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Trade-offs in Staying Close: Corporate Decision Making and Geographic Dispersion

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We investigate whether the geographic dispersion of a firm affects corporate decision making. Our findings suggest that social factors work alongside informational considerations to make geography important to corporate decisions. We show that (i) geographically dispersed firms are less employee friendly; (ii) dismissals of divisional employees are less common in divisions located closer to corporate headquarters; and (iii) firms appear to adopt a "pecking order" and divest out-of-state entities before those in-state. To explain these findings, we consider both information and social factors. We find that firms are more likely to protect proximate employees in soft information industries (i.e., when information is difficult to transfer over long distances). However, employee protection holds only when the headquarters is located in a less populated county, suggesting a role for social factors. Additionally, stock markets respond favorably to divestitures of in-state divisions. (*JEL* G34, J63, R30)

The locations of corporations have important consequences, from affecting the design of cities and local employment, to the trends of urbanization and inter-region trade. Consequently, one of the fundamental issues in economics relates to the location of production. Since, at least Marshall (1890), economists have noted that while some industries tend to cluster around a geographic region, others remain separate. This has led to the uncovering of several factors governing the choice of the corporate locations.[1]

However, a related aspect of economic geography—the geographic dispersion of a firm—has received little attention. Does a firm that is concentrated and localized in one region act differently from a firm

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[1] For excellent reviews see Fujita and Venables (1999); Fujita and Thisse (2002), and Duranton and Puga (2005).

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that is widely dispersed? Does the geographic dispersion of firms or more specifically, the distance between divisions and headquarters, affect corporate decision making? In this article, we document three distinct findings that suggest this is indeed the case.[2]

First, we find geographically dispersed firms are less employee friendly on the basis of an employee relations index.[3] Second, using division-level data, divisions that are closer to headquarters are less likely to face layoffs. Third, we find a pecking order in divestitures of divisions: divisions further from headquarters are divested before closer divisions. We find that the bias towards protecting proximate employees holds only if the headquarters is located in a less populated county. Additionally, it takes significantly poorer financial performance for firms to resort to divesting a proximate division, suggesting a managerial resistance to this type of restructuring.

While these results suggest a robust pattern of favoritism towards employees of proximate divisions, they say little about the underlying mechanisms at work. There are at least two reasons why geographic dispersion and corporate decision making might be related. First, information quality may be compromised when the decision maker is further from the business for which the decision is relevant. For example, a CEO located in Rochester, New York, may have less information to make a capital investment decision for a division located in Baton Rouge, Louisiana. Distance is often used as a proxy for information asymmetry (e.g., Coval and Moskowitz, 1999; Garmaise and Moskowitz, 2004; and Grinblatt and Keloharju, 2001) since it affects the means of information acquisition—impersonal means are more prevalent over longer distances—and consequently the nature of information acquired (see, e.g., Petersen and Rajan, 2002). Hence, dispersion may be related to information flows inside organizations.[4] Managers might react differently to economic shocks, depending on whether divisions are close or distant, because their information sets are different.

The second reason is that more frequent social interactions with proximate employees lead to a potential disconnect between managerial incentives and shareholder interests. Managers are more concerned about

[2] Our aim is not to explain the choice of locating production in one region versus another, as in the literature on firm clustering (e.g., Krugman, 1991), but to study the real effects of an organization being located across several rather than in one.

[3] Employee friendliness includes firm actions that determine the level of employee retirement benefits, employee healthcare benefits, profit-sharing programs, union relations, and employee involvement (discussed in more detail in Section 1).

[4] Further support for this view is found in a recent case where Quiksilver Inc., the leading outdoor sports lifestyle company, acquired Rossignol, a French company. Subsequently, it announced a consolidation of the French firm's various departments into a single 15-acre campus in the French Alps, citing better internal communication as an important reason.

employees with whom they interact more frequently.[5] Additionally, managers of geographically concentrated firms are more visible and more likely to weigh the implications of business decisions on their social standing: firing or cutting the pay of neighbors can be a source of embarrassment, especially in smaller communities. Managers internalize how their decisions affect local employees and local community welfare. As a result, social considerations can lead to a conflict with shareholder wealth maximization.[6]

To investigate the link between distance and information flows, we classify industries by the nature of information: hard versus soft.[7] Our measure of the prevalence of hard information is defined as the change in distance between banks and borrowing firms over time by industry. Petersen and Rajan (2002) document that this distance has increased over time primarily due to innovations in information technology and credit-scoring techniques that now favor the use of hard information. Banks far away from a borrowing firm rely more on impersonal means of information collection and, in turn, hard information. Conversely, industries where the distance between banks and firms has not increased are categorized as soft information environments (more precisely, environments where information cannot be cheaply hardened).

An interesting question to then ask is: Do differences in information explain the link between dismissals and proximity? Since information quality about far and close divisions is no different when information is quantifiable, there should be no link between dismissals and proximity in hard information environments. However, the opposite is true with soft information. During tough times, managers may have no choice but to dismiss distant employees because of limited information; in contrast, richer information that comes from monitoring employees located at headquarters or on the corporate campus may lead to less severe approaches. Consistent with this explanation, we find a stronger

[5] Glaeser, Sacerdote, and Scheinkman (1996) and Glaeser (2004) recognize a relation between proximity and social interactions in studies of individual decisions such as residence in cities and aggregate outcomes such as crime.

