlation coefficients between all variables in our full sample. The correlation matrix suggests a weak and negligible relation between most variable pairs, thereby erasing any multicollinearity concerns.

4. Model specification

4.1. The effect of distance on litigation risk

To test Hypothesis 1, we examine how the geographic distance between the largest institutional investors and their portfolio firms affects the firms' litigation risk. We also account for potential differences in this effect between investors with short- and long-term investment horizons.

More formally, we construct the following logit regression:

$$\ln\left(\frac{Prob(Suit_i = 1)}{Prob(Suit_i = 0)}\right) = \alpha + \beta_1 LongDist_i + \beta_2 ShortDist_i + \gamma_1 LongOwn_i + \gamma_2 ShortOwn_i + \\ + \sum_{n=1}^{N} \delta_n Controls_i + YearDummies + IndustryDummies + \varepsilon_i, \quad (1)$$

where $Suit_i$ is a dummy variable that equals one if firm i is sued during our sample period and zero otherwise. Thus, our dependent variable is defined by the log-odds ratio $\ln\left(\frac{Prob(Suit_i=1)}{Prob(Suit_i=0)}\right)$. $LongDist_i$ ($ShortDist_i$) is the geographic distance variable estimated as the equally-weighted average distance, in hundreds of miles, between a firm and its largest long-term (short-term) investors (see Appendix for details). $LongOwn_i$ ($ShortOwn_i$) is the ownership variable estimated as the total ownership by long-term (short-term) institutions among the five largest institutional

investors (see Appendix for details). *Controls* are our control variables chosen based on the relevant literature and explained in detail in the Appendix. Following previous studies, we also include year and industry dummies.

4.2. The effect of distance on the institutional ownership-litigation risk relationship

To test our Hypothesis 2, we examine how geographic distance between the largest institutional investors and the firm affects the relationship between institutional stock ownership and a firm's litigation risk. As in the previous analysis, we distinguish between short- and long-term investors.

For this analysis, we again employ a logit regression, expressed by the following equation:

$$\ln\left(\frac{Prob(Suit_i = 1)}{Prob(Suit_i = 0)}\right)$$

$$= \alpha + \beta_1 LongOwn_i \times LongDist_i + \beta_2 ShortOwn_i \times ShortDist_i + \gamma_1 LongOwn_i + \gamma_2 ShortOwn_i +$$

$$+ \sum_{n=1}^{N} \delta_n Controls_i + YearDummies + IndustryDummies + \varepsilon_i, \quad (2)$$

where all variables, other than the interaction terms, are the same as in equation (1). The interaction variables $LongOwn_i \times LongDist_i$ and $ShortOwn_i \times ShortDist_i$ are the products of the corresponding ownership and distance variables outlined in the previous sub-section, and reflect the effect of the geographic distance between the largest long-term (short-term) institutional investors and the firm on the ownership-litigation risk relationship.

5. Empirical results

5.1. The effect of distance on litigation risk

Table 2 reports the results for the full and reduced versions of our logistic regression estimations summarized in equations (1) and (2).

Insert Table 2 about here

More specifically, Model 1 reports the results for a base case analysis that only includes the control variables. Models 2 to 4 include the control variables and ownership variables for each investor type separately (Models 2 and 3), and for both investor types simultaneously (Model 4). Our results are in line with the findings of Pukthuanthong et al. (2017) indicating that larger levels of long-term (short-term) institutional investor ownership decrease (increase) the litigation risk of the investee firm.

Models 5 to 7 include our controls and distance variables for short- and long-term investors separately (Models 5 and 6), and for the two investor types together (Model 7). When we run our analysis separately for Models 5 and 6, respectively, the distance effect is positive and significant for both types of investors, suggesting that the larger the distance between the largest institutional investors and the investee firm, the greater the firm's litigation risk. When we conduct our analysis with the distance variables for both investor types included simultaneously (Model 7), the coefficient for the short-term investor distance variable remains positive, but loses its significance. Therefore, the results for Models 5 to 7 mostly support Hypothesis 1 that geographic distance between the largest institutional investors and the firm increases a firm's litigation risk, while the evidence for short-term investors is weaker.

Model 8 (9) includes the long-term (short-term) ownership and distance variables along with the control variables. Model 10 represents the full model as expressed by equation (1). Besides the controls, it accounts for the ownership and distance variables of both investor types simultaneously. The results for Models 8, 9, and 10 confirm the findings reported for Models 5,

6, and 7. The results reveal that a larger distance between the largest institutional investors and the firm is associated with a greater litigation risk for the firm; the evidence is again stronger for the long-term institutional investors than for short-term investors.[7]

5.2. The effect of distance on the institutional ownership-litigation risk relationship

Models 11 and 12 of Table 2 reflect the analysis expressed by equation (2), but consider each investor type separately. More specifically, Model 11 (12) includes the largest long-term (short-term) institutional ownership together with the interaction of this variable with the distance between the largest long-term (short-term) institutional investors and the firm. Our estimation results for Model 11 show that the larger the distance between the largest long-term institutional investors and the firm, the weaker the negative relationship between the stock ownership of the largest long-term investors and the investee's firm litigation risk. Further, the results for Model 12 reveal that the larger the distance between the largest short-term institutional investors and the firm, the stronger the positive relationship between the institutions' stock ownership and the firm's litigation risk. These results are supportive of Hypothesis 2.

When we repeat our analysis but include the ownership variables and interaction terms for both types of investors simultaneously (Model 13 in Table 2), the coefficient for the interaction variable for the largest short-term institutional investors declines considerably (both in its absolute value and compared to the corresponding coefficient for the largest long-term institutional investors), and loses its statistical significance.

