Facilitating Takeovers: The Case of Coordinated Monitoring

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Abstract

We document that coordination among institutional investors affect how firms behave in the takeover market. We use geographic distance between the largest firms' institutional investors as proxy for the ease of communication, cooperation and coordination among institutional investors. Consistent with the view that geographic proximity allows investors to facilitate more deals, firms with geographically close institutional shareholders are more likely to acquire other companies. We also show that M&As carried out firms for which institutional investors are geographically close, tend to generate higher abnormal returns around their announcement. Overall, these findings indicate that coordination among investors not only increases takeover activity, but also it improves its quality. We provide further support by showing that when corporate governance quality of the acquiring firm is low, or when its information cost is high, geographic closeness between main institutional owners plays a more important role.

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1. Introduction

Institutional investors own a large fraction of listed firms' equity (Ferreira and Matos, 2008) and they often engage in discussions with managers (McCahery, Sautner, and Starks, 2016). As Bena, Ferreira, Matos, and Pires (2016) observe, institutional investors have the skills to persuade managers to take certain actions either via diplomacy, actively voting their shares, or via confrontational proxy fights. A growing literature has documented how institutional investors affect certain corporate policies, in particular CEO compensation (Hartzell and Starks, 2003; Fernandes, Ferreira, Matos, and Murphy, 2012) and corporate investments like acquisitions (Chen, Harford, and Li, 2007).

Theoretical works (see for example Admati and Pfleiderer, 2009, and Edmans and Manso, 2011) have emphasized the importance of the interactions between multiple large investors, and how this impacts their incentives to prevent or correct managerial failure. However, managers of these large funds tend to be very accomplished and busy individuals whose time has a high opportunity cost.[4] Given their tight schedules, fund managers can hardly travel far outside of the area in which they reside to meet and discuss with their peers. Because of that, distant fund managers could also find almost impossible to informally interact with other managers to share precious information about companies in which they own shares. This limits the acquisition of soft information, which can only be acquired from personal observation or face-to-face interactions (Stein, 2002).

In this paper, we use geographical proximity among investors as proxy of the easiness of interaction between institutional investors to examine how it relates to the firm's corporate policies. To this end, we investigate how institutional investors exploit their geographical proximity to affect acquisitions, which are one of the most important investment decisions (Chen, Harford, and Li, 2007). While Chhaochharia, Kumar, and Niessen-Ruenzi (2012)

[4] See Mace (1971) for a similar argument about directors.

examine whether proximity to the firm in which they invest allows institutions to be effective monitors of corporate behavior, we focus on another dimension: the geographical proximity among investors. To be effective both as monitors and/or deal facilitator, institutional investors need to communicate, cooperate, and coordinate among them. These tasks are easier if institutional investors are geographically close to each other. Indeed, a vast literature has shown that, even in an era of virtual communication, geographical proximity provides huge benefits in terms of superior information (Coval and Moskowitz, 1999, 2001; Ivkovic and Weisbenner, 2005; Baik et al., 2010; Bernile et al., 2010), especially when soft information matters (Cornelli, Kominek, and Ljungqvist, 2013; Alam, Chen, Ciccotello, and Ryan, 2014). Stein (2008) also observe that successful ideas do not necessarily travel very far, and it is likely that remains localized among the handful of players who were its originators.

The activism of institutional investors should carry more weight if proximity allows institutional investors to improve coordination and transfer information more easily. This can affect how firms behave in the acquisition market. Acquisitions have often been a textbook example of value-destroying investments pursued by managers for empire building motives (Jensen, 1986) and/or hubris and overconfidence (Roll, 1986; Malmendier and Tate, 2008). However, despite some acquisitions generate large losses for bidders, the average acquisition is associated with a positive wealth effect (Moeller, Schlingemann, and Stulz, 2005). Institutional investors can be valuable in the acquisition process, acting as facilitators of deals (Ferreira, Massa, and Matos, 2010) as well as monitors (Chen, Harford, and Li, 2007). We expect that this value increases with the proximity among investors because of the exchange of soft information that closeness makes possible.

If proximity permits institutional investors to provide a more effective service as deal facilitators, then the number of deals carried out by firms should be inversely related to the

distance between the largest investors in the firm. To put it differently, the set of potential targets increases because of the role of institutional investors as deal facilitators, and this increase is larger as the distance among investors decreases. On the other hand, institutional investors' activism should limit managerial empire building, limiting the number of wasteful acquisitions. Proximity among investors has also implications for the quality of the acquisition investments carried out by firms. Both the enhanced advisory and monitoring role of geographically close institutional investors should positively affect the abnormal reaction around the announcement.

We use acquisitions by US listed firms between 1990 to 2014 to test these hypotheses. Consistent with the view that proximity improves coordination among institutional investors and strengthen their activism, we find that investor proximity impacts the acquisition behavior of the firm. Since firms with smaller distance among investors are those that launch more acquisitions offers, the institutional investors' role as deal facilitators dominates on the monitoring one. We also find supporting evidence that geographical proximity among investors benefits firms in terms of the quality of the acquisitions they announced. Indeed, abnormal returns around the acquisition announcements are larger for firms with close institutional investors. This result is robust to other two geography-related determinants of acquisitions. First, this effect of geographic proximity among investors is obtained controlling for the distance between investors and the firm (Chhaoccharia, Kumar, and Niessen-Ruenzi, 2012). Distance to the firm does not affect the acquisition policy of the firm, a result also found by Chhaoccharia, Kumar, and Niessen-Ruenzi (2012), and it is negatively associated with CARs around the acquisition announcement. Second, following Kang and King (2008) and Uysal, Kedia, and Panchapagesan (2008), we also show that the investor proximity effect does not disappear when we control for local transactions, that is deals in which targets and bidders are geographically close).

If proximity among large institutional investors mitigates information problems, we should expect the effect to be larger when the firms are reluctant to disclose information or when the cost of becoming informed is high. Using the information cost index of Duchin, Ozbas, and Matsuzaka (2010) as a proxy for the cost of becoming informed, we find as expected that the magnitude of the investor proximity effect is larger when the information cost index is high, signaling that easier coordination and improved communication among investors has a higher value when gathering information is costly. Geographic proximity among investors should also be more valuable in companies with bad corporate governance, where managerial entrenchment is stronger. Dividing the sample using the entrenchment index of Bebchuk, Cohen, and Farrell (2009), we show that this is indeed the case: the effect of proximity is larger when corporate governance is worse.

Our paper offers several contributions to the literature. First, we uncover a new determinant of the acquisition policy of listed companies. Previous literature has shown that ownership, and in particular institutional investors, matters (Chen, Harford, and Li, 2007; Ferreira, Massa, and Matos, 2010). We add to this literature by documenting that proximity among investors is a moderating factor of ownership. Second, we contribute to the growing literature that examines the effects of geography on financial decisions (see e.g., Coval and Moskowitz, 1999; Gaspar and Massa, 2007; Bae, Stulz, and Tan, 2008; Baik et al., 2010; Chhaochharia et al., 2012; Dougal, Parsons, and Titman, 2015; Pool, Stoffman, and Yonker, 2015; Hollander and Verriest, 2016). This strand of literature has devoted considerable attention to the distance between directors and the companies' headquarters (Alam, Chen, Ciccotello, and Ryan, 2014; Masulis, Wang, and Xie, 2012, Knyazeva, Knyazeva, and Masulis, 2013), with a few exception investigating the distance between firms and institutional investors (see for example Ayers, Ramalingegowda, and Yeung, 2011; Chhaochharia, Kumar, and Niessen-Ruenzi, 2012). We add a novel dimension looking at how

proximity between large shareholders affects firm's decisions. Finally, we add to the activism literature. We document that large institutional investors affect the behavior of the invested firms. While these interventions may not be publicly disclosed and behind the scene (see also McCahery, Sautner, and Starks, 2016), institutional investors' preferences shape the acquisition policy of firms, especially when they can easily coordinate.

The remainder of the paper is structured as follows. Section 2 discusses the literature and develops the hypotheses. Section 3 describes the data. Section 4 presents the methodology and the main results of our empirical analysis. Section 5 discusses how the cost of obtaining information and corporate governance affect the relationship between distance and acquisitions. Section 6 presents additional analysis. Finally, Section 7 concludes.

2. Literature Review and Hypotheses Development

A vast literature examines the role of institutional investors in corporations, investigating the link between institutional investors activity and the key aspects of corporate life both theoretically and empirically. Theoretical studies by Shleifer and Vishny (1986) and Edmans (2009) have examined the impact of institutional monitoring on top managers' behavior and the firm performance. According to Shleifer and Vishny (1986), an institution or a coalition of institutions with large enough equity stakes will exert monitoring efforts to influence top management as long as the expected benefits from the engagement in this costly activity exceed its expected cost. In Edmans (2009)'s model, large stakeholders can induce company managers to exert greater effort by threatening to liquidate their holdings if management fails to create long-term value. Other theoretical works by Admati and Pfleiderer (2009), and Edmans and Manso (2011) claim that institutional investors may act in groups in order to intervene in corporate affairs. This is consistent with Stein (2008), which argues that exchange of information may also be optimal among competitors.

A number of empirical studies confirm the significant role that institutional investors play in firm monitoring and influence firm's behavior. Institutional investors, have material impact on firms' investment and financing decisions including the level of R&D expenditures, cash holdings, and financial leverage (Cronqvist and Fahlenbrach, 2009), and on CEO compensation (Hartzell and Starks, 2003; and Fernandes, Ferreira, Matos, and Murphy, 2012). Often, institutional shareholders achieve these results through the channel of private negotiations with firm's top management, which usually is unobserved by other investors (see e.g., Carleton, Nelson, and Weisbach, 1998; McCahery, Sautner, and Starks, 2016). However, in some cases they can also confront managers via proxy fights (Bena, Ferreira, Matos, and Pires, 2016).

A few papers study the role of institutional investors in M&As. Chen, Harford, and Li (2007) show that institutional shareholders exert pressure on firms' managements to undertake high quality acquisitions. Moreover, the presence of independent long-term investors with a large ownership increases probability of bad bids to be withdrawn, and improves post-acquisition performance. Another related study by Ferreira, Massa and Matos (2010) investigates the role that foreign institutional investors play in cross-border M&As. Foreign investors increase the probability of successful acquisitions, promote connections between firms, reduce costs of transaction, and help to diminish asymmetry of information between an acquirer and a target firm. To put it another way, these investors facilitate acquisitions. Disagreements with company's merger and acquisition tactic is also one of the core catalyzers of investors' activism (McCahery, Sautner, and Starks, 2016).