[6] Several anecdotes suggest that senior executives are more reluctant to layoff local workers. One such instance is the relatively recent and widely publicized case of Boeing. Boeing moved its plant from Seattle to Chicago in May 2001 and the move triggered a negative reaction from unions: ''It really makes it easier for them to make those difficult public statements, like when you move wing production to Japan or move workers from Renton to Everett. Those decisions are easier to make when you're sitting in an office in Chicago.''

[7] Petersen (2004) describes soft information as information that cannot be easily codified into quantitative variables. The interpretation of soft information is context-specific and requires the background knowledge of the information collector implying that soft information is more costly to communicate to distant agents. This is because soft information (i) does not lend itself to being coded and (ii) requires the message sender to be credible. By contrast, hard information is cheaper to communicate to distant agents as it is quantifiable, can be interpreted independently of the information collector, and cannot be easily distorted. Liberti (2005) shows in the context of bank lending, loans that are approved at the branch level rely significantly more on soft information compared to loans approved at the headquarters level.

dismissal-proximity relation in soft information environments. While this finding suggests information flows matter, it is also consistent with the notion that personal interactions are important since they are more intense when information is soft.

Although closer proximity to gather information goes hand in hand with more frequent social interactions, we shed some light on the relative importance of social interactions *per se* by investigating whether the dismissal-proximity link is stronger when the manager is more visible in the community. We find that employee protection holds only when the firm headquarters is located in a less populated county. This suggests that social factors also play a role in corporate decision making and informational arguments do not completely explain our findings. Taken together, the evidence suggests that informational constraints of geographically dispersed firms and social interactions, whether they increase managerial concern for employees or status in the community, are both important determinants of the link between geographic dispersion and corporate decision making.

We then investigate one last implication. If proximity to employees leads to misalignment of managerial incentives with shareholder objectives, such proximity should be detrimental to shareholder value. To check this, we investigate whether the stock market response to divestitures varies by proximity of the business unit to headquarters.[8] We show a positive market reaction to in-state divestitures, which is significantly higher than out-of-state divestitures and which is higher when the company does such a divestiture for the first time (in the data). This suggests that the willingness to divest within a state is a positive signal about a manager's objective (shareholder friendliness). Moreover, the effect is stronger when the divesting headquarters is located in a less populated county. This finding is consistent with Lerner, Schoar, and Wong (2005) who find, in the context of private equity, that limited partners who get higher returns invest less in proximate funds.

Our findings contribute to at least four different areas of research. First, these findings shed light on the use of different restructuring mechanisms available to a firm. Cost savings through employee layoffs are more likely in dispersed firms while other mechanisms are more likely in concentrated firms. Additionally, we also highlight the role of geographic dispersion and the use of divestitures to restructure.

Second, the article contributes to the growing literature on corporate governance.[9] The findings highlight a limitation of external governance

[8] We realize that a naïve cross-section regression is unlikely to provide an answer to that question, since geographic dispersion is an endogenous decision that takes into account, as an example, information flows. However, stock market responses to divestitures allow us to explore the efficiency cost of managerial concern for employees.

[9] Shleifer and Vishny (1997) and Becht, Bolton, and Roell (2002) survey this literature.

mechanisms and document the importance of a fundamental firm characteristic in how firms treat their employees. Additionally, the vast literature on corporate governance that aligns managerial interests to that of shareholders has ignored the role of employees (see Pagano and Volpin (2005) for an exception). This article takes the view that the three parties interact and the manager plays a crucial role in determining the sharing rule between shareholders and employees.

Third, our results are a step towards a better understanding of managerial ''private benefits,'' a notion that has been widely employed in corporate finance theory. While the notion is broad, the importance and the source of nonpecuniary private benefits have not yet been highlighted. This article provides a channel—social interaction—that gives rise to such nonpecuniary private benefits that can engender agency costs between shareholders and managers. Further, the article highlights that such considerations can have important effects on firm decisions.

Fourth and finally, the findings contribute to the discussion in urban economics where corporate presence is often considered an engine for local growth and employment. This is also evident from competition between states to attract corporate headquarters.[10] The findings suggest that the relation between corporate presence and local economic outcomes depends on the distance of divisions to headquarters.[11]

We now proceed to discuss the data used in the article (Section 1). Section 2 documents the relation between geographic dispersion and three separate corporate decisions. Section 3 focuses on performance implications through divestitures. Section 4 investigates the importance of information and social factors. Section 5 is the conclusion.

1. Data

In addition to financial information from Compustat, we use three additional sources of data: information on firm-level treatment of employees from the SOCRATES database provided by KLD Analytics, division-level data from Hewitt Associates, and divestiture data from Security Data Corporation (SDC). We describe the first two datasets below.

1.1 Firm-level employee treatment

SOCRATES is a proprietary database program that provides access to KLD's ratings and other data pertaining to the social records of a subset

[10] In the context of the aforementioned Boeing case, four states were competing to attract Boeing to their respective states.

[11] This can justify the high level of concern expressed by local politicians or national governments when a distant firm takes over a local company.

of publicly traded companies in the United States between 1991 and 2003. The subset of companies is large—ranging from approximately 500 in 1991 to over 3000 by 2003. The increase is mainly due to the inclusion of companies outside the S&P 500, specifically the Russell Indices.