To summarize, our results indicate that the geographic distance between a firm and its largest long-term institutional investors negatively affects the relationship between the investors'

[7] In Model 10, the coefficient for the distance between the largest short-term institutional investors and the firm is positive, but insignificant. Moreover, it appears to be considerably lower than the coefficient for the largest long-term institutional investors. However, the difference in the coefficients is statistically insignificant. The respective coefficient difference tests are unreported here, but are available from the authors upon request.

ownership and the firm's litigation risk, suggesting that geographically-close, long-term institutional investors provide better monitoring services to their portfolio firms than their geographically distant counterparts. For short-term investors, geographic distance is found to have a similar influence, i.e., the positive effect of short-term institutional ownership on litigation risk is reduced when the investors are close to the firm.

6. Robustness tests

6.1. Endogeneity concerns

While the ownership by local institutional investors is expected to affect a firm's litigation risk, one must also consider the possibility of reverse causality (i.e., that the investment decisions of institutions are influenced by a firm's exposure to the litigation risk)[8]. To address the potential endogeneity between a firm's litigation risk and local institutional ownership, we conduct a series of robustness checks. Following the literature on geographic distance, we employ a two-stage instrumental variables approach. Specifically, we follow Gaspar and Massa (2007) and Ayers et al. (2011) and use 25 location dummy variables as instruments representing the 25 largest cities in the U.S., plus a remote city dummy. We use these 26 variables as exogenous instruments for local and distant institutional ownership. We then use the predicted values of the potentially endogenous variable(s) obtained from the first-stage regressions in the second-stage regressions. The results for the second-stage regressions are presented in Table 3. If there is indeed an endogeneity issue, our previous results may be invalid and the results presented in Table 3 should instead be used to draw conclusions. We perform a Wald test to

[8] If reverse causality is also present, the argument that proximity provides information would also play out in the opposite direction. In other words, proximity between an institution and its portfolio firm may provide the institution with information about the probability of a lawsuit that justifies their very investment or their decision to exit the investment. We are grateful to an anonymous referee for raising these points.

address the question of whether our variables of interest are endogenous or exogeneous. The null hypothesis for the test is that there is no endogeneity for the ownership and distance variables. The results are shown in the last two rows of Table 3. The *p*-values for the tests are all above 10%, implying that we cannot reject the null hypothesis. Therefore the need for instrumental variables is eliminated and our regular model and regressions can be considered appropriate and valid.

Insert Table 3 about here

6.2. Other robustness tests

To further ensure that our results are not driven by our choices regarding sample composition and/or variable definition, we perform a number of additional sensitivity checks to examine the impact of distance and long-term versus short-term institutional investors' ownership on litigation risk. The results are shown in Panels A and B of Table 4. Specifically, Panel A provides robustness checks for Hypothesis 1, while Panel B provides robustness checks for Hypothesis 2.

Insert Table 4 about here

In Models (1) of Panels A and B, we implement alternative definitions for our distance variables, *LongDist* and *ShortDist*, by using the number of local short- and long-term investors among the five largest institutional investors, respectively, instead of the measure of the average geographic distance between the investors and the firm, which we use in our main analysis. In these models, institutional investors are defined as local if they are located within a radius of 250 miles from the firm's headquarters (e.g., Chhaochharia et al., 2012). Our results in Panel A reveal that the signs of the coefficients for *LongDist* and *ShortDist* are negative, as expected, but

are not significant[9]. Further, we retest our second hypothesis using the number of local investors as the proximity measure. Specifically, we include our ownership variables and the interactions of these ownership variables with the number of local investors as the main explanatory variables. Model (1) in Panel B presents the results. As expected, the coefficient of the interaction term between short-term ownership and our alternative distance measure is negative (-0.419) and significant at the 5% level, which means that the larger the number of local short-term investors, the weaker the positive effect of their ownership on a firm's litigation risk. This result corroborates the findings of our main analysis and supports Hypothesis 2. The coefficient of the interaction of long-term ownership and the number of local long-term institutional investors is negative (-0.434) and significant at the 10% level, indicating that greater representation of local long-term institutional investors strengthens the negative effect of their ownership on a firm's litigation risk.

In another robustness check, we examine the impact of the geographic distance between the firm and its largest investor on the firm's litigation risk.[10] Models (2)-(3) in Panel A provide the results where the largest institutional investor is a long-term (short-term) investor, respectively. The results for Model (2) indicate neither an economically nor statistically significant relationship between the proximity of the firm to its largest institutional investor and the firm's litigation risk. Thus, we do not observe that geographic closeness of the largest institutional investor to the firm reduces a firm's litigation risk when the institution has a long-term orientation. At the same time, as shown by Model (3) in Panel A, the coefficient for the

[9] In this robustness test, the sign of the coefficient for our distance measure (estimated as the number of local investors) is negative. This is opposite to the positive sign reported for the distance variable in our main analysis. These results are consistent; however, since in the main analysis we use the average distance as the distance measure.

[10] This analysis accounts for prior studies documenting the role of a single large shareholder (e.g., Admati et al., 1994; Maug, 1998; Mello and Repullo, 2004).

distance between the largest short-term investor and the firm is positive and statistically significant. In other words, when the largest investor has a short-term horizon, the closer this investor is located to the firm, the lower the firm's litigation risk. This finding is in line with our main results and support Hypothesis 1.

Next, we reexamine Hypothesis 2 for the largest institutional investor alone. Specifically, we examine how geographic distance affects the relationship between the stock ownership of this largest investor and the firm's litigation risk, for cases in which the largest investor is a long-term (Model 2, Panel B) or a short-term investor (Model 3, Panel B). The results show that the coefficient of the interaction term between ownership and distance for both the largest short- and long-term institutional investor is highly significantly and positive. For the case where the largest institutional investor is a long-term investor, this implies that as the distance between the largest long-term investor and the firm increases, the litigation risk-reducing effect of his/her ownership becomes weaker. For the case in which the largest institutional investor is a short-term investor, our findings reveal that a larger distance between this investor and the firm strengthens the positive effect of the investor's ownership on the firm's litigation risk. These findings also support Hypothesis 2.