Geographic proximity is a factor that can impact the effectiveness of institutional investors in their activism. Geographic proximity is still one of the main sources of information advantage even in the era of informational progress and communication technologies advances (Reuer and Lahiri, 2013; Cornelli, Kominek, and Ljungqvist, 2013;

Alam, Chen, Ciccotello, and Ryan, 2014; Hollander and Verriest, 2016; Mazur and Salganik-Shoshan, 2016).[5] The importance of the geographic dimension is consistent with Stein (2002), who emphasizes that interpersonal communication can be the only reliable way to convey information on certain types of investment projects. Stein (2008) observes that good ideas often do not travel far in a network, and geographic proximity certainly helps institutional investors to be part of such networks. Research reports that geographic closeness improves information transfer between investors (Sorenson and Stuart, 2001; Hong, Kubik, and Stein, 2005; Mazur and Salganik-Shoshan, 2016), reduces costs of gathering information gathering about the investee firms (Gaspar and Massa, 2007), and mitigates information asymmetry between investors and firms, extending the set of profitable investment opportunities (Coval and Moskowitz, 1999, 2001; Ivkovic and Weisbenner, 2005; Baik, Kang, and Kim, 2010; John, Knyazeva, and Knyazeva, 2011; Bernile, Kumar, Sulaeman and Wang, 2016). More effective information transfer between investors allows them easier and more efficient communication and action coordination (Sorenson and Stuart, 2001; Mazur and Salganik-Shoshan, 2016; Huang, 2016). At the same time, the decrease of information asymmetry allows better monitoring (Ayers, Ramalingegowda, and Yeung, 2011; Chhaochharia, Kumar, and Niessen, 2012). Chhaochharia, Kumar, and Niessen (2012) documents that due to lower monitoring costs, institutions oversights firms more effectively when they are located in their close vicinity. As a result, firms with local investors are less likely to get involved in managerial misbehavior such as empire building, entrenchment, and options backdating. Ayers, Ramalingegowda, and Yeung (2011) use geographic proximity between the institutional investor and the firm as a proxy for information cost, and show that

[5] On the other hand, Bernile, Kumar, Sulaeman and Wang (2016) report that long-term information advantage of local investors disappeared with the advanced communication environment, However, they also document that institutional investors continue to exhibit a strong preference for local stocks and that the short-term proximity-based information advantage is still presents.

the presence of local monitoring institutional investors diminishes manager tendency to use financial reporting discretion.

A number of studies investigate the effect of geographic distance on mergers and acquisitions. Almazan, De Motta, and Titman (2010) show that firms located within industry clusters make more acquisitions. Kang and Kim (2008) find that block acquirers have a strong preference for geographically proximate targets and acquirers that purchase shares in such targets are more likely to engage in post-acquisition target governance activities than are remote block acquirers. Uysal, Kedia, and Panchepagesan (2008) report that acquirer returns in local transactions are more than twice higher than the returns in non-local transactions. In another related study, Cai, Tian, and Xia (2015) find that urban firms have higher probability to receive takeover bids, and acquirer announcement returns tend to be higher in deals with urban targets rather than in those for rural targets. Huang (2016) shows that shareholders gain more in a transaction when institutional investors can coordinate more easily.

Not only is geography proximity important in the relationship between investors and firms, but also is important among investors. Indeed, Hong, Kubik and Stein (2005) find that interpersonal communication plays an important role in mutual fund industry, increasing similarities in portfolio composition because of the word-of-mouth effect. Similarly, Pool, Stoffman and Yonker (2015) show that mutual fund managers living near each other tend to have more similar investment portfolios and trade patterns.

Since geographic proximity increases the easiness of coordination among investors, institutional investors are more likely to build coalitions and engage in activism overcoming the free-rider problem (Shleifer and Vishny, 1986). Institutional investors that are close to each other may also decrease the bargaining and transaction costs associated with the asymmetry of information between bidders and targets in takeover bids acting as deal facilitators, like the foreign institutions in Ferreira, Massa, and Matos (2010). Thus,

institutional investors may monitor more effectively the firm's managers as well as they may facilitate deal-making. We, therefore, expect that geographic proximity among institutional shareholders affect the firm's acquisition policy through both the monitoring channel and the advisory channel. If the monitoring channel dominates, acquisitions will decrease with investor proximity because less value-destroying acquisitions will be launched. On the other hand, if the advisory channel prevails, then acquisitions will increase with investor proximity.

We also expect geographic proximity to impact on the quality of the acquisitions. A more effective monitoring activity of the investors' coalition should limit bad acquisitions, and thus positively affecting the abnormal returns around acquisition announcements. Institutional investors are also likely to facilitate deals in which they do not destroy value, again increasing acquisition returns. For these reasons, we expect that the quality of M&As should increases with investor proximity because of both the advice and the monitoring activities of these investors.

The effect of investor proximity may not be homogenous across all firms. If proximity among large institutional investors mitigates information problems, we should expect the effect to be larger when the firms are reluctant to disclose information or when the cost of becoming informed is high. Thus, we expect the magnitude of the investor proximity effect to be larger when the cost of obtaining information is high, because easier coordination and improved communication among investors is more valuable when gathering information is costly. The easiness to affect corporate policies also depend on corporate governance. When corporate governance is already good, the monitoring and advising role of geographically close institutional investors loses some relevancy because investors do not need to coordinate to be listened by the managers. On the other hand, the value of proximity increases when corporate governance is poor and managers are entrenched.

3. Data, Variables, and Proximity Measures

3.1. Data

We construct our sample by obtaining data from multiple sources. First, we start with the universe of US corporations listed in the merged CRSP-Compustat database from 1990 to 2014. Then, we match these data with Thomson Reuters Institutional (13f) Holdings database that covers common stock holdings of institutional investors, who file 13(f) reports with the SEC. Acquisition data are obtained from ThomsonReuters' Thomson One Banker database. We consider all acquisitions announced by US publicly listed companies between 1990 and 2014 in which: 1) the bidder held less than 50% of the target company's shares before the transaction; 2) the bidder is seeking to own at least 50% of the target company's shares before the transaction. Finally, we also impose that the acquisition value must be at least 1% of the market value of equity of the bidding firm.

Data on geographic location of institutions and firms are based on ZIP codes which are retrieved from Nelson's Directory of Investment Managers, Compustat, Compact Disclosure, SEC filings, and money managers' websites. Geographic location of firms is defined by the location of their headquarters, as opposed to the place of incorporation, and is updated every time the firm relocates. Next, both institutional and firm ZIP codes are translated to latitude and longitude coordinates of geographic positioning. For the details on the data collection process, we follow Chhaochharia et al. (2012). Data on distances up to 2006 are from Chhaoccharia et al. (2012); we collected and computed distance measures for the period 2006-2014.[6] Our final sample comprises 49,450 firm-year observations.

3.2. Variables

3.2.1. M&A activity and quality measures

[6] We thank Alok Kumar for generously sharing the data for the period up to the year 2006 with us. We collected ourselves the data for the period 2006-2014.

We use several different M&A intensity and quality measures as our dependent variables. To estimate the intensity of firm's acquisition activity, we construct the following variables: *M&A Incidence, Relative Deal Value* and *Number of Deals*, each of which depicts the M&A activity from a different angle. *M&A Incidence* distinguishes between firms that at least once undertook an acquisition and firms that had never carried out acquisition. Thus, this variable takes value one if over a given period of time a given firm has undertook at least one acquisition deal, and zero otherwise. *Relative Deal Value* aims to evaluate the range and significance of a given acquisition transaction for the acquirer. We define this variable as the fraction of transaction value from the acquirer own market value prior to the acquisition. Finally, we measure the intensity of acquisition activity defining *Number of Deals* variable that counts the number of acquisitions undertaken by a given firm over a given period of time.

Further, following existing M&A literature (see, for example, Kang and Kim, 2008; Ferreira, Massa, and Matos, 2010), we use five-day cumulative abnormal return (*CAR*) for the acquirer announcing acquisition as a measure of acquisition quality.

In Appendix A, we summarize the definitions and data sources for each of the variables introduced in this study.

3.2.2. Key coordination proxies

We construct our geographic proximity measures using geographic distance calculated as in Coval and Moskowitz (1999). More specifically, we compute the proximity between institutional investors of a given firm as the equally weighted average distance between each pair of investors out of the pool of the largest investors owning firm's equity. Formally, the proximity between institutional investors of a given firm is computed as follows:

$$\frac{\sum_{j=1}^{J} dist_{kl,j,i,t}}{J}$$

(1)

where *dist* is the geographic distance, estimated based on the approach first introduced in Coval and Moskowitz (1999), subscript *i* denotes the firm, *j* is the counter for investor pairs for a given firm *i* at a given point of time *t*, *J* is the number of all possible connections between any of the two of largest institutional investors of a given firm *i* at a given point of time *t*, and subscripts *k*, and *l* denote investors combining an investor pair for a given firm *i* at a given point of time *t*.

Following the approach described above, we construct *Distance_Top3_Investors* and *Distance_Top5_Investors* which measure the proximity between the three and the five largest institutional investors, respectively. We consider up to the five largest investors because in aggregate they hold a large percentage of a typical publicly traded firm's outstanding shares. Accordingly, they have the greatest incentives to get involved in interactions with each other in order to coordinate potential interventions. For completeness of our analysis, we also compute *Distance_to_Firm*. Following Chhaoccharia et al. (2012), we compute this measure as the simple average distance between the firm's headquarters and its ten largest institutional investors. We use *Distance_to_Firm* to control that the effect of investor proximity is above and beyond the simple distance between investors and the firm.

3.2.3. Control variables for institutional ownership

Following extensive literature documenting an important role of institutional investors play in corporations (see, for example, Chen, Harford, and Li, 2007; Ferreira, Massa, and Matos, 2010), we use a number of controllers for institutional investors ownership. First, we compute the *# Block-holders* variable that counts the number of institutional investors holding at least 5% of firm's equity. Next, we include *Block-holder Ownership* variable estimating the

total value of firm's equity hold by institutions whose holding comprise at least 5% of company's equity. Finally, we estimate *Institutional Ownership* – the total value of firm's equity hold by institutional shareholders. Detail definitions of those variables are provided in Appendix A.

3.2.4. Other control variables

Further, we include a bunch of control variables accounting for various characteristics of the acquisition, the acquirer, and the target that has been reported by existing research to be related to acquisition activity. All of the variables are summarized and explained in detail in Appendix A.

More specifically, to control for deal attributes we compose the following variables: *100% Cash Deals*, *Hostile* and *Diversifying*. We construct *100% Cash Deal* dummy variable getting value one if the deal was solely cash-financed deal, and zero otherwise (see, for example, Chen, Harford and Li, 2007; Almazan, De Motta, Titman and Uysal, 2010). According to Almazan, De Motta, Titman and Uysal (2010), in an environment of lower information asymmetry, firms would chose stock-financed deal rather than cash deals, since such form of acquisition financing would allow them to minimize the use of financial leverage needed for the transaction. Further, we control for whether the acquisition was friendly or hostile constructing a dummy variable *Hostile* taking value of one if the deal was classified as hostile and zero otherwise. Based on the finding of existing research, the deal type may indicate characteristics of target companies prior to the acquisition. Simultaneously, it may predict acquisition outcomes. Thereby, an acquisition type might represent one of the factors forming an acquisition activity. For example, Kini, Kracaw, and Mian (2004) report that targets of hostile deals are often poorly performing companies. Servaes and Tamayo (2014) conclude that hostile deals have significant disciplinary effect not only at target firm level but

also at industry level, and lead to decrease of capital expenses and cash holdings, and growth of leverage and dividend payments. Following Kang and Kim (2008), and Ferreira, Massa and Matos (2010), we control for industry relatedness between a bidder and a target firm. Thereby, we account for potential mutual economic benefits both sides of the acquisition may extract from the deal. For this purpose, we create a *Diversifying* variable getting value one if the acquirer and the target have different two-digit SIC codes, and zero otherwise.