To assign social ratings for this subset of US companies, KLD research relies on four distinct categories of data sources. Data are collected from a wide variety of company filings, government data, nongovernment organizations, and general media sources.[12] Sector-specific analysts then use this information to assign strengths and concerns. Companies are rated in seven major qualitative areas: environment, community, corporate governance, diversity, employee relations, human rights, and product quality and safety.

The database thus consists of screens that are used to assign strengths and concerns with respect to different activities that have an immediate social impact. Each screen assigns a 0/1 score for a particular social indicator and is part of an overall evaluation of corporate social performance. Of interest to us are screens related to employee treatment. To proxy for a firm's treatment of employees, we compile what we refer to as the E-index based on the strengths in KLD (also, see Fisman, Nair, and Heal, 2005). This index uses five employee-based corporate social responsibility (CSR) screens that the database tracks through the period. Although KLD does not provide the specific (proprietary) framework used to generate these screens, a description of the screens used for the study is provided below.[13]

1. Strong union relations: The company has a history of notably strong union relations.
2. Cash profit sharing: The company has a cash profit-sharing program through which it has recently made distributions to a majority of its workforce.
3. Employee involvement: The company strongly encourages worker involvement and/or ownership through stock options available to a majority of its employees, gain sharing, stock ownership, sharing of financial information, or participation in management decision making.
4. Strong retirement benefits: The company has a notably strong retirement benefits program.
5. Family benefits: The company has outstanding employee benefits or other programs addressing work/family concerns, (e.g., childcare, elder care, or flextime).

[12] See http:/kld.com for more details.

[13] KLD uses this database to monitor a firm's social responsibility, and this forms the basis of the Domini 400 Social Index—the first and largest socially screened index in the world. The fund manages over $1.8 billion in socially responsible investment vehicles, such as the Domini Social Equity Fund, the Domini Social Bond Fund, and the Domini Money Market Account. This suggests that the collected data are meaningful.

Thus, our E-index is based on five CSR screens that track a firm's actions towards employees throughout the period.[14] Summing over these indicator variables by firm-year, our E-index ranges between 0 and 5: a higher value represents better employee treatment. We use the E-index as a firm-level measure of employee treatment.

At least two concerns with this index merit discussion. First, KLD attempts to gather information about a firm's attitude toward its entire workforce and not simply its top management or a specific set of employees. This is indicated clearly in some screens (e.g., profit sharing and employee involvement) by their emphasis on a "majority" of the workforce. In other cases the attention is on firm-wide policies (such as retirement and family benefits). Second, while we interpret our index as a measure of employee treatment, it is likely that it is related to the "importance" of employees or skill level more broadly. A firm in a sector in which human capital is more important than physical capital (or assets) might indeed have a higher E-index. However, if average skill levels are comparable across firms in the same sector, variation in the index might capture employee treatment beyond that due to skill differences. In any case, our interpretation of results based on the index needs to be mindful of these caveats.

1.2 Data on firm divisions

Information at the division level is gathered from Hewitt Associates, a leading human resources consulting firm specializing in executive compensation and benefits. The dataset includes a panel of more than 250 publicly traded US firms over the years 1986–1999, spanning a number of industries. The data are collected from a confidential compensation survey conducted by Hewitt Associates. The survey is the largest private compensation survey (as measured by the number of participating firms) and the survey participants are typically leaders in their sectors. More than 75% of the firms in the dataset are listed as Fortune 500 firms in at least one year and more than 85% are listed as Fortune 1000 firms. These firms represent a significant fraction of the activity of publicly traded firms in the US. On the basis of all firms covered in Standard and Poor's Compustat database over the period of study, the survey participants represent approximately 33% of employees, 30% of sales, 20% of assets, and 40% of market value. If we limit the analysis to manufacturing firms, the Hewitt firms represent 42% of employees, 38% of sales, 39% of assets, and 52% of market value.

In general, Hewitt survey participants also participate in other compensation consulting firm surveys (e.g., Hay Associates, Mercer, Towers Perrin, to name a few) and do so primarily to receive information

[14] The database also has other screens that, however, only exist for part of the sample period. We used screens that were available for the entire sample period of 1992 to 2004.

about pay practices to use as a competitive benchmark in evaluating their own compensation programs. It is important to note that the sample includes many more firms than Hewitt's compensation consulting clients. On the basis of several analyses described in Appendix A, we conclude that the survey sample is probably most representative of Fortune 500 firms.

An observation in the dataset is divisional information within a firm in a year. In the survey, a division is defined as "the lowest level of profit center responsibility for a business unit that engineers, manufactures, and sells its own products." To ensure consistency in matching these positions across firms, the survey provides benchmark position descriptions and collects additional data for each position leading to a dataset rich in position characteristics. As a result, in addition to data on all aspects of compensation for multiple divisional manager positions, the dataset includes division-specific characteristics such as: job title, the title of the position to whom the position reports (i.e., the position's boss), division sales, number of employees under the position's jurisdiction, industry of operation, and geographic state of location, among others.