The extant literature typically defines blockholders as shareholders who own at least 5% of a firm's total outstanding equity. Blockholders have high voting power and a strong incentive to monitor firms and thus may have a significant impact on a firm's decision-making. In Model (4) of Table 4 (Panels A-B), we perform robustness tests in which we replace the group of the five largest institutional investors with blockholders and examine the impact of the blockholders' distance on the firm's litigation risk. The results displayed in Panels A-B of Table 4 are qualitatively and quantitatively consistent with our previous findings reported in Model (13) of

Table 2. Thus, our conclusions remain unchanged when we use this alternative definition of influential investors.

In Model (5) of Table 4 (Panels A-B), we examine whether our results continue to hold when we control for changes in ownership in addition to ownership levels of the largest institutional investors. Qualitatively, the results of this robustness test do not differ from the results of our main analysis given in Table 2.

Finally, following the extant literature, we exclude financial firms from our full sample and repeat our logistic regression estimation to ensure that the potentially skewed data for financial firms does not drive our results. Model (7) in Table 4 (Panels A-B) present our results excluding financial firms. The results are consistent with the findings documented for our base-case analysis employing the full sample which are reported in Table 2.

7. Conclusion

To the best of our knowledge, empirical research that investigates the effect of geographic distance on the risk of corporate litigation is non-existent. Our study attempts to add to the body of knowledge by examining the link between the geographic proximity of institutional investors to their portfolio firms and the litigation risk of those firms. Using a comprehensive sample of shareholder class action lawsuits, we show that when institutions are located in closer proximity to a firm's headquarters, the firm's probability of being sued is significantly lower. Moreover, we find that geographic proximity affects the relationship between institutional investors' ownership and the litigation risk of their portfolio firms that has been documented in prior studies. In particular, geographic closeness between a firm and its largest long-term institutional investors strengthens the negative effect of long-term institutional ownership on the firm's litigation risk. Simultaneously, proximity between the largest short-term

investors and the firm weakens the positive effect of short-term ownership on litigation risk. In other words, long-term institutional ownership decreases litigation risk even more when the respective investors are close to the firm, while short-term institutional ownership increases litigation risk less when the investors are close to the firm.

We surmise that the aforementioned distance effects arise due to more efficient monitoring of a firm's management through easier and more frequent private communications. Physical proximity to a firm's headquarters allows institutional holders to curb managerial misconduct ex ante and thus avoid the potential damages caused by litigation. The effect is particularly acute for large investors with a long-term commitment to their investments. Our results are robust to potential endogeneity of the regressors in our empirical model, and continue to hold after taking into account different measurement methods and alternative econometric specifications. Our study has broad implications for academics, policy makers, and practitioners in law, finance, and corporate governance.

References

Admati, A. R., Pfleiderer, P., Zechner, J., 1994. Large shareholder activism, risk sharing, and financial market equilibrium. Journal of Political Economy, 102(6), 1097-1130.

Alexander, J. C., 1991. Do the merits matter? A study of settlements in securities class actions. Stanford Law Review, 43, 497-598.

Atanasov, V., Ivanov, V., Litvak, K., 2012. Does reputation limit opportunistic behavior in the VC industry? Evidence from litigation against VCs. Journal of Finance, 67(6), 2215-2246.

Ayers, B. C., Ramalingegowda, S., Yeung, P. E., 2011. Hometown advantage: The effects of monitoring institution location on financial reporting discretion. Journal of Accounting and Economics, 52(1), 41-61.

Bae, K. H., Stulz, R. M., Tan, H., 2008. Do local analysts know more? A cross-country study of the performance of local analysts and foreign analysts. Journal of Financial Economics, 88(3), 581-606.

Baik, B., Kang, J. K., Kim, J. M., 2010. Local institutional investors, information asymmetries, and equity returns. Journal of Financial Economics, 97(1), 81-106.

Bhagat, S., Bizjak, J., Coles, J. L., 1998. The shareholder wealth implications of corporate lawsuits. Financial Management, 27(4), 5-27.

Bhagat, S., Brickley, J. A., Coles, J. L., 1994. The costs of inefficient bargaining and financial distress: Evidence from corporate lawsuits. Journal of Financial Economics, 35(2), 221-247.

Bizjak, J. M., Coles, J. L., 1995. The effect of private antitrust litigation on the stock-market valuation of the firm. American Economic Review, 85, 436-461.

Bodnaruk, A., 2009. Proximity always matters: Local bias when the set of local companies changes. Review of Finance, 13(4), 629-656.

Brickley, J. A., Lease, R. C., Smith, C. W., 1988. Ownership structure and voting on antitakeover amendments. Journal of Financial Economics, 20, 267-291.

Brochet, F., Srinivasan, S., 2014. Accountability of independent directors: Evidence from firms subject to securities litigation. Journal of Financial Economics, 111(2), 430-449.

Burns, N., Kedia, S., Lipson, M., 2010. Institutional ownership and monitoring: Evidence from financial misreporting. Journal of Corporate Finance, 16(4), 443-455.

Bushee, B. J., 1998. The influence of institutional investors on myopic R&D investment behavior. Accounting Review, 73(3), 305-333.

Carleton, W. T., Nelson, J. M., Weisbach, M. S., 1998. The influence of institutions on corporate governance through private negotiations: Evidence from TIAA-CREF. Journal of Finance, 53(4), 1335-1362.

Chen, X., Harford, J., Li, K., 2007. Monitoring: Which institutions matter? Journal of Financial Economics, 86(2), 279-305.

Cheng, C. A., Huang, H. H., Li, Y., Lobo, G., 2010. Institutional monitoring through shareholder litigation. Journal of Financial Economics, 95(3), 356-383.

Chhaochharia, V., Kumar, A., Niessen-Ruenzi, A., 2012. Local investors and corporate governance. Journal of Accounting and Economics, 54(1), 42-67.

Coval, J. D., Moskowitz, T. J., 2001. The geography of investment: Informed trading and asset prices. Journal of Political Economy, 109(4), 811-841.

Coval, J. D., Moskowitz, T. J., 1999. Home bias at home: Local equity preference in domestic portfolios. Journal of Finance, 54(6), 2045-2073.