Further, our set of controllers for the characteristics of an acquiring firm comprises of the following variables: *Firm Size*, *Market-to-Book*, *Cash Holdings*, *Leverage*, *Capital Expenditure (CapEx)*, *Return on Equity (ROA)*, *Stock Return*. We control for acquirer size following findings of Faccio and Masulis (2005) indicating that larger companies tend to undertake a larger number of acquisitions. We estimate *Firm Size* as the logarithm of firm market capitalization. Considering the logic behind the market-driven theory (Shleifer and Vishny, 2003) suggesting that overvalued firms tend to undertake a larger number of acquisitions, we include as a controller firm's *Market-to-Book* value computed as the ratio of the sum of firm's market value of equity and the book value of its debt to book value of firm's total assets. We also control to acquirer level of *Cash Holdings* following prior literature that reports that firms with relatively high proportion of cash holding used to make more acquisitions (Jensen, 1986; Harford, 1999; Faccio and Masulis, 2005). We calculate firm's *Cash Holdings* as the ratio of firm's cash and short-term investments to its book value of total assets. We also control for firm's financial leverage, which we estimate as the ratio of the sum of long-term debt and debt in current liabilities to the book value of firm's total assets. Existing merger and acquisitions literature reports contradictive findings regarding the effect of firm's leverage on its acquisition activity. While some studies document that higher financial leverage is associated with larger number of acquisition deals undertaking by firm (see, for example, Faccio and Masulis, 2005), other find the opposite effect (see, for example,

Almazan, De Motta, Titman and Uysal, 2010; Uysal, 2011). In his work from 1999, Harford does not observe any relationship between firm financial leverage and the extent of its acquisition activity. In addition, in accordance with previous studies on acquisition activity (see, for example, Kang and Kim, 2008; Ferreira, Massa and Matos, 2010; Almazan, De Motta, Titman, Uysal, 2010), we include such controllers as acquirer *CapEx*, *ROA*, *Stock Return*, *Volatility* and *Firm Age*. Capital expenditures variable (*CapEx*) is computed as the ratio of firm's capital expenditure to firm's book value of total assets. Return on assets (*ROA*) is calculated as the ratio of firm operating income before depreciation to firm's book value of total assets. Firm *Stock Return* is the return on firm stock over a year calculated using daily data. Stock return *Volatility* is defined as the standard deviation of firm stock's daily return over the 252 trading days. We estimate *Firm Age* as the number of years the firm is recorded in our database (CRSP).

Finally, we control for relevant characteristics of target firm. We construct *Private Target* dummy variable taking value one if the target firm is a private company and zero otherwise. According to previous literature acquisition performance can vary for private and public firms (see, for example, Chen, Harford and Li, 2007). Clearly, expected economic outcome can determine willingness of potential bidders to undertake an acquisition. Further, as in Almazan, De Motta, Titman and Uysal (2010), we control for the costs of target firm's access to financial markets, by including *Credit Rating* dummy that takes value of one if the firm has an S&P credit ranking and zero otherwise.

3.3. Descriptive statistics

Table 1 provides descriptive statistics of the variables we employ analysis.

[Please insert Table 1 about here]

To alleviate the effect of extreme outliers on the results, all of the variables are winsorized at the 1st and 99th percentile levels. Panel A summarizes statistics for the

geographic distance variables. The mean distance between firm largest three versus five institutional investors is roughly the same (i. e., 1,075 and 1,035 miles respectively). Interestingly, the distance distribution is more dispersed for the measure calculated for the largest three investors than for the corresponding measure computed for the largest three institutional owners (with the values of standard deviation equal to 643 and 444 respectively). Average distances calculated for the corresponding winsorized measures are merely similar to these of the non-winsorized ones (i.e., 1,082 and 1,053 for the largest three and five institutional investors respectively comparing to the mean values for the non-winsorized measures of 1,075 and 1,035). An average distance to a firm is slightly higher (1,111 miles) than the corresponding averages of the average distance between the largest investors, and characterized by notably greater right-side asymmetry. The dispersion of average distance is especially pronounced for the measure of the acquirer to target distance (with the standard deviation of 816). The distance between an acquirer and target is also highly skewed to the right. The proportion of targets that are local to acquirers slightly exceeds 15% in our sample. This statistics comes in line with the relatively larger average distance between an acquiring and the target firms we discussed earlier. Both of these numbers indicate that firms are more likely to be acquired by remote companies than by their local neighbors.

Panel B shows the corresponding statistics for the variables reflecting institutional ownership for the acquiring companies. The percentage holdings of the institutional block-holders' ownership comprise at average around 16% of firm equity. The average number of block-holders is around two. The number of block-holders reaches four in the 90th percentile. Institutional shareholders own at average 50% of firm equity, while the distribution of institutional ownership is quite dispersed (i. e., combining merely 10% in the 10th percentile, and reaching 86% in the 90th percentile).

Panels C and D report the statistics for M&A characteristics for the deals with public and non-public targets respectively. The vast majority of the non-public targets are private firms (89% of the firms in the sub-sample). Cumulative abnormal return on the deals with the non-public targets appears to be at average positive (0.7%), this is in contrast to the negative average CAR observed for the deals with public targets (-0.5%). In the case of public targets, the acquisition deals tend to be considerably larger with respect to an acquirer own value than in case of non-public targets (i.e., the mean of relative value measure is around 0.40 for the M&As with public targets, and 0.30 for the transactions with non-public

targets). The percentage of cash-only funded deals is remarkably high for M&As with public targets (i.e., the mean of 100% Cash_Deal is equal to 36% for the public target M&As, and 23% for the non-public M&As). The proportion of hostile takeovers is rater negligible for both public and non-public target acquisitions (around 3% for the public M&As, and 0.3% for the non-public). Considerable part of the deals represents diversifying acquisitions. The proportion of such deals is merely the same – slightly higher than 40%, for both public and non-target M&As' samples.

Further, Panel E shows the statistics for various firm characteristics. An average value of market-to-book ratio of acquiring firms is around 1.66. Cash holdings of acquirers comprises at average 17% of the companies' book value. The average level of financial leverage of an acquirer is 21%, an average return on assets 11%, return on its stock – 19%, with average volatility of 3.3%. An average age of acquiring firms in our sample is around 19 years. Finally, almost 30% of the targets have S&P credit rating. The average value of the information cost index of the targets is equal to 0.37, and of the entrenchment index of corporate governance quality to 2.4.

4. Methodology and Main Results

4.1. Geographic distance between main institutional investors and M&A intensity

To examine the M&A activity, we first regress proxies for M&A intensity on proximity measures, institutional ownership variables, and variables known to affect acquisition policies. Formally, the regression equation has the following form:

$$M\&A_{it} = \alpha + \beta\ Distance\ Variables_{it} + \gamma\ Ownership\ Variables_i t +$$

$$+ \sum_{n=1}^{N} \delta_n Controls_{it} + TimeDummies_t + IndustryDummies_i + \varepsilon_{it} \qquad (1)$$

We use three proxies for M&A intensity, $M\&A_{it}$, which capture the acquisition activity by firm i in year t: 1) a binary variable that equals one if firm *i* is had an M&A activity during a given time period and zero otherwise; 2) the deal value of the acquisitions announced in year t by firm i, defined as the sum of deal values divided by the equity market value of the

acquirer at the announcement date; 3) the number of M&A transactions made by the same acquirer during a given year. These three variables capture different aspects of the firm's participation in the takeover market, i.e. its presence, volume, and the quantity of deals. We use a probit regression model when the dependent is the binary variable for acquisitions in year t; a Tobit regression model for the relative deal value acquired in M&A transactions in year t, because this variable is censored at zero; and finally a negative binomial regression model when the dependent is the count of acquisitions announced in year t. *Distance Variables*$_i$ are our proximity measures discussed in Section 3.2.1.; *Ownership Variables* are the institutional ownership variables summarized in Appendix A, and *Control variables* are comprised of the set of controllers based on the prior literature in this area (see Appendix A for definitions of control variables). More specifically, we include *Firm Size*, firm *Market-to-Book* ratio, firm's *Cash Holdings*, firm level of financial *Leverage*, the ratio of firm capital expenditures to the book value of its total assets (*Capex*), firm's return on assets (*ROA*), return on firm's stock (*Stock Return*), firm stock return *Volatility*, firm *Credit Rating*, and *Firm Age* estimated in years. Table 2 presents the results of the analysis.

[Please insert Table 2 about here]

The first four models in Panel A of Table 2 employ an average distance between the largest three institutional investors as the investor proximity measure (*Distance Top3 Investors*); the last four use the average between the five largest institutional owners as the measure of investors' geographic dispersion (*Distance Top5 Investors*). The first and the fifth models include solely corresponding investor proximity measures. The rest (i. e., models 2-4 and 6-8) include all of the control variables, the variable reflecting an average distance of largest investors to the firm, and one of ownership variables (i. e., the number of blockholders – models 2 and 6; the value of blockholders' equity holdings – models 3 and 7, and the value of institutional equity holdings – models 4 and 8). The coefficient of the investor geographic

proximity variable is consistently negative and significant at 1% level, for both proximity measures, and across all model specifications. This result implies that geographical proximity among the main institutional owners increases the probability to firm of being involved in M&A activity. While this result appear in conflict with a strict oversight of institutional investors on the firms' managers to restrain empire building, it still suggests that geographically close investors affect the acquisition policy of a firm. The negative sign is consistent with the role of close investors as deal facilitators.

The observed effect is robust controlling to the distance between main investors and the investee firm, and controlling to the level of institutional investors ownership. Further, the coefficients for institutional ownership estimated as the number of blockholders (see models 2 and 6 in Panel A of Table 2) as well as for these estimated as the total value of institutional holdings (see models 4 and 8 in Panel A of Table 2) are positive and significant, indicating that larger institutional ownership, and greater presence of large shareholders increasing probability that firm will undertake acquisitions. The coefficient reflecting the level of blockholders' ownership is positive for both models (i. e., models 3 and 7), however only weakly significant. Thus, we do not observe a strong effect of the value of large owners' holding on the probability of firm M&A activity.

The results presented in Panel B for the relative value acquired with the acquisitions in a given year are consistent with those of Panel A. More specifically, the coefficients for the institutional proximity measures are negative and highly significant for all models, indicating a positive effect of largest institutional investors' geographic closeness on relative value of firm acquisition deals. Consistent with the probit regressions, the coefficients of the variables reflecting institutional ownership are positive, and significant for the number of institutional investors and their overall ownership.

Finally, we present results of negative binomial models for the number of acquisitions announced in a given year in Panel C. The evidence shown is again in line with these for the previous two panels. The coefficients of our key distance variables stay positive and statistically significant at 1% level for all model specifications. Proximity among investors increases the number of acquisitions undertaken by the firm. In this panel, the variable corresponding to the number of blockholders lose its statistical significance. Nevertheless, the results for the other variables estimating the effect of total value of institutional stake remain the same as in the previous analysis, confirming that the level of institutional ownership has a significant influence on the number of M&A deals.

Overall the results indicate that the investors' proximity impacts the behavior of a firm in the takeover market. We still need to ascertain whether this impact has a positive effect on the quality of the deals announced as expected from both the monitoring and the deal-facilitator channels.

4.2.1 Geographic distance between main institutional investors and M&A quality

To estimate the effect of institutional coordination on value created by M&A, we use an ordinary least-squares (OLS) model, with a dependent variable defined as acquirer's 5-day cumulative abnormal return (CAR), and the same set of main explanatory variables. In addition, we include a number of control variables documented by existing literature as affecting the level of acquirer's CAR (this set as we explain below is slightly different from the one we use in the previous analyses). The regression equation is constructed as follows:

$$CAR_i = \alpha + \beta\ Distance\ Variables_i + \gamma\ Ownership\ Variables_i +$$

$$+ \sum_{n=1}^{N} \delta_n Controls_i + TimeDummies + \varepsilon_i \quad (4)$$

where CAR_i is defined as the value of acquirer's 5-day CAR during given M&A incidence. Distance and institutional ownership variables are similar to those used in the previous steps of our investigation. The set of control variables includes, like in the previous analyses, *Firm Size*, firm *Market-to-Book* ratio, financial *Leverage*, return on assets (*ROA*), *Stock Return*, stock return *Volatility*, and firm *Credit Rating*. Further, we add such controllers as a dummy variable for hostile deals (*Hostile*), a dummy variable for deals that were financed solely by cash (*100% Cash Deal*), a dummy for acquisitions when an acquirer and a target firm are from different industry sectors (*Diversifying*), and a dummy identifying whether the target firm is a private company (*Private Target*). We provide detail definitions of each of the controllers in Appendix A.