We believe the survey data are accurate for several reasons. First, Hewitt personnel are knowledgeable about survey participants because they are assigned to specific participants for several years. Furthermore, while the participating firms initially match their positions to the benchmark positions in the survey, Hewitt personnel follow up to verify accuracy and spend an additional 8–10 hours on each questionnaire evaluating the consistency of responses with public data (e.g., proxy statements) and across years. Finally, participants have an incentive to match positions correctly and provide accurate data because they use the survey results to set pay levels and design management compensation programs.

In Table 1 (Panel A), we present descriptive statistics for the firms and divisions in the sample. While the dataset includes more than 250 firms, the exact number varies over the period, as firms enter and exit as survey participants. The firms in the sample are large, well-established, and profitable with an average size of approximately 45,900 employees, sales of $8.2 billion, industry-adjusted return on assets (ROA) of 2.5%, and sales growth of 6%. The average number of divisions reported in the survey for the sample firms is approximately five. Next, turning to divisional statistics, the mean size of divisions is $688 million in sales and approximately 3000 employees.[15] Finally, the sample firms span many industrial sectors of the economy, with some concentration in the food, paper, chemical, machinery, electrical, transportation equipment, instrumentation, communications, and utilities industries.

[15] Although, the total number of division-year observations is around 11,000, our divisional regressions use a much lower number. This is because our tests rely on divisional changes in sales and employment and thus can only use those division-years for which the preceding year's information is available.

Table 1
Descriptive statistics

Panel A: Firm and division statistics

Variable	Obs.	Mean	Std. Dev.
Firm			
Sales ($ millions)	2416	8162.43	14, 710.43
Employees (000s)	2402	45.90	78.02
Assets ($ millions)	2417	9334.32	20, 769.46
Return on assets (%) (industry-adjusted)	2396	2.53	10.15
Average number of divisions per firm	2482	4.85	4.34
Proportion of divisions in same state as headquarters	2399	0.48	0.39
Division			
Sales ($ millions)	11, 048	688.23	1422.96
Employees (000s)	10, 953	2.96	9.78

Panel B: Dispersed versus concentrated firms (means)

Geographic dispersion	Firm sales ($m)	Firm empl. (000s)	ROA (%)	Age (Yrs.)	No. of divisions	No. of segments	Division sales ($m) (med)	Division empl. (000s)	Obs.
Dispersed firms	6992	43.67	2.19	92.8	5.60	2.97	250.6	2.93	1056
Concentrated firms	8260	43.84	2.91	98.8	4.39	2.96	360.0	3.62	1343

The table provides descriptive statistics of the sample used for divisional level tests. The sample is obtained from Hewitt Associates and is representative of the Fortune 500 firms (see Appendix A). Industry-adjusted ROA is defined as ROA less the median ROA for the Fama-French industry. Dispersed firms are defined as firms below the sample median for the proportion of divisions in the same state as headquarters, while concentrated firms are firms above the median.

1.3 Firm geography

Using the information on division state of location from the Hewitt dataset and headquarters' state and county of location from Compustat, we attempt to characterize divisional proximity to headquarters. Our data on division location are limited: we only observe the state in which the division is located. To address this limitation, we create three measures of divisional proximity. The first is a dummy variable *same_state* that takes the value 1 if the division is in the same state as the headquarters and 0 otherwise. One drawback of this measure is that headquarters and a division might be located close to state boundaries leading to an incorrect classification of proximity. For example, a firm located in Philadelphia, Pennsylvania, and a division in Camden, New Jersey, are geographically close. Yet, the *same_state* measure would incorrectly classify the division as far. To address this, we define another dummy variable *same_or_adj* that takes the value 1 if the division is in the same or an adjacent state to headquarters and 0 otherwise. Since Pennsylvania and New Jersey are adjacent states (i.e., they share a border), the division located in New Jersey would be correctly classified as proximate to headquarters based on this second measure of proximity.

Clearly, neither of these classifications distinguishes between divisions that are located in the same region as the headquarters (i.e., the Northeast)

from divisions that are located across the country. To capture this configuration, we define another measure of proximity. We calculate the spherical distance as the number of miles between the longitude and latitude of the county of headquarters and that of the most densely populated county in the division's state. We take the logarithm of this measure (*ldistance*). This measure better captures proximity (or distance) between firms and divisions that are located on opposite sides of the country. However, it is a noisy measure for other configurations.[16]

Importantly, all three measures are highly correlated. The correlation between *same_state* and *same_or_adj* = 0.87; *same_state* and *ldistance* = −0.80; and *same_or_adj* and *ldistance* = −0.82. We recognize that each proximity measure has its drawbacks. Instead of relying on one measure, our approach is to evaluate the robustness of our results to each.

In addition to measures of divisional proximity, we construct a firm-level measure of distance by computing the fraction of divisions in the same state as headquarters (*psame_state*). In Table 1 (Panel B), we compare the employment, sales, and performance of geographically concentrated and geographically dispersed firms. As can be seen from this table, firms in these two categories are largely similar in terms of firm employees, sales, and performance. Concentrated firms have bigger and fewer divisions than dispersed firms and both types of firms have a similar number of business segments.

2. Geographic Dispersion and Corporate Decision Making

We now investigate whether geographic dispersion of firms is related to three separate corporate actions: employee friendliness, layoffs of divisional employees, and divestitures.

2.1 Employee friendliness

Using the E-index as a measure of how friendly firms are to their employees, we investigate whether geographic dispersion and employee friendliness are related. As described earlier, the geographic concentration of a firm is captured by the fraction of divisions that are in the same state as that of the headquarters.