Cronqvist, H., Fahlenbrach, R., 2009. Large shareholders and corporate policies. Review of Financial Studies, 22(10), 3941-3976.

DeFond, M., Jiambalvo, J., 1994. Debt covenant violation and manipulation of accruals. Journal of Accounting and Economics, 17(1-2), 145-176.

Derrien, F., Kecskés, A., Thesmar, D., 2013. Investor horizons and corporate policies. Journal of Financial and Quantitative Analysis, 48(6), 1755-1780.

Dharwadkar, R., Goranova, M., Brandes, P., Khan, R. 2008. Institutional ownership and monitoring effectiveness: It's not just how much but what else you own. Organization Science, 19(3), 419-440.

DuCharme, L. L., Malatesta, P. H., Sefcik, S. E., 2004. Earnings management, stock issues, and shareholder lawsuits. Journal of Financial Economics, 71(1), 27-49.

Edmans, A., 2009. Blockholder trading, market efficiency, and managerial myopia. Journal of Finance, 64(6), 2481-2513.

Edmans, A., 2014. Blockholders and corporate governance. Annual Review of Financial Economics, 6, 23-50.

Edmans, A., Manso, G., 2010. Governance through trading and intervention: A theory of multiple blockholders. Review of Financial Studies, 24(7), 2395-2428.

Francis, J., Philbrick, D. Schipper, K., 1994. Shareholder litigation and corporate disclosures. Journal of Accounting Research, 32 (2), 137–164.

Gande, A., Lewis, C. M., 2009. Shareholder-initiated class action lawsuits: Shareholder wealth effects and industry spillovers. Journal of Financial and Quantitative Analysis, 44(4), 823-850.

Gaspar, J. M., Massa, M., 2007. Local ownership as private information: Evidence on the monitoring-liquidity trade-off. Journal of Financial Economics, 83(3), 751-792.

Gaspar, J. M., Massa, M., Matos, P., 2005. Shareholder investment horizons and the market for corporate control. Journal of Financial Economics, 76(1), 135-165.

Gillan, S. L., Starks, L. T., 2000. Corporate governance proposals and shareholder activism: The role of institutional investors. Journal of Financial Economics, 57(2), 275-305.

Giroud, X., 2013. Proximity and investment: Evidence from plant-level data. Quarterly Journal of Economics, 128(2), 861-915.

Hanley, K. W., Hoberg, G., 2012. Litigation risk, strategic disclosure and the underpricing of initial public offerings. Journal of Financial Economics, 103(2), 235-254.

Hartzell, J. C., Starks, L. T., 2003. Institutional investors and executive compensation. Journal of Finance, 58(6), 2351-2374.

Haslem, B., 2005. Managerial opportunism during corporate litigation. Journal of Finance, 60(4), 2013-2041.

Karpoff, J. M., Lee, D. S., Martin, G. S., 2008. The cost to firms of cooking the books. Journal of Financial and Quantitative Analysis, 43(3), 581-611.

Lowry, M., Shu, S., 2002. Litigation risk and IPO underpricing. Journal of Financial Economics, 65(3), 309-335.

Maug, E., 1998. Large shareholders as monitors: Is there a trade-off between liquidity and control? Journal of Finance, 53(1), 65-98.

Mazur, M., Salganik-Shoshan, G., 2017. Teaming up and quiet intervention. The impact of institutional investors on executive compensation policies. Journal of Financial Markets 35, 65-83.

Mello, A. S., Repullo, R., 2004. Shareholder activism is non-monotonic in market liquidity. Finance Research Letters, 1(1), 2-10.

Nguyen, P. A., Kecskés, A., Mansi, S., 2017. Does corporate social responsibility create shareholder value? The importance of long-term investors. Journal of Banking and Finance, Forthcoming.

Noe, T. H., 2002. Investor activism and financial market structure. Review of Financial Studies, 15(1), 289-318.

Parrino, R., Sias, R., Starks, L., 2003. Voting with their feet: Institutional ownership changes around forced CEO turnover. Journal of Financial Economics 68(1), 3-46.

Peng, L., Röell, A., 2008. Executive pay and shareholder litigation. Review of Finance, 12, 141-184.

Pukthuanthong, K., Turtle, H., Walker, T., Wang, J., 2017. Litigation risk and institutional monitoring. Journal of Corporate Finance, 45(C), 342-359.

Shleifer, A., Vishny, R. W. (1986). Large shareholders and corporate control. Journal of Political Economy, 94(3), 461-488.

Talley, E. L., 2009. Public ownership, firm governance, and litigation risk. The University of Chicago Law Review, 76 (1), 335-366.

Table 1
Summary statistics

Panel A: Litigation time series by industry, allegation type, and listing status

Lawsuit distribution by year		**Lawsuit distribution by industry**		**Lawsuit distribution by allegation type**		**Lawsuit distribution by exchange listing status**	
Year	*N*	FF industry class	*N*	Allegation	*N*	Type	*N*
1996	47	Industry 1	49	Alleg 1	427	Exchange	855
1997	89	Industry 2	26	Alleg 2	271	Non-exchange	305
1998	127	Industry 3	66	Alleg 3	291		
1999	119	Industry 4	16	Alleg 4	258		
2000	116	Industry 5	14	Alleg 5	257		
2001	104	Industry 6	380	Alleg 6	36		
2002	135	Industry 7	53	Alleg 7	139		
2003	120	Industry 8	31	Alleg 8	17		
2004	129	Industry 9	108	Alleg 9	38		
2005	96	Industry 10	183				
2006	61	Industry 11	100				
2007	17	Industry 12	134				
Total:	1,160		1,160		1,734		1,160