We investigate the effect on investor proximity on the quality of acquisitions of publicly listed targets as well as all targets. We first conduct the analysis using the sample of acquirers with the deals in which target was a publicly traded company. Given their importance and visibility, these are the acquisitions where institutional investors are more likely to intervene, and where they can facilitate the deal the most. The results of this analysis are reported in Panel A of Table 3.

[Please insert Table 3 about here]

As in Table 2, we report results for four different model specifications for each of the two key measures of institutional shareholder proximity. Thus, models 1-4 report the results for the tests using proximity between three largest institutional investors (*Distance Top3 Investors*), and models 5-8 – for the five largest investors (*Distance Top5 Investors*). Models 1 and 5 show results for the analysis using the key proximity measures only; models 2-4 and 6-8 – using corresponding institutional ownership variable in addition to proximity variables. The coefficients of the key proximity variables are negative and significant at 1% and at 5% level for the proximity measures constructed for three largest and for five institutional

investors, respectively. These results indicate that M&A deals undertaken by acquirers with geographically closer to each other largest institutional investors create higher value for the acquiring companies than deals announced by firms whose main institutional investors are geographically dispersed. Further, the coefficients for the investor distance to the firm are also negative and significant across all models. This means that investor proximity to the investee firm has a significant impact on acquirer cumulative abnormal return following the deal announcement. More specifically, the closer the main institutional investors are located to the investee firm the, the higher abnormal return is accumulated following acquisition announcement. None of the coefficients for institutional ownership is statistically significant.

Next, we repeat the analysis represented by equation (4) for the sample of acquiring firms with the deals targeting as publically traded so private and subsidiary firms as well. Panel B of Table 3 documents the results of this analysis.

The coefficients of our proximity measure calculated for the free largest institutional investors are statistically significant while at lower significance level than the corresponding coefficients for the sample with publically traded firms only. The coefficients for the proximity measure computed for the five largest institutional investors, however, lose their significance. Thus, the results reported in Table 3 show that geographic proximity between the main institutional investors of the acquiring firms plays considerably more important role when the target firm is publically traded than when the target is a private or a subsidiary company. Further, the distance to the firm variable loses its statistical significance as well, indicating that investors' distance to their investee acquirer does not appear to affect return generated by the acquirer at the day of acquisition announcement. In contrast, institutional ownership variables turn to be significant. Moreover, all of the ownership variables are negative, meaning that when considering private and subsidiary targets, institutional ownership has rather destroying effect on acquisition announcement return of the acquirer.

Overall, investor proximity affects positively M&A quality and the effect is stronger in acquisitions of listed targets, where institutional investors are expected to be more interested, either for the size of the deal or for its visibility. These results are consistent with the view that the activism of the coalitions of institutional investors plays a positive role in the acquisition policy of the acquiring firm.

5. Is the effect of investor proximity mitigated by information quality and corporate governance?

5.1. Information cost

We further investigate whether the effect of geographic proximity between the main institutional shareholders varies with the level of information costs the acquiring company. If information about the company is easy to obtain, the importance of proximity among institutional investors should decrease because there is less need for them to build coalition to be informed. For this purpose, we use *Information Cost Index* constructed as suggested by Duchin, Matsusaka, and Ozbas (2010) as a proxy for the costs of information about acquiring firm. This index is created on the basis of three financial-analyst related variables that measures an outsider's cost of becoming informed: the number of analysts that issued forecasts about the firm in a given year; the dispersion of analysts forecast; and, finally, the analyst forecast error.[7] We divide our sample once into two sub-samples: a sub-sample of acquirers with higher than median information cost index and a sub-sample of acquirers with lower than or equal to median information cost index. For each of the sab-samples we run the regression analysis in equation (4) to determine whether the effect on acquisition quality is different in the two subsamples. We report the results of the analysis in Table 4 for the acquisitions of listed firms.

[7] See Duchin, Matsuzaka and Ozbas (2010) for details about the construction of the variable.

[Please insert Table 4 about here]

The first three models are estimated for the sub-sample of firms with high information cost index; models 4-6 are estimated for the sub-sample of low information cost firms. The coefficients of the key proximity variables are negative and significant for both sub-sample and all of the three specifications, indicating negative effect of distance between investors of the acquiring firm on return on the announcement day, and coming in line with the results documented in the previous section (see Panel A of Table 3). More importantly, the coefficients for the sub-sample of high information cost firms are economically and but not statistically significantly higher than these for the sub-sample of low information cost firms.[8] Despite the lack of statistical significance, the table shows that the geographic proximity between main institutional investors of the acquiring firm has greater effect on value created by the deal for the acquiring company in an environment with high information cost, than when information cost is low. Notably, the effect of investors distance to the firm is also considerably stronger for the sub-sample of firms with high information cost than for these with the low cost (for the sub-sample of firms with low information cost index the effect is also statistically insignificant).

5.2. Corporate governance

We also examine whether the effect of geographic proximity between the main institutional shareholders is affected by the quality of corporate governance of the acquiring company. We employ the *Entrenchment Index* (*E-Index*) of Bebchuk, Cohen, and Ferrell (2009) as a proxy for the corporate governance quality of the acquiring company. Data to compute the entrenchment index are from RiskMetrics and are available only for large listed companies belonging to the S&P500, the S&P Mid-Cap 400, and the S&P Small-Cap 600.

[8] We test for statistical significance each of the differences. Due to space concerns, we do not report the results for this analysis, but confirm that they will be provided by the authors upon request.

We divide our sample once into two sub-samples: sub-sample of acquirers with higher than median and sub-sample of acquirers with lower or equal to the median value of information cost index, and once more into two other sub-samples: sub-sample of acquirers with higher than 3, and sub-sample of acquirers with lower or equal than 3 E-index value. For each of the sab-samples we run the CAR regression analysis. We report the results of the analysis in Table 5.

[Please insert Table 5 about here]

Models 1-3 are estimated for the sub-sample of firms with high E-index; models 4-5 – for the sub-sample with low E-index. The coefficients of our main proximity measure from models 1-3 are approximately twice higher than corresponding coefficients from models 4-6. Moreover, the estimates for the subsample of low E-index firms (reflecting better governance quality), are statistically insignificant. This result means that the distance between investors has significantly stronger impact on the value created to the acquirer by acquisition deal when the quality of corporate governance of the acquiring company is lower. Proximity among investors is more helpful when corporate governance is poor, i.e. environments where the single institution has limited tools to make an impact.

6. Additional & Robustness analyses.

6.1. M&As and Geography

The growing literature on M&A and geography has uncovered several determinants that could explain, at least partially, the effects that we have documented in previous sections. For this reason, we run a battery of additional analyses in this section to include geographical variables that are expected to impact on the acquisition policy.

Table 6 replicates the analyses of Table 2 controlling for two additional geographical variables: the concentration of local firms (Panel A) and the distance to a medium-sized

airport hub (Panel B). A high concentration of local firms increases the supply of potential targets for a firm, affecting their acquisition policy. A short distance to an airport hub facilitates the information sharing making investor proximity less relevant. Results in both Panel A and Panel B show that our results are not affected by the inclusions of these new variables. In an unreported analysis, we also include the distance to the nearest metropolitan statistical area. Again, our main results are not affected by the inclusion of this variable.

[Please insert Table 6 about here]

We analyze the effect of geographic based variables on the wealth effect around the acquisition announcements in Table 7. We control for five variables: 1) the distance between the acquirer and the target; 2) a dummy to capture if the target is a local firm; 3) the concentration of local firms; 4) the distance to the nearest mid-size hub; 5) overlap in the investor base between acquirer and the target firm.[9] Again, we find that the negative coefficients of our main variables are still statistically significant in the regressions on the sample of public targets. Concerning the sample of all targets, we observe that the inclusion of these additional geographically based variables makes the investors' distance variables statistically significant, especially the one among the top 3 investors.

[Please insert Table 7 about here]

6.2. Alternative measure of investor coordination

Our proxy of investor coordination, measured by the distance among the top institutions in a firm, does not account for the ownership stakes owned by these investors. Investors with small equity stakes may not be incentivize to share information with other investors, given their investment is negligible. To overcome this problem, we compute an alternative measure

[9] We also include the distance to the nearest metropolitan statistical area in the model in an unreported analysis. Our main results are confirmed. Distance to MSA is only significant in the regressions for the public target sample.

that has ownership stakes as weights. The formula we use for the average distance between the three (ten) largest institutional investors of the firm is the following:

$$\frac{\sum_{j=1}^{J} dist_j \times (v_{i,k} \times own_{i,k} + v_{i,l} \times own_{i,l})_j}{\sum_{j=1}^{J} (v_{i,k} \times own_{i,k} + v_{i,l} \times own_{i,l})_j}$$

where *dist* is the geographic distance in miles, estimated based on the approach first introduced in Coval and Moskowitz (1999), *v* is the fraction of capital that the investor allocates to the firm's stock, own is the fraction of the total shares outstanding held by the investor, *J* is the number of all possible connections between any of the two out of the five (ten) largest investors, subscripts *k, l, j* denote investors, subscript *i* denotes the firm.

We re-estimate both the baseline models of Table 2 (3) and the additional models discussed in Table 6 (7) to understand if ownership weights affect our results for M&A intensity (acquisition quality). We present the results for M&A intensity in Table 8. The weighted distance among the investors is still negative and highly significant in all panels. So, we confirm that, even after controlling for the ownership stakes of the investors in our proxy, distance matters.

[Please insert Table 8 about here]

Results for abnormal returns around the acquisition announcements are presented in Table 9. Likewise to the M&A intensity, we estimate the baseline and the additional models with the weighted distance measure. Once again, results are remarkably similar to those of the main models. Distance maintains a negative and significant coefficient, which indicates a positive effect of investor coordination on the quality of the acquisition.

[Please insert Table 9 about here]

7. Conclusions

In this paper, we examine the impact of institutional investors' coordination on intensity and quality of mergers and acquisitions. As proxy for the communication, cooperation and coordination ability between firm's institutional shareholders, we use geographic distance between those investors.

Our results reveal that firms with geographically proximate to each other institutional shareholders are more likely to undertake M&As.

Furthermore, our findings show that M&A deals involving firms, for which the largest institutional investors are geographically close to one another, tend to be of a higher quality than the deals involving firms with investors geographically dispersed each from the other.

Summing up, our results show that coordination among main institutional shareholders magnifies M&A activity, simultaneously elevating its quality. Moreover, geographic proximity between main institutional owners of the acquiring firm is especially important when information costs is high, and when corporate governance quality is low.