In Column I of Table 2, we regress the E-index on geographic concentration and control for the logarithm of firm employees and sales, industry-adjusted ROA, and the firm's fraction of divisions operating in

[16] For example, the number of miles between a firm headquartered in New York and a division located in California is large. However, let us consider a division located in Rochester, New York, with headquarters located in Stamford, Connecticut. In this case, the distance measure understates the true distance because it would calculate the number of miles between New York City and Stamford (which is small) instead of Rochester and Stamford (which is large). In this particular example, the least biased measure is the same or adjacent state indicator.

Table 2
Employee treatment and geographic dispersion

	I	II	III	IV
Fraction of divisions in state of headquarters	0.396***	0.432***	0.435***	0.360***
	(0.125)	(0.118)	(0.130)	(0.120)
Industry R&D-intensity		1.236		
		(1.037)		
Firm R&D-intensity			4.932***	
			(1.283)	
Log firm employees	−0.112	−0.077	−0.156	−0.125
	(0.073)	(0.066)	(0.108)	(0.118)
Log firm sales	0.349***	0.319***	0.449***	0.294**
	(0.085)	(0.076)	(0.100)	(0.125)
Industry-adjusted ROA	0.002	0.005	−0.002	0.001
	(0.005)	(0.005)	(0.004)	(0.004)
Diversification	0.039	−0.049	0.133	−0.005
	(0.137)	(0.129)	(0.151)	(0.152)
Vulnerability to takeovers (24-GIM Index)				0.031
				(0.024)
Ownership of blockholders				−0.027***
				(0.009)
Year controls	Yes	Yes	Yes	Yes
Industry controls	Yes	No	No	Yes
Observations	949	941	724	529
R-squared	0.29	0.20	0.29	0.33

The table investigates the relation between an index of employee friendliness (E-index), which includes union relations, healthcare benefits, retirement benefits, employee involvement, and cash profit-sharing programs (see text for detailed description) and a firm's geographic concentration. The regressions use firm-year observations. Geographic concentration is measured as the fraction of divisions in the same state as that of the headquarters. Industry R&D-intensity is defined as the average of the ratio of R&D expenditures to sales for the firms in the 2-digit SIC industry. We control for log firm employees, log firm sales, industry-adjusted ROA (defined as ROA less the median ROA for the Fama-French industry of the firm), firm diversification measured by the fraction of divisions in the same 3-digit SIC industry as that of the firm, and governance standards (vulnerability to takeovers (24-GIM Index) and ownership of blockholders, see text for a description). All models include year controls; models I and III include 2-digit SIC industry controls; robust standard errors in parentheses clustered at the firm level. * Significant at 10%; ** Significant at 5%; *** Significant at 1%.

the same industry as the firm. We include both year- and industry-fixed effects (2-digit SIC code) and report standard errors clustered at the firm level. Our E-index might be correlated with the importance of human capital in the industry; for example, firms in the medical device industry might treat their employees better than firms in paper manufacturing. To address this concern, we include industry-fixed effects to control for differences in average skill level by industry. In Column I, we find that geographically concentrated firms are friendlier to their employees than their industry peers.[17]

[17] Since the employee friendliness index is a count measure, we also estimate negative binomial regressions and find that the results are qualitatively similar.

In Column II of Table 2, we replace the industry controls with a measure of the importance of human capital in the industry (i.e., the average R&D-intensity defined as the ratio of R&D expenditures to sales). In Column III, we include firm R&D-intensity. We find that the positive coefficient on geographic concentration is robust to the inclusion of either industry or firm measures of human capital. Importantly, the magnitude of the coefficient is very stable to the inclusion of these various controls.

One interesting question is whether shareholder control is correlated with employee friendliness. We might expect firms with governance structures that protect shareholder interests to be less friendly to employees. We include two commonly used corporate governance variables. The first measure, denoted by *EXT*, captures the external vulnerability of firms to takeovers and is a simple transformation ($EXT = 24 - \mathrm{G}$) of the index compiled by Gompers, Ishii, and Metrick (2003). The second measure proxies for the presence of a large external blockholder where a blockholder is defined to be a shareholder with greater than 5% of firm ownership. *BLOCKC* is a dummy variable equal to one if a large external blockholder is present. In Column IV of Table 2, we still find a positive link between geographic concentration and employee treatment. More interestingly, the coefficient on the blockholder variable is negative. That is, firms with stronger governance are less friendly to employees. This finding is suggestive of the tension between shareholder and employee objectives, an issue we return to in Section 3.

2.2 Divisional proximity and layoffs

In this section, we investigate whether dismissals or layoffs of divisional employees are associated with the division's geographic proximity to headquarters. We analyze the likelihood of layoffs using divisional data from Hewitt.[18] Since we do not observe layoffs, we infer them from changes in the number of employees within a division between years. Employees can voluntarily leave firms, and since the change in numbers of employees reflects only the change net of hiring and firing, layoffs are more likely when there is a significant drop in the number of employees.

Table 3 reports results of division-level logit estimations where the dependent variable is a dummy variable that takes the value one if layoffs are observed within a division (i.e., a decline of 50 or more employees) and zero otherwise.[19] The independent variable of greatest interest is whether the division is located in the same state as headquarters (*same_state*).[20]

[18] We believe that there is a fixed cost of firing, which is consistent with the logit specification and the analysis of the probability of a layoff greater than a certain threshold. However, we also analyze the severity of layoffs in Appendix B.