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

	Sued firms						Non-sued firms					*t*-test	Wilcoxon test
Variable	*N*	Mean	Std Dev	Lower Quartile	Median	Upper Quartile	*N*	Mean	Std Dev	Lower Quartile	Median	Upper Quartile	Mean (*p*-value)	Median (*p*-value)
LongDist	902	11.717	7.814	5.353	11.238	16.510	32700	10.932	6.772	5.759	10.444	14.546	0.001***	0.021**
ShortDist	1142	11.718	6.885	6.422	11.364	16.662	36713	10.888	6.879	5.442	10.236	14.806	0.001***	0.001***
LongOwn	1160	0.103	0.099	0.018	0.085	0.160	38869	0.114	0.112	0.020	0.088	0.176	0.001***	0.004***
ShortOwn	1160	0.124	0.085	0.061	0.108	0.173	38869	0.087	0.082	0.022	0.066	0.129	0.001***	0.001***
Firm Size	1160	6.371	2.008	4.977	6.164	7.683	38869	4.938	1.892	3.564	4.833	6.206	0.001***	0.001***
ROA	1160	-0.033	0.097	-0.045	0.000	0.013	38869	-0.014	0.079	-0.011	0.006	0.019	0.001***	0.001***
Book-to-Market	1160	0.542	0.795	0.196	0.394	0.694	38869	0.701	0.826	0.288	0.521	0.872	0.001***	0.001***
Leverage	1160	0.233	0.243	0.010	0.179	0.377	38869	0.215	0.218	0.020	0.166	0.341	0.006***	0.185
Accrual Ratio	1160	-0.026	0.111	-0.071	-0.020	0.014	38869	-0.012	0.125	-0.070	-0.024	0.018	0.001***	0.588
Stock Return	1160	0.014	0.888	-0.525	-0.173	0.223	38869	0.129	0.708	-0.272	0.024	0.336	0.001***	0.001***
Volatility	1160	0.199	0.120	0.117	0.176	0.250	38869	0.160	0.111	0.086	0.132	0.199	0.001***	0.001***
US Listed Dummy	1160	0.737	0.440	0.000	1.000	1.000	38869	0.773	0.419	1.000	1.000	1.000	0.001***	0.004***
Big 4 Dummy	1160	0.203	0.403	0.000	0.000	0.000	38869	0.069	0.253	0.000	0.000	0.000	0.004***	0.001***

Panel C: Pearson correlation coefficients

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Sued	**(1)**	1.00													
LongDist	**(2)**	0.02	1.00												
ShortDist	**(3)**	0.01	0.41	1.00											
LongOwn	**(4)**	-0.01	0.00	0.03	1.00										
ShortOwn	**(5)**	0.07	-0.01	0.03	0.02	1.00									
Firm Size	**(6)**	0.13	-0.01	0.00	0.22	0.28	1.00								
ROA	**(7)**	-0.04	-0.05	-0.05	0.13	0.10	0.27	1.00							
Book-to-Market	**(8)**	-0.03	0.00	-0.03	0.08	-0.05	-0.29	0.06	1.00						
Leverage	**(9)**	0.02	-0.03	-0.05	0.03	0.01	0.01	-0.04	-0.08	1.00					
Accrual Ratio	**(10)**	-0.02	0.01	0.02	-0.11	-0.08	-0.19	-0.29	-0.04	-0.03	1.00				
Stock Return	**(11)**	-0.04	0.02	0.02	-0.02	0.04	0.21	0.17	-0.22	-0.07	-0.06	1.00			
Volatility	**(12)**	0.05	0.09	0.09	-0.21	-0.06	-0.33	-0.36	-0.01	0.00	0.20	0.12	1.00		
US Listed Dummy	**(13)**	-0.01	-0.01	0.00	0.15	0.14	0.36	0.24	-0.05	-0.12	-0.17	0.11	-0.23	1.00	
Big 4 Dummy	**(14)**	0.08	0.02	0.02	0.02	0.03	0.03	0.01	0.01	-0.02	-0.11	0.00	-0.01	0.04	1.00

Note: In Panel A, we report distributional information for our sample of 1,160 non-IPO related securities class action cases filed under Section 10b(5) of the 1934 Securities Exchange Act between January 1996 and December 2007. The Fama-French (FF) 12 industry classification is based on Kenneth French's identification. Lawsuits are classified based on the alleged securities law violations: Alleg 1 (misleading or false statements), Alleg 2 (failure to disclose material adverse information), Alleg 3 (failure to disclose existing business problems, misrepresentations about financial condition), Alleg 4 (artificially inflated financial results or revenues, requiring restatement), Alleg 5 (improper accounting and sales practices, violations of GAAP), Alleg 6 (fraudulent transactions), Alleg 7 (insider trading), Alleg 8 (tainted research, including inflated analyst recommendations, misleading research reports), and Alleg 9 (other types or missing information). Several of our sample firms are sued for multiple security law violations. In Panel B, we provide summary statistics for our sued versus non-sued firms and report the mean, median, lower and upper quartile, as well as the standard deviation for each of our main institutional, distance, and control variables. The control group consists of 38,869 non-sued firm-year observations with full information on our key variables. In Panel C, we report the Pearson correlation coefficients between all pairs of variables for our full sample. Detailed variable definitions and data sources are provided in the Appendix. *** and ** denote statistical significance at the 1% and 5 % level, respectively.