Appendix A. Definitions of variables

Variable	Definition
Main dependent variables	
M&A_Incidence	Dummy variable equal to one, if a company engages in M&A transaction in a given fiscal year, and zero otherwise (Source: SDC)
Relative_Deal_Value	Deal value divided by the equity market value of the acquirer at the announcement date. We require that the relative deal value be at least 1% of acquirer market capitalization (Source: SDC)
Number_of_Deals	Number of M&A transactions made by the same acquirer (Source: SDC)
CAR	Five-day cumulative abnormal return for the acquirer around the M&A announcement. The return is estimated relative to a CRSP value-weighted market model using a year of daily data (Source: CRSP)
Geography variables	
Distance_Top3_Investors	Equally-weighted geographic distance between the three largest institutional investors (Source: Thomson Reuters, Lipper Marketplace, Compact Disclosure, survey of websites)
Distance_Top5_Investors	Equally-weighted geographic distance between the five largest institutional investors (Source: Thomson Reuters, Lipper Marketplace, Compact Disclosure, survey of websites)
Distance_to_Firm	Equally-weighted geographic distance between the firm and its ten largest institutional investors. Definition according to Chhaochharia, Kumar, and Niessen-Ruenzi (2012) (Source: Thomson Reuters)
Distance_Acquirer_Target	Geographic distance between the acquirer and the target in the M&A transaction (Source: SDC)
Target_Locality	Dummy variable equal to one if the target is headquartered within the 60 mile (100 km) radius of the acquirer, and zero otherwise (Source: SDC)
Concentration_Local_Firms	Number of firms headquartered within the 60 mile (100 km) radius from the acquirer divided by the number of firms reported in Compustat in a given fiscal year (Source: Compustat)
Distance_to_Air_Route	Geographic distance to the nearest large or medium-sized airport hub as categorized by Federal Aviation Administration (FAA) (Source: https://www.faa.gov/)

Institutional ownership variables	
#_Blockholders	Number of institutional investors owning individually at least 5% of firm's common equity (Source: Thomson Reuters)
Blockholder_Ownership	Total ownership of firm's common equity by all institutional investors identified as blockholders (Source: Thomson Reuters)
Institutional_Ownership	Total ownership of firm's common equity by institutional investors (Source: Thomson Reuters)
Common_Investor_Val	Value of equity invested by common investors in the acquirer to the value of equity invested by common investors in the target (Source: Thomson Reuters)
Common_Investor_Frac	Fraction of equity invested by common investors in the acquirer to the fraction of equity invested by common investors in the target (Source: Thomson Reuters)
M&A characteristics	
100%_Cash_Deal	Dummy variable equal to one if M&A is all cash deal, and zero otherwise (Source: SDC)
Hostile	Dummy variable equal to one if M&A attitude is classified as hostile, and zero otherwise (Source: SDC)
Diversifying	Dummy variable equal to one if the acquirer and the target belong to a different 2-digit SIC category, and zero otherwise (source: SDC)
Private_Target	Dummy variable equal to one if the target is a private firm or subsidiary, and zero otherwise (Source: SDC)
Firm characteristics	
Firm_Size	Logarithmic transformation of the market capitalization of common equity (Source: Compustat)
Market_to_Book	The sum of the market value of common equity and the book value of total debt divided by the book value of total assets (Source: Compustat)
Cash_Holdings	Cash and short-term investments divided by the book value of total assets (Source: Compustat)
Leverage	The sum of long-term debt and debt in current liabilities divided by the book value of total assets (Source: Compustat)
Capex	Capital expenditures divided by the book value

	of total assets (Source: Compustat)
ROA	Operating income before depreciation divided by the book value of total assets (Source: Compustat)
Stock_Return	Return on common equity measured over a 12-month period using daily data (Source: CRSP)
Volatility	Standard deviation of firm's daily stock returns averaged over 252 trading days (Source: CRSP)
Credit_Rating	A dummy variable equal to one if the borrower has an S&P credit rating, and zero otherwise (Source: Compustat)
Firm_Age	Number of years the firm is recorded in CRSP (Source: CRSP)
Information_Cost_Index	Measure reflecting the cost of acquiring information by outsiders calculated following Duchin, Matsusaka, and Ozbas (2010) (Source: IBES)
Entrenchment_Index	Measure of firms' quality of corporate governance computed following the methodology described in Bebchuk, Cohen, and Ferrell (2009) (Source: ISS)

Appendix B: Alternative measure of investor coordination

We introduce the alternative measure of geographic distance among investors, allowing for two sources of economic incentives to drive coordinating efforts among them. All else equal, we expect that the investor with the largest equity stake in a company, and therefore more exposed to firm performance, would be more likely to play a key role in monitoring activities, including the formation of monitoring coalition with other large investors. Similarly, the investor with the highest fraction of capital invested in the firm, all else equal, would be more likely to perform stricter monitoring over company's management. This investor would be more likely to take a lead in the monitoring alliance formed together with other investors. This intuition can be expressed formally by:

$$\frac{\sum_{j=1}^{J} DIST_j \times (C_{i,k} \times E_{i,k} + C_{i,l} \times E_{i,l})_j}{\sum_{j=1}^{J} (C_{i,k} \times E_{i,k} + C_{i,l} \times E_{i,l})_j},$$

where *DIST* is the geographic distance, calculated following the approach presented in Coval and Moskowitz (1999); *C* is the fraction of capital the investor invests in company's equity; *E* is the fraction of company's total shares outstanding held by the investor; *J* is the number of all possible connections between any of the two investors in a group; subscripts *k*, *l*, and *j* denote investors; and subscript *i* denotes the firm.

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Table 1
Descriptive statistics
The table presents summary statistics for the variables used in the study. Our sample covers the period between 1990 and 2014. Sample size varies by row because of missing information on geographic location and other characteristics. Distance is measured in miles. All variables are winsorized at the 1st and 99th percentiles. Variable definitions are reported in Appendix A.

Variable	Mean	Median	Std	10^{th} Pctile	90^{th} Pctile	Observations
Panel A: Geographic characteristics						
Distance_Top3_Investors	1,075.4	1,197.1	643.17	123.51	1,754.5	39,305
Distance_Top5_Investors	1,035.6	1,155.8	444.48	325.21	1,546.0	37,497
WDistance_Top3_Investors	1,082.4	1,226.1	681.25	139.62	2007.8	38,109
WDistance_Top5_Investors	1,051.3	1,053.5	513.65	301.29	1,717.6	38,109
Distance_to_Firm	1,110.9	1,006.8	506.92	541.98	1,918.5	39,305
Distance_Acquirer_to_Target	929.38	715.32	815.52	18.076	2366.4	16,330
Target_Locality	0.155	0.000	0.362	0.000	1.000	16,330
Concentration_Local_Firms	0.041	0.031	0.041	0.003	0.126	39,249
Distance_to_Air_Route	31.712	14.525	45.997	4.826	91.709	38,779
Panel B: Institutional characteristics						
Blockholder_Ownership	0.159	0.137	0.134	0.000	0.349	39,305
#_Blockholders	1.869	2.000	1.467	0.000	4.000	39,305
Institutional_Ownership	0.503	0.527	0.272	0.109	0.860	39,305
Common_Investors_Val	3976	33.88	39069	3.423	1166	813
Common_Investors_Frac	154.8	3.100	1613	1.268	29.42	813
Panel C: M&A characteristics if target is public						
CAR	-0.005	-0.003	0.075	-0.099	0.084	1,529
Relative_Deal_Value	0.403	0.197	0.520	0.035	1.058	1,529
Number_of_Deals	2.809	2.000	2.703	2.000	5.000	1,529
100%_Cash_Deal	0.360	0.000	0.480	0.000	1.000	1,529
Hostile	0.034	0.000	0.182	0.000	0.000	1,529
Diversifying	0.405	0.000	0.491	0.000	1.000	1,529
Panel D: M&A characteristics if target is public, private, or a subsidiary						
CAR	0.007	0.004	0.069	-0.067	0.086	14,307
Relative_Deal_Value	0.298	0.132	0.460	0.027	0.719	14,307
Number_of_Deals	2.603	2.000	2.730	1.000	5.000	14,307
100%_Cash_Deal	0.232	0.000	0.422	0.000	1.000	14,307
Hostile	0.003	0.000	0.061	0.000	0.000	14,307
Diversifying	0.415	0.000	0.492	0.000	1.000	14,307
Private_Target	0.891	1.000	0.310	0.000	1.000	14,307
Panel E: Firm characteristics						
Firm_Size	5.923	5.793	1.995	3.407	8.672	39,305
Market_to_Book	1.659	1.206	1.398	0.627	3.162	39,305
Cash_Holdings	0.172	0.088	0.203	0.007	0.481	39,305
Leverage	0.209	0.175	0.199	0.000	0.477	39,305
Capex	0.060	0.040	0.062	0.010	0.131	39,305
ROA	0.106	0.125	0.146	-0.029	0.239	39,305
Stock_Return	0.189	0.083	0.639	-0.440	0.860	39,305
Volatility	0.033	0.029	0.017	0.015	0.056	39,305
Credit_Rating	0.297	0.000	0.457	0.000	1.000	39,305
Firm_Age	18.919	14.178	16.023	3.917	39.106	39,305
Information_Cost_Index	0.369	0.330	0.148	0.230	0.593	1,454
Entrenchment_Index	2.399	2.000	1.471	0.000	4.000	1,023

Table 2
The effect of investor coordination on M&A intensity
Dependent variables are measured at the firm level in a given fiscal year. Regressions control for year and industry fixed effects. Industries are defined by 2-digit SIC code. Standard errors are adjusted for heteroscedasticity and clustering at the firm level. Superscripts *a*, *b*, and *c* indicate significance at the 1, 5, and 10% levels, respectively. All variables are winsorized at the 1st and 99th percentiles. Variable definitions are reported in Appendix A. The constant is not reported.

Panel A: Probit regressions of the incidence of M&A

Dependent Variable	= 1 if M&A, 0 otherwise							
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Key explanatory variables:								
Distance_Top3_Investors	-1.147^{a}	-0.524^{a}	-0.527^{a}	-0.426^{a}				
	(0.000)	(0.000)	(0.000)	(0.002)				
Distance_Top5_Investors					-1.700^{a}	-0.754^{a}	-0.750^{a}	-0.650^{a}
					(0.000)	(0.000)	(0.000)	(0.000)
Distance_to_Firm		0.106	0.110	0.101		0.128	0.130	0.128
		(0.616)	(0.604)	(0.636)		(0.554)	(0.546)	(0.553)
#_Blockholders		0.011^{c}				0.011^{c}		
		(0.084)				(0.097)		
Blockholder_Ownership			0.023				0.026	
			(0.757)				(0.723)	
Institutional_Ownership				0.478^{a}				0.476^{a}
				(0.000)				(0.000)
Control variables:								
Firm_Size		0.182^{a}	0.182^{a}	0.148^{a}		0.183^{a}	0.183^{a}	0.149^{a}
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Market_to_Book		-0.051^{a}	-0.052^{a}	-0.043^{a}		-0.049^{a}	-0.050^{a}	-0.041^{a}
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Cash_Holdings		0.040	0.043	0.008		0.042	0.045	0.008
		(0.551)	(0.518)	(0.902)		(0.540)	(0.509)	(0.898)
Leverage		-0.106^{c}	-0.104	-0.114^{c}		-0.116^{c}	-0.114^{c}	-0.125^{c}
		(0.102)	(0.108)	(0.079)		(0.079)	(0.084)	(0.059)
Capex		-1.021^{a}	-1.022^{a}	-1.004^{a}		-1.030^{a}	-1.031^{a}	-1.011^{a}
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
ROA		0.593^{a}	0.595^{a}	0.542^{a}		0.589^{a}	0.591^{a}	0.538^{a}
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Stock_Return		0.125^{a}	0.125^{a}	0.121^{a}		0.124^{a}	0.124^{a}	0.121^{a}
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Volatility		-2.156^{a}	-2.322^{a}	-1.265		-2.323^{a}	-2.481^{a}	-1.415^{c}
		(0.005)	(0.003)	(0.104)		(0.003)	(0.002)	(0.075)
Credit_Rating		0.057^{c}	0.056^{c}	0.056^{c}		0.058^{c}	0.057^{c}	0.057^{c}
		(0.071)	(0.076)	(0.074)		(0.073)	(0.078)	(0.077)
Firm_Age		-0.002^{a}	-0.002^{a}	-0.001^{b}		-0.002^{a}	-0.002^{a}	-0.001^{b}
		(0.001)	(0.001)	(0.018)		(0.001)	(0.000)	(0.017)
Pseudo R2	0.030	0.093	0.093	0.097	0.030	0.095	0.095	0.099
N	49,450	39,304	39,304	39,304	47,173	37,496	37,496	37,496