[19] The results are robust to using other layoff thresholds such as 75, 150, and 300 (2.5, 5, and 10% of average division size, respectively).

[20] Subsequently, we will evaluate other measures of proximity.

We also include other divisional characteristics such as the logarithm of the number of division employees and divisional sales growth. To address concerns that our results are driven by unobserved firm heterogeneity, we control for several firm characteristics: the logarithm of firm sales, the logarithm of the number of employees, and the firm's industry-adjusted ROA. We also include a measure of the change in industry employment for the entire Compustat sample (matching the industry to the division's 2-digit SIC industry). All specifications include year controls and controls for the division's state of location. Finally, we report standard errors that are clustered at the division level.[21]

Turning to Table 3 Column I, we find that large divisions, poorly performing divisions, divisions in industries experiencing declines in employment, and divisions in larger firms are more likely to witness layoffs. Of greatest interest, we find a negative and significant coefficient on the *same_state* indicator, which suggests that divisions located in the same state as headquarters are less likely to face layoffs. Proximity to headquarters is associated with a 3.5% lower probability of facing layoffs controlling for division and firm characteristics.

One possible explanation for this result is that high-skill workers are both closer to headquarters and less likely to face layoffs, simply because of the type of assignment they have. Using data from the US Current Population Survey, for each 3-digit SIC code by year, we calculate the proportion of workers that are 25 years or older with greater than a high school education. We match industry-year education levels to divisional 3-digit SIC codes for each division (*dabovehs*). In Column II of Table 3, we include this measure of education to evaluate if the link between proximity and layoffs is due to differences in education or skill levels of workers that are in the same state as headquarters. We do find that in-state divisions are more likely to have more educated employees (the correlation between *same_state* and *dabovehs* is 0.04). Importantly, the link between proximity and layoffs is robust to the inclusion of this education/skill proxy.

What if important divisions are closer to headquarters and witness fewer layoffs? Divisions with the same industry classification as that of the firm are likely to be central to the firm's business. In Column III of Table 3, we include a variable that captures whether the division operates in the same industry as that of the firm. And, even though important divisions are closer to headquarters (the correlation between *same_state* and *same_sic3* is 0.05), the link between layoffs and proximity is independent of the relation.

[21] Clustering standard errors at the division level recognizes that observations for a division across years are not independent. Another approach is to cluster standard errors at the firm level. Since the statistical significance of coefficients are similar for both approaches, we choose to report standard errors clustered at the division level.

Table 3
Divisional layoffs and proximity

	I	II	III	IV	V	VI	VII	VIII	IX
Division and firm in same state	−0.182**	−0.204**	−0.172**	−0.169**	−0.198**				
	(0.078)	(0.096)	(0.079)	(0.079)	(0.079)				
Log division employees	0.343***	0.329***	0.346***	0.344***	0.343***	0.346***	0.346***	0.357***	0.356***
	(0.033)	(0.039)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.034)	(0.034)
Division sales growth	−1.077***	−1.325***	−1.077***	−1.076***	−1.456***	−1.080***	−1.482***	−1.188***	−0.312
	(0.199)	(0.219)	(0.199)	(0.199)	(0.272)	(0.199)	(0.304)	(0.227)	(0.321)
Log firm employees	0.215***	0.168**	0.219***	0.225***	0.200***	0.212***	0.201***	0.241***	0.235***
	(0.068)	(0.084)	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)	(0.071)	(0.070)
Log firm sales	−0.058	0.038	−0.064	−0.067	−0.048	−0.058	−0.050	−0.098	−0.093
	(0.067)	(0.087)	(0.067)	(0.067)	(0.067)	(0.067)	(0.067)	(0.071)	(0.071)
Industry-adjusted ROA	−0.008	−0.017***	−0.008	−0.008	−0.009	−0.008	−0.009	−0.009	−0.010
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)
Industry growth in employment	−2.649***	−2.089*	−2.630***	−2.525***	−2.648***	−2.660***	−2.631***	−2.372***	−2.410***
	(0.814)	(1.148)	(0.817)	(0.817)	(0.817)	(0.812)	(0.812)	(0.881)	(0.884)
Industry proportion of workers>high school education		0.551							
		(0.335)							
Division in same industry as firm			−0.113						
			(0.077)						
Diversification				−0.186*					
				(0.102)					
Same state × div. Sales growth					0.691*				
					(0.369)				
Division and firm in same or adj. state						−0.195**	−0.211***		
						(0.078)	(0.078)		

Table 3
(Continued)

	I	II	III	IV	V	VI	VII	VIII	IX
Same or adj. state × div. sales growth							0.646*		
							(0.385)		
Log distance between firm county and division state								0.062**	0.060*
								(0.031)	(0.031)
Log distance × div. sales growth									−0.181***
									(0.062)
Year controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Division state controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5975	3992	5975	5975	5975	5975	5975	5133	5133