Table 2
The effect of investors' distance, ownership, and investment horizon on a firm's litigation risk (full sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Long-term Institutional Investors													
LongDist					0.010***		0.009**	0.010***		0.009**			
					(0.008)		(0.013)	(0.008)		(0.017)			
LongOwn		-1.475***		-0.571**				-0.940***		-0.476	-1.994***		-1.420**
		(0.000)		(0.032)				(0.007)		(0.210)	(0.000)		(0.016)
LongOwn×LongDist											0.091***		0.080***
											(0.003)		(0.005)
Short-term Institutional Investors													
ShortDist						0.010**	0.002		0.009*	0.001			
						(0.029)	(0.705)		(0.062)	(0.909)			
ShortOwn			3.479***	3.293***					3.346***	4.200***		2.632***	3.862***
			(0.000)	(0.000)					(0.000)	(0.000)		(0.000)	(0.000)
ShortOwn×ShortDist												0.062***	0.028
												(0.008)	(0.379)
Control Variables													
Firm Size	0.660***	0.666***	0.657***	0.659***	0.695***	0.654***	0.691***	0.698***	0.652***	0.697***	0.698***	0.652***	0.697***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-1.620***	-1.574***	-1.897***	-1.863***	-1.524***	-1.583***	-1.500***	-1.484***	-1.864***	-1.809***	-1.490***	-1.866***	-1.808***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Book-to-Market	0.113*	0.125**	0.1	0.105*	0.099	0.107*	0.088	0.106	0.093	0.081	0.107	0.092	0.082
	(0.065)	(0.037)	(0.114)	(0.093)	(0.134)	(0.086)	(0.190)	(0.103)	(0.149)	(0.251)	(0.100)	(0.152)	(0.245)
Leverage	0.581**	0.624**	0.536**	0.555**	0.722***	0.578**	0.687***	0.746***	0.529**	0.636***	0.763***	0.531**	0.658***
	(0.018)	(0.011)	(0.027)	(0.022)	(0.002)	(0.017)	(0.004)	(0.002)	(0.028)	(0.006)	(0.001)	(0.028)	(0.005)
Accrual Ratio	-0.432*	-0.469**	-0.354	-0.374	-0.427*	-0.447*	-0.425	-0.454*	-0.365	-0.328	-0.445*	-0.36	-0.318
	(0.062)	(0.039)	(0.147)	(0.123)	(0.094)	(0.066)	(0.110)	(0.072)	(0.149)	(0.279)	(0.079)	(0.156)	(0.292)
Stock Return	-0.657***	-0.649***	-0.639***	-0.637***	-0.866***	-0.658***	-0.874***	-0.864***	-0.641***	-0.851***	-0.862***	-0.639***	-0.848***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Volatility	5.284***	5.062***	5.202***	5.120***	5.841***	5.208***	5.829***	5.715***	5.151***	5.885***	5.724***	5.151***	5.875***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
US Listed Dummy	-0.848***	-0.829***	-0.918***	-0.909***	-0.847***	-0.845***	-0.839***	-0.834***	-0.911***	-0.905***	-0.834***	-0.913***	-0.906***

	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Big 4 Dummy	1.226*** (0.000)	1.233*** (0.000)	1.204*** (0.000)	1.208*** (0.000)	1.210*** (0.000)	1.221*** (0.000)	1.207*** (0.000)	1.212*** (0.000)	1.202*** (0.000)	1.191*** (0.000)	1.215*** (0.000)	1.203*** (0.000)	1.194*** (0.000)
Constant	-7.060*** (0.000)	-6.874*** (0.000)	-7.366*** (0.000)	-7.267*** (0.000)	-6.957*** (0.000)	-7.081*** (0.000)	-6.888*** (0.000)	-6.817*** (0.000)	-7.378*** (0.000)	-7.124*** (0.000)	-6.671*** (0.000)	-7.282*** (0.000)	-6.980*** (0.000)
Year and Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	39,347	39,347	39,347	39,347	33,152	37,352	31,157	33,152	37,352	31,157	33,152	37,352	31,157
Pseudo R^2	0.187	0.189	0.196	0.196	0.206	0.186	0.204	0.207	0.194	0.213	0.207	0.194	0.214

Note: Litigation risk logit results are presented for our whole sample over the period from January 1996 to December 2007. Our sample includes 1,160 companies that were sued under Section 10b (5) of the 1934 Securities Act out of which 902 firms have complete accounting, market, institutional ownership, and distance data available. All other firms that comprise this sample were not subject to a securities class action litigation during our sample period. Detailed descriptions of each variable are provided in the Appendix. For each regressor, we present both the coefficient estimate and *p*-value in parentheses. Standard errors are clustered at the industry level. ***, **, and * denote statistical significance at the 1%, 5%, and 10 % level, respectively.

Table 3
Robustness checks: Controlling for endogeneity

Second-stage regression results								
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Long-term Institutional Investors								
LongDist		-0.007	-0.007					
		(0.446)	(0.430)					
LongOwn	0.596		-0.487***	-0.052				
	(0.829)		(0.006)	(0.942)				
LongOwn×LongDist				-0.045				
				(0.492)				
Short-term Institutional Investors								
ShortDist						-0.005	-0.007	
						(0.404)	(0.378)	
ShortOwn					-1.65		1.912	2.019***
					(0.683)		(0.695)	(0.006)
ShortOwn×ShortDist								-0.039
								(0.543)
Control Variables								
Firm Size	0.272***	0.312***	0.314***	0.314***	0.317***	0.341***	0.282***	0.297***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-0.924***	-0.785***	-0.763***	-0.751***	-0.922***	-0.545**	-1.058***	-0.936***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.045)	(0.000)	(0.000)
Book-to-Market	0.003	0.045*	0.050**	0.051**	0.025	0.064***	0.008	0.035
	(0.947)	(0.055)	(0.033)	(0.029)	(0.303)	(0.002)	(0.716)	(0.109)
Leverage	0.065	0.305***	0.319***	0.317***	0.078	0.220***	0.058	0.216***
	(0.566)	(0.000)	(0.000)	(0.000)	(0.218)	(0.001)	(0.381)	(0.004)
Accrual Ratio	-0.197	-0.274**	-0.286**	-0.288**	-0.191*	-0.212**	-0.182	-0.229*
	(0.143)	(0.049)	(0.039)	(0.038)	(0.088)	(0.048)	(0.117)	(0.059)
Stock Return	-0.282***	-0.352***	-0.351***	-0.351***	-0.287***	-0.251***	-0.288***	-0.281***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Volatility	2.793***	2.856***	2.788***	2.779***	2.850***	2.438***	2.701***	2.544***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