Panel B: Tobit regressions of the relative deal value in the M&A transaction

Dependent Variable	Deal Value / Market Value of Acquirer's Equity							
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Key explanatory variables:								
Distance_Top3_Investors	-0.509[a]	-0.295[a]	-0.296[a]	-0.230[a]				
	(0.000)	(0.000)	(0.000)	(0.004)				
Distance_Top5_Investors					-0.757[a]	-0.443[a]	-0.439[a]	-0.375[a]
					(0.000)	(0.000)	(0.000)	(0.002)
Distance_to_Firm		-0.009	-0.006	-0.102		0.014	0.016	0.015
		(0.939)	(0.955)	(0.917)		(0.907)	(0.892)	(0.895)
#_Blockholders		0.012[a]				0.012[a]		
		(0.000)				(0.002)		
Blockholder_Ownership			0.067				0.074[c]	
			(0.122)				(0.093)	
Institutional_Ownership				0.332[a]				0.332[a]
				(0.000)				(0.000)
Control variables:								
Firm_Size		0.055[a]	0.055[a]	0.030[a]		0.055[a]	0.055[a]	0.031[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Market_to_Book		-0.039[a]	-0.040[a]	-0.034[a]		-0.038[a]	-0.039[a]	-0.033[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Cash_Holdings		0.061	0.063	0.040		0.060	0.062	0.038
		(0.112)	(0.101)	(0.294)		(0.128)	(0.117)	(0.335)
Leverage		0.045	0.045	0.041		0.036	0.036	0.031
		(0.233)	(0.225)	(0.277)		(0.346)	(0.339)	(0.410)
Capex		-0.612[a]	-0.612[a]	-0.597[a]		-0.589[a]	-0.589[a]	-0.573[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
ROA		0.347[a]	0.349[a]	0.309[a]		0.337[a]	0.339[a]	0.299[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Stock_Return		0.073[a]	0.073[a]	0.071[a]		0.073[a]	0.073[a]	0.070[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Volatility		-1.372[a]	-1.481[a]	-0.824[c]		-1.482[a]	-1.583[a]	-0.923[c]
		(0.005)	(0.002)	(0.096)		(0.003)	(0.001)	(0.064)
Credit_Rating		0.045[b]	0.044[b]	0.044[b]		0.041[b]	0.041[b]	0.040[b]
		(0.013)	(0.015)	(0.014)		(0.023)	(0.026)	(0.025)
Firm_Age		-0.001[a]	-0.001[a]	-0.001[b]		-0.001[a]	-0.001[a]	-0.001[b]
		(0.000)	(0.000)	(0.011)		(0.000)	(0.000)	(0.010)
Pseudo R2	0.027	0.056	0.055	0.061	0.027	0.056	0.056	0.062
N	49,454	39,305	39,305	39,305	49,454	37,497	37,497	37,497

Panel C: Negative binomial regressions of the number of M&A

Dependent Variable	Number of M&A deals							
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Key explanatory variables:								
Distance_Top3_Investors	-2.097[a]	-0.962[a]	-0.966[a]	-0.871[a]				
	(0.000)	(0.000)	(0.000)	(0.004)				
Distance_Top5_Investors					-3.070[a]	-1.084[a]	-1.081[a]	-1.002[a]
					(0.000)	(0.000)	(0.000)	(0.002)
Distance_to_Firm		-0.276	-0.275	-0.247		-0.265	-0.265	-0.226
		(0.454)	(0.455)	(0.512)		(0.485)	(0.892)	(0.558)
#_Blockholders		0.002				-0.001		
		(0.820)				(0.909)		
Blockholder_Ownership			-0.132				0.156[c]	
			(0.294)				(0.222)	
Institutional_Ownership				0.631[a]				0.615[a]
				(0.000)				(0.000)
Control variables:								
Firm_Size		0.358[a]	0.357[a]	0.320[a]		0.361[a]	0.360[a]	0.324[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Market_to_Book		-0.094[a]	-0.095[a]	-0.081[a]		-0.092[a]	-0.093[a]	-0.079[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Cash_Holdings		0.076	0.082	0.024		0.087	0.094	0.032
		(0.570)	(0.535)	(0.859)		(0.520)	(0.489)	(0.815)
Leverage		0.029	0.032	0.020		0.008	0.010	-0.002
		(0.797)	(0.779)	(0.858)		(0.944)	(0.927)	(0.982)
Capex		-1.925[a]	-1.924[a]	-1.897[a]		-1.872[a]	-1.872[a]	-1.840[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
ROA		0.886[a]	0.888[a]	0.811[a]		0.879[a]	0.880[a]	0.804[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Stock_Return		0.237[a]	0.236[a]	0.231[a]		0.238[a]	0.237[a]	0.233[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Volatility		-3.242[b]	-3.478[b]	-1.68		-3.466[b]	-3.672[b]	-1.870
		(0.026)	(0.017)	(0.250)		(0.020)	(0.014)	(0.214)
Credit_Rating		0.061	0.060	0.060		0.070	0.069	0.069
		(0.282)	(0.290)	(0.284)		(0.209)	(0.213)	(0.213)
Firm_Age		-0.004[a]	-0.004[a]	-0.003[b]		-0.004[a]	-0.004[a]	-0.003[a]
		(0.003)	(0.002)	(0.034)		(0.000)	(0.000)	(0.010)
N	49,454	39,305	39,305	39,305	49,454	37,497	37,497	37,497

Table 3
The effect of institutional coordination on value created by M&A
Regressions are estimated by ordinary least-squares (OLS) model with year fixed effects. We consider M&A transactions with relative deal value of at least 0.01. Standard errors are adjusted for heteroscedasticity and clustering at the firm level. Superscripts *a*, *b*, and *c* indicate significance at the 1, 5, and 10% levels, respectively. All variables are winsorized at the 1st and 99th percentiles. Variable definitions are reported in Appendix A. The constant is not reported.

Panel A: Publicly traded targets

Dependent Variable	Acquirer's 5-day Cumulative Abnormal Return							
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Key explanatory variables								
Distance_Top3_Investors	-0.099^{a}	-0.085^{a}	-0.086^{a}	-0.085^{a}				
	(0.001)	(0.005)	(0.005)	(0.005)				
Distance_Top5_Investors					-0.092^{b}	-0.081^{b}	-0.081^{b}	-0.073^{b}
					(0.027)	(0.050)	(0.051)	(0.038)
Distance_to_Firm		-0.089^{b}	-0.089^{b}	-0.084^{b}		-0.105^{a}	-0.105^{a}	-0.091^{a}
		(0.013)	(0.013)	(0.018)		(0.004)	(0.004)	(0.005)
#_Blockholders		-0.000				0.000		
		(0.855)				(0.944)		
Blockholder_Ownership			-0.006				0.001	
			(0.731)				(0.950)	
Institutional_Ownership				-0.004				-0.015^{c}
				(0.657)				(0.083)
Control variables								
Firm_Size		-0.005^{a}	-0.005^{a}	-0.005^{a}		-0.005^{a}	-0.005^{a}	-0.004^{a}
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Market_to_Book		0.000	0.000	0.000		0.000	0.000	0.000
		(0.937)	(0.943)	(0.997)		(0.956)	(0.956)	(0.513)
ROA		0.020	0.020	0.027		0.012	0.012	0.028
		(0.419)	(0.416)	(0.271)		(0.606)	(0.606)	(0.166)
Stock_Return		-0.001	-0.001	-0.001		-0.000	-0.000	-0.003
		(0.765)	(0.766)	(0.795)		(0.784)	(0.783)	(0.219)
Leverage		0.025^{c}	0.025^{c}	0.025^{c}		0.021	0.021	0.023^{b}
		(0.084)	(0.086)	(0.074)		(0.142)	(0.143)	(0.048)
Relative_Deal_Value		-0.018^{a}	-0.018^{a}	-0.017^{a}		-0.018^{a}	-0.018^{a}	-0.016^{a}
		(0.002)	(0.002)	(0.002)		(0.004)	(0.004)	(0.003)
Hostile		-0.005	-0.005	-0.005		-0.006	-0.006	-0.009
		(0.567)	(0.566)	(0.567)		(0.529)	(0.531)	(0.203)
100%_Cash_Deal		0.014^{a}	0.015^{a}	0.014^{a}		0.013^{a}	0.013^{a}	0.013^{a}
		(0.000)	(0.000)	(0.000)		(0.000)	(0.001)	(0.000)
Diversifying		0.004	0.004	0.004		0.004	0.004	0.003
		(0.254)	(0.255)	(0.256)		(0.217)	(0.216)	(0.298)
Private_Target								
Adjusted R-squared	0.034	0.073	0.073	0.073	0.029	0.070	0.070	0.064
N	1,644	1,529	1,529	1,548	1,591	1,483	1,483	1,940

Panel B: Public, private, and subsidiary targets

Dependent Variable	Acquirer's 5-day Cumulative Abnormal Return							
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Key explanatory variables								
Distance_Top3_Investors	0.001	-0.016[c]	-0.017[c]	-0.017[c]				
	(0.906)	(0.090)	(0.078)	(0.072)				
Distance_Top5_Investors					0.021	-0.006	-0.006	-0.008
					(0.120)	(0.650)	(0.631)	(0.578)
Distance_to_Firm		-0.006	-0.006	-0.006		-0.007		-0.008
		(0.566)	(0.592)	(0.552)		(0.544)		(0.476)
#_Blockholders		-0.001[a]				-0.001[a]		
		(0.002)				(0.007)		
Blockholder_Ownership			-0.017[a]				-0.014[a]	
			(0.002)				(0.008)	
Institutional_Ownership				-0.007[b]				-0.006[c]
				(0.032)				(0.076)
Control variables								
Firm_Size		-0.003[a]	-0.003[a]	-0.002[a]		-0.002[a]	-0.002[a]	-0.002[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Market_to_Book		-0.000	-0.000	-0.000		-0.000	-0.000	-0.000
		(0.200)	(0.197)	(0.157)		(0.255)	(0.253)	(0.220)
ROA		0.019[b]	0.019[b]	0.020[a]		0.017[b]	0.016[b]	0.017[b]
		(0.014)	(0.015)	(0.000)		(0.034)	(0.037)	(0.028)
Stock_Return		-0.002[b]	-0.002[b]	-0.002[c]		-0.002[b]	-0.002[b]	-0.002[c]
		(0.050)	(0.049)	(0.063)		(0.050)	(0.049)	(0.063)
Leverage		-0.001	-0.001	-0.001		-0.001	-0.001	-0.001
		(0.764)	(0.772)	(0.652)		(0.740)	(0.749)	(0.654)
Relative_Deal_Value		0.008[a]	0.008[a]	0.008[a]		0.008[a]	0.008[a]	0.008[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Hostile		-0.001	-0.001	-0.001		-0.001	-0.001	-0.001
		(0.907)	(0.894)	(0.886)		(0.882)	(0.871)	(0.864)
100%_Cash_Deal		0.003[b]	0.003[b]	0.003[b]		0.002[b]	0.002[b]	0.002[b]
		(0.015)	(0.016)	(0.014)		(0.041)	(0.042)	(0.040)
Diversifying		-0.000	-0.000	-0.000		-0.000	-0.000	-0.000
		(0.513)	(0.524)	(0.496)		(0.533)	(0.549)	(0.496)
Private_Target		0.013[a]	0.013[a]	0.013[a]		0.013[a]	0.013[a]	0.013[a]
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
Adjusted R-squared	0.005	0.023	0.023	0.025	0.006	0.023	0.022	0.022
N	16,096	14,242	14,242	14,307	15,340	13,573	13,573	13,629

Table 4
Cost of acquiring information by outsiders
Regressions are estimated using OLS with year fixed effects. The information cost index is defined as in Duchin, Matsusaka, and Ozbas (2010), and classified as "high" if its value is greater than the median, and "low" otherwise. Standard errors are adjusted for heteroscedasticity and clustering at the firm level. Superscripts *a*, *b*, and *c* indicate significance at the 1, 5, and 10% levels, respectively. All variables are winsorized at the 1st and 99th percentiles. Variable definitions are reported in Appendix A. The constant is not reported.