This table investigates the link between the likelihood of a layoff and divisional proximity to headquarters. The dependent variable is layoff and is defined as a dummy variable equal to one if there is a significant decrease in employment at the division level (>50 employees or 1.7% of average division size). We measure divisional proximity using three measures: whether the division is in the same state as headquarters, whether the division is in the same or an adjacent state to headquarters, and the logarithm of the number of miles between the headquarters county and the most-populated county in the division's state. We also control for logarithm of division employees, division sales growth, logarithm of firm employees, logarithm of firm sales, industry-adjusted ROA (defined as ROA less the median ROA for the Fama-French industry of the firm), and aggregated change in employment in the division's industry. Column II includes a control related to the proportion of workers with greater than high school education for the division's 3-digit SIC industry. Columns III and IV include controls related to divisional importance—whether the division is in same 3-digit SIC industry as the firm—and a level of diversification that measures the fraction of divisions in the same 3-digit SIC industry as that of the firm. All specifications are logit models and include year and division state fixed effects; robust standard errors in parentheses clustered at the division level.* Significant at 10%; ** Significant at 5%; *** Significant at 1%.

Another possible explanation is that it is easier to redeploy employees closer to the headquarters during downturns. Since redeployment opportunities are likely to be higher in diversified firms than in focused firms, one might expect to observe lower layoffs in diversified firms. However, we find no such effect. In Table 3 Column IV we show that the layoff-proximity link is robust to controlling for firm-level diversification as proxied by the proportion of divisions in the same 3-digit SIC code as that of the firm (*psame_sic3*).

Next, we ask whether headquarters treats proximate divisions differently, particularly during tough economic times. We characterize tough times using two different measures: divisional performance and aggregate labor growth in the division's industry. We introduce an interaction term between *same_state* and divisional sales growth.[22] The positive coefficient suggests that the favorable treatment of closer divisions is stronger when the division is performing poorly (Table 3, Column V). In other words, layoffs are less sensitive to performance for in-state divisions. When we use labor growth of the division's industry as a performance measure, we find no such result (unreported).

Since we observe only the division's state of location, we consider two additional measures of distance between headquarters and divisions. In the remaining columns in Table 3, we repeat select regressions using these additional measures (described in detail earlier in Section 1): whether the firm and division are located in the same or adjacent states, and the logarithm of the number of miles between the headquarters county and the most densely populated county in the division's state. The results are qualitatively similar using these alternative measures. We find a lower probability of layoffs when a division is located in either the same or an adjacent state to headquarters, and layoffs in proximate divisions are less sensitive to performance (Table 3 Columns VI and VII). Also, we find a higher probability of layoffs when the division's state is further from headquarters' county, and layoffs in far divisions are more sensitive to performance (Columns VIII and IX).

In sum, we find that divisions that are closer to headquarters are less likely to experience layoffs. Also, layoffs in closer divisions are less sensitive to divisional performance. These results hold for three measures of proximity and are not simply explained by differences in proximate divisions due to skill levels, the importance of the division to the firm, or the ease in redeployment of divisional employees.

[22] We find similar results controlling for a measure of relative performance (divisional sales growth minus the firm-level weighted average of divisional sales growth), which alleviates concerns that our results might be driven by remote plants being the less productive. We actually find no significant correlation between same state and relative sales growth.

2.3 Divestitures

We now analyze the decision to divest a division to check if our findings linking proximity and corporate decision making hold true in yet another context. Firms do not only react to poor performance by laying off employees but also by divesting divisions (e.g., Ofek, 1993 or Shleifer and Vishny, 1992). If headquarters are reluctant to let closeby employees go (e.g., because managers know that employees of divested entities will get less favorable treatment postdivestiture), divestitures of divisions within the headquarters' state should occur after other types of restructuring options have been exhausted. In particular, divestitures of divisions outside headquarters' state should occur *prior* to divestitures of nearby plants. Using SDC platinum, we collect divestiture deals completed between 1990 and 2004. SDC allows us to identify the divesting entity through its Cusip (''target ultimate parent's cusip'').[23] After merging with Compustat, we have a total of 12,783 divestitures, corresponding to 4190 different parent companies. Forty-one percent of these divested entities are in the state of their initial parent's headquarters.

We first document the existence of a pecking order in divestiture preferences by looking at statistical properties of the firm-level time series of divestitures. Analyzing companies for which multiple divestitures are observed, we look at whether in-state divestitures tend to occur after out-of-state divestitures. First, within the history of each firm, we compare the characteristics of divestitures (in-state versus out-of-state) to those that occurred previously. Our goal is to show that in-state divestitures tend to occur after out-of-state possibilities have been exhausted. While 49% of the in-state divestitures happen after an out-of-state divestiture has occurred, only 25% of the out-of-state divestitures occur after an in-state divestiture. As the aggregate numbers of in-state and out-of-state divestitures are roughly similar, this sharp asymmetry in the time series is suggestive of a pecking order whereby firms react to the need to restructure by divesting remote entities first, and only as a last resort, closer-by entities.

We can perform a more rigorous test of the fact that in-state divestitures tend to be clustered after out-of-state divestitures in the typical time series of divestitures. For that purpose, we put a bit of formal structure on the problem. Consider a large multiplant company i. We now formalize a simple model of divestitures under a ''no pecking order'' assumption, so that we can reject one of its main predictions. The absence of a pecking order means that divesting costs are independent of geographic location. When the company needs to divest, it chooses a plant independently of its location: The probability that the divested plant is in-state should simply be equal to the fraction $p_i(t)$ of plants that are in-state at time t.