US Listed Dummy	-0.373*** (0.000)	-0.388*** (0.000)	-0.382*** (0.000)	-0.383*** (0.000)	-0.343*** (0.000)	-0.269*** (0.005)	-0.393*** (0.000)	-0.417*** (0.000)
Big 4 Dummy	0.572*** (0.000)	0.550*** (0.000)	0.552*** (0.000)	0.551*** (0.000)	0.568*** (0.000)	0.493*** (0.000)	0.573*** (0.000)	0.564*** (0.000)
N	39,637	33,030	33,030	33,030	39,637	37,612	37,612	37,207
Wald test (χ^2 test statistic) Null hypothesis: no endogeneity	0.27	1.79	1.90	1.92	0.65	2.71	2.88	1.28
Prob > χ^2	0.6057	0.1811	0.1697	0.1661	0.4193	0.1001	0.2374	0.2583

Note: This table presents the second-stage results for a series of instrumental variable regressions and tests of endogeneity. The dependent variable in the second stage is the binary variable *Sued*, while the ownership and distance variables are the predicted values from the first stage. Following the existing literature on geographic distance (Gaspar and Massa, 2007; Ayers et al., 2011), we construct dummies for the 25 largest cities in the U.S., according to the most recent data reported by the U.S. Census Bureau population survey from 2010 and a dummy variable for "remote" cities, defined as those that are located more than 250 miles away from the major cities based on the U.S. Census Bureau report. *p*-values are reported in parentheses. Standard errors are clustered at the industry level. Year and industry fixed effects are included. The last two rows show the results of Wald endogeneity tests for the null hypothesis that our main regressors are exogenous, and report the $\chi 2$ (chi-square) test statistics and the associated *p*-values. ***, **, and * denote statistical significance at the 1%, 5%, and 10 % level, respectively.

Table 4
Robustness checks: Accounting for alternative variable definitions and sample compositions

Panel A: Robustness checks for Hypothesis 1 (with distance as the main explanatory variable)

	No. of local investors	Largest shareholder		Block holders	Changes in ownership	Excluding financials
		Long-term	Short-term			
	(1)	(2)	(3)	(4)	(5)	(6)
Long-term Institutional Investors						
LongDist	-0.038	-0.002		0.009**	0.008**	0.009***
	(0.463)	(0.561)		(0.011)	(0.027)	(0.007)
LongOwn	-0.538*	-1.420***		-0.297	-1.131**	-0.405
	(0.068)	(0.003)		(0.372)	(0.011)	(0.324)
LongOwnChange					-0.534	
					(0.304)	
Short-term Institutional Investors						
ShortDist	-0.019		0.010**	0.001	-0.000	0.005
	(0.580)		(0.016)	(0.813)	(0.975)	(0.486)
ShortOwn	3.273***		1.484**	3.054***	5.746***	4.134***
	(0.000)		(0.025)	(0.000)	(0.000)	(0.000)
ShortOwnChange					-2.889***	
					(0.000)	
Control Variables						
Firm Size	0.661***	0.663***	0.661***	0.703***	0.698***	0.660***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-1.868***	-1.612***	-1.637***	-1.643***	-1.792***	-1.671***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Book-to-Market	0.105*	0.118*	0.115**	0.087	0.070	0.070
	(0.095)	(0.052)	(0.029)	(0.207)	(0.319)	(0.308)
Leverage	0.559**	0.606**	0.593***	0.654***	0.627***	0.591***
	(0.021)	(0.013)	(0.000)	(0.006)	(0.007)	(0.008)
Accrual Ratio	-0.365	-0.450**	-0.451**	-0.394	-0.288	-0.512*

	(0.136)	(0.048)	(0.045)	(0.162)	(0.354)	(0.079)
Stock Return	-0.638***	-0.654***	-0.651***	-0.858***	-0.844***	-0.787***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Volatility	5.116***	5.192***	5.160***	5.885***	5.805***	5.557***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
US Listed D.	-0.910***	-0.840***	-0.854***	-0.876***	-0.921***	-0.860***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Big 4 Dummy	1.206***	1.228***	1.221***	1.199***	1.184***	1.090***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-7.229***	-6.957***	-7.146***	-7.008***	0.698***	-6.955***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Year and Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	39,347	39,347	39,347	31,157	31,157	28,523
Pseudo R^2	0.196	0.188	0.189	0.208	0.217	0.193

Panel B: Robustness results for Hypothesis 2 (with interactions of the ownership and distance variables)

	No. of local investors	**Largest shareholder**		**Block holders**	**Changes in ownership**	**Excluding financials**
		Long-term	**Short-term**			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Long-term Institutional Investors						
LongOwn	-0.34	-2.726***		-1.470**	-2.066***	-1.553**
	(0.308)	(0.000)		(0.011)	(0.001)	(0.015)
LongOwn×LongDist	-0.434*	0.108**		0.100***	0.079***	0.095***
	(0.092)	(0.014)		(0.002)	(0.005)	(0.001)
LongOwnChange					-0.53	
					(0.301)	

Short-term Institutional Investors						
ShortOwn	3.619***		1.047	2.924***	5.469***	3.608***
	(0.000)		(0.192)	(0.000)	(0.000)	(0.000)
ShortOwn×ShortDist	-0.419**		0.108**	0.01	0.022	0.044
	(0.027)		(0.033)	(0.832)	(0.493)	(0.205)
ShortOwnChange					-2.889***	
					(0.000)	
Control Variables						
Firm Size	0.662***	0.661***	0.661***	0.703***	0.699***	0.660***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-1.876***	-1.607***	-1.658***	-1.653***	-1.789***	-1.672***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Book-to-Market	0.104*	0.118**	0.112**	0.088	0.071	0.071
	(0.100)	(0.026)	(0.032)	(0.208)	(0.311)	(0.304)
Leverage	0.568**	0.624***	0.584***	0.669***	0.649***	0.608***
	(0.019)	(0.000)	(0.000)	(0.005)	(0.005)	(0.007)
Accrual Ratio	-0.352	-0.457**	-0.438*	-0.382	-0.279	-0.502*
	(0.150)	(0.041)	(0.053)	(0.173)	(0.367)	(0.083)
Stock Return	-0.637***	-0.653***	-0.651***	-0.855***	-0.842***	-0.784***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Volatility	5.124***	5.174***	5.216***	5.897***	5.790***	5.548***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
US Listed D.	-0.915***	-0.838***	-0.861***	-0.875***	-0.923***	-0.864***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Big 4 Dummy	1.206***	1.228***	1.221***	1.204***	1.186***	1.094***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.662***	0.661***	0.661***	-6.853***	-7.028***	-6.751***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Year and Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	39,347	39,347	39,347	31,157	31,157	28,523
Pseudo R^2	0.197	0.189	0.189	0.209	0.217	0.194