Dependent Variable	Acquirer's 5-day Cumulative Abnormal Return					
	Information Cost High			Information Cost Low		
	[1]	[2]	[3]	[4]	[5]	[6]
Key explanatory variables						
Distance_Top3_Investors	-0.118^{b}	-0.118^{b}	-0.108^{b}	-0.067^{c}	-0.068^{c}	-0.071^{c}
	(0.022)	(0.022)	(0.032)	(0.087)	(0.081)	(0.068)
Distance_to_Firm	-0.134^{b}	-0.134^{b}	-0.124^{b}	-0.059	-0.058	-0.062
	(0.038)	(0.037)	(0.047)	(0.157)	(0.161)	(0.133)
#_Blockholders	0.001			-0.002		
	(0.508)			(0.186)		
Blockholder_Ownership		0.018			-0.037	
		(0.521)			(0.122)	
Institutional_Ownership			0.016			-0.020
			(0.349)			(0.142)
Control variables						
Firm_Size	-0.007^{a}	-0.007^{a}	-0.009^{a}	-0.004^{b}	-0.004^{b}	-0.003^{b}
	(0.004)	(0.004)	(0.001)	(0.029)	(0.026)	(0.044)
Market_to_Book	0.000	0.000	0.000	-0.000	-0.000	-0.000
	(0.753)	(0.751)	(0.804)	(0.872)	(0.851)	(0.824)
ROA	0.033	0.033	0.038	0.001	0.001	0.008
	(0.363)	(0.362)	(0.293)	(0.975)	(0.978)	(0.826)
Stock_Return	-0.003	-0.003	-0.003	0.001	0.002	0.002
	(0.516)	(0.515)	(0.493)	(0.748)	(0.727)	(0.709)
Leverage	0.025	0.025	0.025	0.025	0.025	0.026
	(0.118)	(0.118)	(0.112)	(0.342)	(0.342)	(0.287)
Relative_Deal_Value	-0.008	-0.008	-0.008	-0.028^{a}	-0.028^{a}	-0.028^{a}
	(0.326)	(0.328)	(0.300)	(0.001)	(0.001)	(0.001)
Hostile	-0.006	-0.006	-0.006	-0.002	-0.002	-0.003
	(0.606)	(0.638)	(0.628)	(0.851)	(0.854)	(0.782)
100%_Cash_Deal	0.018^{b}	0.018^{b}	0.017^{b}	0.011^{b}	0.011^{b}	0.011^{b}
	(0.011)	(0.011)	(0.012)	(0.022)	(0.021)	(0.021)
Diversifying	0.007	0.007	0.007	0.002	0.002	0.002
	(0.240)	(0.238)	(0.225)	(0.670)	(0.660)	(0.660)
R-squared	0.088	0.088	0.089	0.097	0.098	0.098
N	700	700	714	829	829	834

Table 5
Good and bad corporate governance
Regressions are estimated using OLS with year fixed effects. Corporate governance is classified as "good" if the value of the entrenchment index as defined in Bebchuk, Cohen, and Ferrell (2009) is lower or equal to 3, and "bad" otherwise. Standard errors are adjusted for heteroscedasticity and clustering at the firm level. Superscripts *a*, *b*, and *c* indicate significance at the 1, 5, and 10% levels, respectively. All variables are winsorized at the 1st and 99th percentiles. Variable definitions are reported in Appendix A. The constant is not reported.

Dependent Variable	Acquirer's 5-day Cumulative Abnormal Return					
	Bad Governance			Good Governance		
	[1]	[2]	[3]	[4]	[5]	[6]
Key explanatory variables						
Distance_Top3_Investors	-0.119^{b}	-0.117^{b}	-0.118^{b}	-0.055	-0.056	-0.054
	(0.014)	(0.016)	(0.015)	(0.159)	(0.154)	(0.168)
Distance_to_Firm	-0.084	-0.086	-0.079	-0.086^{b}	-0.083^{b}	-0.080^{c}
	(0.182)	(0.171)	(0.195)	(0.043)	(0.047)	(0.056)
#_Blockholders	0.001			-0.001		
	(0.652)			(0.386)		
Blockholder_Ownership		0.020			-0.036	
		(0.421)			(0.141)	
Institutional_Ownership			0.010			-0.012
			(0.535)			(0.414)
Control variables						
Firm_Size	-0.006^{a}	-0.006^{a}	-0.007^{a}	-0.004^{a}	-0.005^{a}	-0.004^{a}
	(0.003)	(0.004)	(0.001)	(0.010)	(0.004)	(0.006)
Market_to_Book	0.000	0.000	0.000	0.000	0.000	0.000
	(0.804)	(0.814)	(0.845)	(0.634)	(0.651)	(0.673)
ROA	0.011	0.011	0.021	0.041	0.040	0.041
	(0.708)	(0.724)	(0.494)	(0.263)	(0.272)	(0.260)
Stock_Return	0.000	0.000	0.000	-0.002	-0.002	-0.001
	(0.904)	(0.901)	(0.918)	(0.622)	(0.630)	(0.680)
Leverage	0.009	0.010	0.013	0.058^{a}	0.058^{a}	0.056^{a}
	(0.643)	(0.627)	(0.514)	(0.002)	(0.002)	(0.002)
Relative_Deal_Value	-0.014^{c}	-0.014^{c}	-0.013^{c}	-0.021^{b}	-0.021^{b}	-0.020^{b}
	(0.061)	(0.064)	(0.060)	(0.027)	(0.030)	(0.028)
Hostile	-0.017	-0.017	-0.016	-0.004	-0.004	-0.004
	(0.341)	(0.346)	(0.369)	(0.715)	(0.708)	(0.690)
100%_Cash_Deal	0.019^{a}	0.019^{a}	0.017^{a}	0.011^{b}	0.011^{b}	0.011^{b}
	(0.005)	(0.005)	(0.010)	(0.025)	(0.023)	(0.020)
Diversifying	0.006	0.006	0.006	-0.000	-0.000	-0.000
	(0.273)	(0.263)	(0.268)	(0.987)	(0.998)	(0.996)
R-squared	0.093	0.093	0.092	0.110	0.112	0.110
N	757	757	766	772	772	782

Table 6
Robustness analysis of M&A intensity results
This table reports robustness tests with additional varied factors that may affect M&A intensity. Models [1]-[2] use *M&A_Incidence* as dependent variable, whereas models [3]-[4] and [5]-[6] use *Relatvie_Deal_Value* and *Number_of_Deals*, respectively. All regressions use the same control variables as in the baseline model presented in Table 2. The complete set of estimates can be found in the Internet Appendix. Superscripts *a*, *b*, and *c* indicate significance at the 1, 5, and 10% levels, respectively. All variables are winsorized at the 1st and 99th percentiles. Variable definitions are reported in Appendix A. The constant is not reported.

Panel A: Concentration of local firms

	Probit		Tobit		Negative binomial	
Variable	[1]	[2]	[3]	[4]	[5]	[6]
Distance_Top3_Investors	-0.422[a]		-0.229[a]		-0.860[a]	
	(0.002)		(0.004)		(0.000)	
Distance_Top5_Investors		-0.637[a]		-0.369[a]		-0.981[a]
		(0.002)		(0.002)		(0.002)
Distance_to_Firm	0.094	0.124	-0.032	-0.002	-0.269	-0.246
	(0.659)	(0.566)	(0.783)	(0.981)	(0.482)	(0.529)
Concentration_Local_Firms	0.005	0.054	-0.180	-0.152	-0.087	-0.024
	(0.983)	(0.849)	(0.250)	(0.339)	(0.855)	(0.960)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.0967	0.0982	0.0606	0.0614		
N	39,249	37,447	39,250	37,448	39,250	37,448

Panel B: Geographic distance to the nearest air route

	Probit		Tobit		Negative binomial	
Variable	[1]	[2]	[3]	[4]	[5]	[6]
Distance_Top3_Investors	-0.415[a]		-0.228[a]		-0.817[a]	
	(0.003)		(0.004)		(0.000)	
Distance_Top5_Investors		-0.650[a]		-0.372[a]		-0.998[a]
		(0.002)		(0.002)		(0.002)
Distance_to_Firm	0.097	0.130	-0.020	0.005	-0.295	-0.262
	(0.654)	(0.556)	(0.863)	(0.962)	(0.447)	(0.509)
Distance_to_Air_Route	0.002	0.001	-0.000	-0.001	-0.024	-0.026
	(0.795)	(0.921)	(0.981)	(0.812)	(0.192)	(0.171)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.0963	0.0978	0.0610	0.0618		
N	38,779	37,002	38,780	37,003	38,780	37,003

Table 7
Robustness analysis of acquirer CAR
This table reports robustness tests with additional factors that may affect acquirer CAR. Regressions are estimated by ordinary least-squares (OLS) model with year fixed effects. All regressions use the same control variables as in the baseline model presented in Table 3. Due to data limitations, Panel F uses only public targets. The complete set of estimates can be found in the Internet Appendix. Superscripts *a*, *b*, and *c* indicate significance at the 1, 5, and 10% levels, respectively. All variables are winsorized at the 1st and 99th percentiles. Variable definitions are reported in Appendix A. The constant is not reported.

Panel A: Geographic distance between the acquirer and the target				
	Public Targets		All Targets	
	[1]	[2]	[3]	[4]
Distance_Top3_Investors	-0.111[a]		-0.037[a]	
	(0.000)		(0.008)	
Distance_Top5_Investors		-0.119[b]		-0.042[b]
		(0.011)		(0.042)
Distance_to_Firm	-0.075[c]	-0.092[b]	-0.000	-0.003
	(0.059)	(0.022)	(0.979)	(0.857)
Distance_Acquirer_Target	0.020	0.019	-0.005	-0.003
	(0.426)	(0.453)	(0.623)	(0.843)
Controls	Yes	Yes	Yes	Yes
Adjusted R-squared	0.090	0.0845	0.0265	0.0265
N	1,249	1,210	6,744	6,442
Panel B: Target is a local firm				
	Public Targets		All Targets	
	[1]	[2]	[3]	[4]
Distance_Top3_Investors	-0.111[a]		-0.037[a]	
	(0.002)		(0.008)	
Distance_Top5_Investors		-0.120[b]		-0.042[b]
		(0.011)		(0.039)
Distance_to_Firm	-0.075[c]	-0.093[b]	-0.003	-0.005
	(0.063)	(0.023)	(0.850)	(0.749)
Target_Locality	-0.000	0.000	0.002	0.002
	(0.979)	(0.904)	(0.225)	(0.282)
Controls	Yes	Yes	Yes	Yes
Adjusted R-squared	0.0895	0.0841	0.0267	0.0267
N	1,249	1,210	6,744	6,442
Panel C: Concentration of local firms				
	Public Targets		All targets	
	[1]	[2]	[3]	[4]
Distance_Top3_Investors	-0.087[a]		-0.018[c]	
	(0.005)		(0.061)	
Distance_Top5_Investors		-0.088[b]		-0.008
		(0.034)		(0.539)
Distance_to_Firm	-0.084[b]	-0.103[a]	-0.006	-0.008
	(0.020)	(0.006)	(0.584)	(0.503)
Concentration_Local_Firms	0.009	0.022	0.009	0.009
	(0.829)	(0.607)	(0.555)	(0.577)
Controls	Yes	Yes	Yes	Yes
Adjusted R-squared	0.0712	0.0680	0.0227	0.0224
N	1,543	1,493	14,241	13,563

Panel D: Geographic distance to the nearest air route

	Public Targets		All targets	
	[1]	[2]	[3]	[4]
Distance_Top3_Investors	-0.088[a]		-0.017[c]	
	(0.004)		(0.085)	
Distance_Top5_Investors		-0.093[b]		-0.005
		(0.026)		(0.728)
Distance_to_Firm	-0.087[b]	-0.108[a]	-0.006	-0.008
	(0.017)	(0.004)	(0.591)	(0.483)
Distance_to_Air_Route	0.743	0.735	0.025	0.002
	(0.127)	(0.133)	(0.877)	(0.988)
Controls	Yes	Yes	Yes	Yes
Adjusted R-squared	0.0767	0.0729	0.0222	0.0218
N	1,508	1,459	13,980	13,307

Panel F: Common investor base in acquirer and target firms

	Value of holdings		Fraction of holdings	
	[1]	[2]	[3]	[4]
Distance_Top3_Investors	-0.113[a]		-0.115[a]	
	(0.009)		(0.008)	
Distance_Top5_Investors		-0.119[b]		-0.121[b]
		(0.040)		(0.037)
Distance_to_Firm	-0.134[b]	-0.155[a]	-0.134[b]	-0.155[a]
	(0.012)	(0.004)	(0.012)	(0.004)
Common_Investors_Val	0.006[c]	0.006[c]		
	(0.057)	(0.059)		
Common_Investors_Frac			0.237[c]	0.222[c]
			(0.077)	(0.100)
Controls	Yes	Yes	Yes	Yes
Adjusted R-squared	0.1341	0.1295	0.1329	0.1285
N	822	798	822	798

Table 8
Robustness analysis of M&A intensity using the alternative measure of investor coordination
This table reports robustness tests with the alternative measure of investor coordination that takes into account individual incentives for the coordination intensity. The formal definition of this variable is given in Appendix B. Models [1]-[2] use *M&A_Incidence* as dependent variable, whereas models [3]-[4] and [5]-[6] use *Relatvie_Deal_Value* and *Number_of_Deals*, respectively. All regressions use the same control variables as in the baseline model presented in Table 2. The complete set of estimates can be found in the Internet Appendix. Superscripts *a*, *b*, and *c* indicate significance at the 1, 5, and 10% levels, respectively. All variables are winsorized at the 1st and 99th percentiles. Variable definitions are reported in Appendix A. The constant is not reported.

Panel A: Baseline regressions

	Probit		Tobit		Negative binomial	
Variable	[1]	[2]	[3]	[4]	[5]	[6]
WDistance_Top3_Investors	-0.386^a		-0.094^a		-0.787^a	
	(0.003)		(0.004)		(0.000)	
WDistance_Top5_Investors		-0.453^b		-0.117^a		-0.797^a
		(0.012)		(0.010)		(0.005)
Distance_to_Firm	0.020	0.031	-0.026	-0.022	-0.332	-0.328
	(0.659)	(0.884)	(0.615)	(0.670)	(0.387)	(0.400)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.0973	0.0972	0.1021	0.1020		
N	38,108	38,108	38,109	38,109	38,109	38,109

Panel B: Concentration of local firms

	Probit		Tobit		Negative binomial	
Variable	[1]	[2]	[3]	[4]	[5]	[6]
WDistance_Top3_Investors	-0.384^a		-0.095^a		-0.778^a	
	(0.004)		(0.004)		(0.000)	
WDistance_Top5_Investors		-0.442^b		-0.115^b		-0.773^a
		(0.014)		(0.012)		(0.006)
Distance_to_Firm	0.015	0.025	-0.033	-0.029	-0.347	-0.345
	(0.944)	(0.907)	(0.525)	(0.572)	(0.373)	(0.382)
Concentration_Local_Firms	0.027	0.027	-0.057	-0.057	-0.009	-0.015
	(0.922)	(0.923)	(0.405)	(0.405)	(0.984)	(0.974)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.0970	0.0969	0.1018	0.1017		
N	38,053	38,053	38,054	38,054	38,054	38,054

Panel B: Distance to the nearest air route

	Probit		Tobit		Negative binomial	
Variable	[1]	[2]	[3]	[4]	[5]	[6]
WDistance_Top3_Investors	-0.378^a		-0.095^a		-0.739^a	
	(0.004)		(0.004)		(0.000)	
WDistance_Top5_Investors		-0.449^b		-0.119^a		-0.773^a
		(0.013)		(0.010)		(0.007)
Distance_to_Firm	0.009	0.021	-0.029	-0.025	-0.340	-0.334
	(0.966)	(0.923)	(0.578)	(0.632)	(0.388)	(0.403)
Distance_to_Air_Route	0.167	0.190	-0.104	-0.099	-4.844	-4.823
	(0.947)	(0.940)	(0.872)	(0.879)	(0.289)	(0.293)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2	0.0966	0.0966	0.1019	0.1019		
N	37,589	37,589	37,590	37,590	37,590	37,590

Table 9
Robustness analysis of CAR using the alternative measure of investor coordination
This table reports robustness tests with the alternative measure of investor coordination that takes into account individual incentives for the intensity of coordination. The formal definition of this variable is given in Appendix B. The dependent variable is the acquirer CAR. Regressions are estimated by ordinary least-squares (OLS) model with year fixed effects. All regressions use the same control variables as in the baseline model presented in Table 3. Due to data limitations, Panel F uses only public targets. The complete set of estimates can be found in the Internet Appendix. Superscripts *a*, *b*, and *c* indicate significance at the 1, 5, and 10% levels, respectively. All variables are winsorized at the 1st and 99th percentiles. Variable definitions are reported in Appendix A. The constant is not reported.

Panel A: Baseline regressions				
	Public Targets		All Targets	
	[1]	[2]	[3]	[4]
WDistance_Top3_Investors	-0.082^{c}		-0.011	
	(0.008)		(0.330)	
WDistance_Top5_Investors		-0.074^{b}		-0.003
		(0.049)		(0.820)
Distance_to_Firm	-0.093^{b}	-0.096^{b}	-0.008	-0.009
	(0.014)	(0.012)	(0.548)	(0.504)
Controls	Yes	Yes	Yes	Yes
Adjusted R-squared	0.0747	0.0720	0.0180	0.0179
N	1,526	1,526	14,248	14,248
Panel B: Geographic distance between the acquirer and the target				
	Public Targets		All Targets	
	[1]	[2]	[3]	[4]
WDistance_Top3_Investors	-0.114^{a}		-0.044^{a}	
	(0.002)		(0.007)	
WDistance_Top5_Investors		-0.110^{a}		-0.041^{b}
		(0.009)		(0.026)
Distance_to_Firm	-0.081^{c}	-0.081^{c}	-0.007	-0.007
	(0.053)	(0.054)	(0.700)	(0.715)
Distance_Acquirer_Target	0.019	0.019	-0.006	-0.006
	(0.467)	(0.463)	(0.557)	(0.554)
Controls	Yes	Yes	Yes	Yes
Adjusted R-squared	0.0945	0.0903	0.0264	0.0258
N	1,233	1,233	6,660	6,660
Panel C: Target is a local firm				
	Public Targets		All Targets	
	[1]	[2]	[3]	[4]
WDistance_Top3_Investors	-0.115^{a}		-0.045^{a}	
	(0.001)		(0.007)	
WDistance_Top5_Investors		-0.111^{a}		-0.041^{b}
		(0.008)		(0.026)
Distance_to_Firm	-0.082^{c}	-0.081^{c}	-0.010	-0.009
	(0.055)	(0.058)	(0.621)	(0.638)
Target_Locality	0.000	-0.000	0.001	0.001
	(0.964)	(0.959)	(0.518)	(0.539)
Controls	Yes	Yes	Yes	Yes
Adjusted R-squared	0.0941	0.0899	0.0264	0.0258
N	1,233	1,233	6,660	6,660

Panel D: Concentration of local firms

	Public Targets		All targets	
	[1]	[2]	[3]	[4]
WDistance_Top3_Investors	-0.084[a]		-0.012	
	(0.007)		(0.312)	
WDistance_Top5_Investors		-0.072[c]		-0.003
		(0.056)		(0.805)
Distance_to_Firm	-0.095[b]	-0.098[b]	-0.007	-0.009
	(0.015)	(0.013)	(0.573)	(0.526)
Concentration_Local_Firms	0.005	0.007	0.009	0.009
	(0.911)	(0.881)	(0.610)	(0.607)
Controls	Yes	Yes	Yes	Yes
Adjusted R-squared	0.0728	0.0697	0.0181	0.0181
N	1,521	1,521	14,182	14,182

Panel E: Geographic distance to the nearest air route

	Public Targets		All targets	
	[1]	[2]	[3]	[4]
WDistance_Top3_Investors	-0.084[a]		-0.011	
	(0.007)		(0.366)	
WDistance_Top5_Investors		-0.072[c]		-0.001
		(0.057)		(0.950)
Distance_to_Firm	-0.099[b]	-0.104[a]	-0.007	-0.009
	(0.011)	(0.008)	(0.584)	(0.524)
Distance_to_Air_Route	0.687	0.664	0.054	0.052
	(0.204)	(0.221)	(0.763)	(0.770)
Controls	Yes	Yes	Yes	Yes
Adjusted R-squared	0.0784	0.0753	0.0181	0.0181
N	1,486	1,486	13,919	13,919

Panel F: Common investor base in acquirer and target firms

	Value of holdings		Fraction of holdings	
	[1]	[2]	[3]	[4]
WDistance_Top3_Investors	-0.124[a]		-0.126[a]	
	(0.005)		(0.004)	
WDistance_Top5_Investors		-0.126[b]		-0.128[b]
		(0.024)		(0.023)
Distance_to_Firm	-0.152[a]	-0.153[a]	-0.152[a]	-0.153[a]
	(0.008)	(0.007)	(0.008)	(0.007)
Common_Investors_Val	0.008[b]	0.007[b]		
	(0.019)	(0.025)		
Common_Investors_Frac			0.281[c]	0.263[c]
			(0.075)	(0.099)
Controls	Yes	Yes	Yes	Yes
Adjusted R-squared	0.1362	0.1318	0.1376	0.1330
N	799	799	799	799