Note: This table presents the results for a series of additional robustness tests in which we examine the sensitivity of our results to variations in variable definitions and sample composition. In Model (1), we use an alternative definition of our distance variables by considering the number of local long-term (short-

term) investors among the top five. In Models (2)-(3), we consider the single largest institutional investor and differentiate between the cases in which the largest shareholder has a long- versus short-term investment horizon. In Model (4), we consider long-term (short-term) blockholders. In Model (5), we add a variable that captures the change in institutional ownership. More specifically, we explore how changes in ownership levels over a one year horizon among the top five institutional investors affect subsequent litigation risk. Finally, in Model (6), we perform a sensitivity check on a subsample that excludes all financial firms. In Panel A, we use our distance variables as the main regressors for each of the robustness tests. In Panel B, we use the interaction of these distance measures with the ownership variables. *p*-values are reported in parentheses. Standard errors are clustered at the industry level. ***, **, and * denote statistical significance at the 1%, 5%, and 10 % level, respectively.

Appendix. Variable definitions and data sources

Variable	Definition	Data source
Main variable of interest		
Sued	Dummy variable, equal to one if the firm was sued during the sample period.	Stanford University's Securities Class Action Clearinghouse (SCAC)
Geographic distance variables[1]		
LongDist	1) Average distance between the firm and the largest long-term investors. This variable is estimated as the equally weighted average distance, in hundreds of miles, between a firm and its largest long-term investors (taken from the set of the five largest investors of any type, but including in the distance calculation only those investors for whom location data were available). 2) In our robustness tests (Model 1, Panels A and B, Table 4): Number of local long-term investors. This variable is estimated as the number of long-term investors (among the five largest institutional investors) located within 250 miles of a firm.	Thomson Reuters 13F
ShortDist	1) Average distance between the firm and the largest short-term investors. This variable is estimated as the equally weighted average distance, in hundreds of miles, between a firm and its largest short-term investors (taken from the set of the five largest investors of any type, but including in the distance calculation only those investors for whom location data were available). 2) In our robustness tests (Model 1, Panels A and B, Table 4): Number of local short-term investors. This variable is estimated as the number of short-term investors (among the five largest institutional investors) located within 250 miles of a firm.	Thomson Reuters 13F
Ownership variables		
LongOwn	1) Ownership of the largest long-term investors, estimated as the total ownership by long-term institutions among the five largest institutional investors. 2) In our robustness tests (Table 4, Panels A and B): a) For Model (2) the ownership by the largest institutional investor if the investor is a long-term investor; b) For Model (4) the total ownership by long-term institutions among the firm's block holders.	Thomson Reuters 13F
ShortOwn	1) Ownership of the largest short-term investors, estimated as the total ownership by short-term institutions among the five largest institutional	Thomson Reuters 13F

[1] For all variables in this group (the geographic distance variables) that use distance, the distance measures are calculated based on the geographic coordinates (retrieved using the postal (ZIP) codes) of the corresponding firm/investor. Formally, the specific distance between a firm and its investor is computed as follows: $\text{Distance}_{f,i} = r \times \arccos\{\sin(\text{lat}_f) \times \sin(\text{lat}_i) + \cos(\text{lat}_f) \times \cos(\text{lat}_i) \times \cos(\text{lon}_f - \text{lon}_i)\}$, where f and i denote accordingly the firm and the investor, lat is the latitude, and lon is the longitude, both measured in radians, and r is the earth's radius measured in miles.

	investors. 2) In our robustness tests (Table 4, Panels A and B): a) For Model (3) the ownership by the largest institutional investor if the investor is a short-term investor; b) For Model (4) the total ownership by short-term institutions among the firm's block holders.	
LongOwnChange	Change in ownership by the largest long-term investors: Percentage change in the total ownership of long-term institutional investors among the five largest institutional investors.	Thomson Reuters 13F
ShortOwnChange	Change in ownership by the largest short-term investors: Percentage change in the total ownership of short-term institutional investors among the five largest institutional investors.	Thomson Reuters 13F
Control variables		
Firm Size	Natural log of the firm's market capitalization at the end of the last fiscal year prior to the lawsuit (in 1996 dollars).	Compustat, Bureau of Labor Statistics (BLS)
ROA	Ratio of earnings before interest and taxes to the book value of total assets.	Compustat
Book-to-Market	Ratio of the book value of equity per share to the firm's stock price.	Compustat
Leverage	Ratio of the long term debt to the book value of total assets.	Compustat
Accrual Ratio	Ratio of the income before extraordinary items minus cash flow from operations to the book value of total assets.	Compustat
Stock Return	Average of daily stock returns during a one-year window ending one quarter prior to the lawsuit filing quarter.	CRSP
Volatility	Standard deviation of daily stock returns during a one-year window ending one quarter prior to the lawsuit filing quarter.	CRSP
US Listed Dummy	Dummy variable equal to one if the firm is listed on a major U.S. stock exchange.	Compustat
Big 4 Dummy	Dummy variable equal to one if the firm is audited by a Big 4 / Big 5 auditor.	Compustat
Industry Dummies	Dummy variables based on 2-digit Standard Industry Classification (SIC) codes.	Compustat
Year Dummies	Dummy variables constructed for all years from 1996 to 2007.	Thomson Reuters 13F

Highlights

- We study the effect of institutional investors-to-firm distance on litigation risk.
- Institutional investor-to-firm proximity reduces a firm's litigation risk.
- The proximity of long-term investors amplifies the ownership-litigation risk relation.
- The proximity of short-term investors weakens the ownership-litigation risk relation.