[23] The divestitures in SDC broadly represent divestitures of business entities including divisions, subsidiaries, and plants.

Therefore, if $\gamma_i(t)$ is the Poisson probability of a divestiture occurring at time t (γ can vary, e.g., with the financial stress of the company), the probabilities of in versus out-of-state divestitures are respectively $p_i(t)\gamma(t)$ and $(1 - p_i(t))\gamma(t)$.

We assume that geographic dispersion of companies is stable (which is also a consequence of the absence of a pecking order in the firm policy), so that $p_i(t) = p_i$.[24] In our data, we observe the time series of divestitures between 1990 and 2004. Under the "no pecking order" model of divestitures we just sketched, the mean date of an out-of-state divestiture should be equal to the mean date of an in-state divestiture:

$$T_{\text{in-state}} = \frac{\int_0^T p_i\gamma_i(t)tdt}{\int_0^T p_i\gamma_i(t)dt} = \frac{\int_0^T \gamma_i(t)tdt}{\int_0^T \gamma_i(t)dt}$$
$$= \frac{\int_0^T (1-p_i)\gamma_i(t)tdt}{\int_0^T (1-p_i)\gamma_i(t)dt} = T_{\text{out-of-state}} \quad (1)$$

This is the null we want to reject. The advantage of this simple model is that it requires no assumption of homogeneity across companies. To reject the null hypothesis of "no pecking order," we compute for each company that exhibits both types of divestitures the mean date of in-state divestitures and the mean date of out-of-state divestitures and compute the difference, $T_{\text{in-state}} - T_{\text{out-of-state}}$. Under the null, $T_{\text{in-state}} - T_{\text{out-of-state}}$ should not be significantly different from zero. However, we find that the mean in-state date is larger than the mean out-of-state date by an amount of 88 days (with standard error 11). We can therefore reject the "no pecking order" model of divestitures. Companies tend to use in-state divestitures after out-of-state possibilities start to be exhausted.

A second type of test of the reluctance to divest closer entities is to check whether it takes more economic pressure for firms to resort to divesting in-state. Indeed, if the adjustment costs that managers face when divesting tend to be higher for in-state plants, one should observe a larger fraction of in-state divestitures during periods when the pressure to restructure is greater.[25] We construct measures of the pressure to restructure based on the company's industry-adjusted performance and determine whether these measures predict the probability of an in-state versus out-of-state divestiture. Conditional on a divestiture occurring, we estimate a logit specification, with standard errors clustered at the firm level, of the likelihood of an in-state divestiture. We control for adjusted return, size (log

[24] We find that the proportion of divisions in the same state as headquarters, on average for the Hewitt sample, is relatively stable over time.

[25] The intuition is that if firms have both low-firing and high-firing cost workers, the latter are in higher proportions in the flow of fired workers during periods of worse economic conditions.

Table 4
Geography and the reluctance to divest

	I	II
	In-state = 1	In-state = 1
Market-to-book (industry-adjusted)	−0.071**	
	(0.029)	
Negative shock to industry-adjusted M/B		0.120**
		(0.049)
Logarithm of assets	−0.185***	−0.188***
	(0.013)	(0.013)
Capx/assets	2.25***	1.62***
	(0.57)	(0.55)
Year controls	Yes	Yes
Industry controls	Yes	Yes
Observations	10,034	11,169

This table shows that companies tend to do in-state divestitures under stronger economic constraints. In-state is a dummy equal to 1 if the divested entity lies in the headquarters' state. This table's regressions are conditional on a divestiture: For our sample of divestitures, we estimate a logit regression of in-state divestiture. Market-to-Book of the divesting firms is computed the year preceding the deal and adjusted for its industry median (48 Fama-French sectors). The negative relative M/B shock dummy is equal to one if the divesting firm experiences a drop in its industry-adjusted market-to-book greater than 30% between year −2 and −1, where 0 is the divestiture's year. Firms experiencing such negative shock to their relative performance are likely to be under strong pressure to restructure. Robust standard errors in parentheses are clustered at the firm level.* Significant at 10%; ** Significant at 5%; *** Significant at 1%.

assets), investment, industry (we use the 48 Fama-French categories) and year effects. All of these variables are constructed from annual Compustat data in the year prior to the deal's announcement.

The logit regression shows that an industry's worse performers (low adjusted market-to-book) are those that tend to divest in-state entities, compatible with the view that firms tend to use these divestitures as a last resort (Table 4). We use a second measure of restructuring pressure based on negative shocks to relative performance: we construct a dummy variable equal to 1 if the firm's industry-adjusted market-to-book experiences a drop larger than 30% during the two years preceding the deal (i.e., year −2 to year −1 where 0 is the deal's year). This selects firms that experience a sudden drop in performance compared to their peers and are therefore likely to be under strong pressure to divest. Twenty-eight percent of our divestitures correspond to firms experiencing such a large negative shock to their relative market-to-book value. Our logit regressions show that such firms are relatively more likely to divest in-state entities. Overall, the evidence suggests that firms facing pressure to restructure are more prone to divest in-state, an indication that the manager's private costs of divesting decreases with distance.

3. Stock Market Reactions: Learning About the Firm's Objective?

If proximity to employees leads to managerial concern for employees and misalignment of managerial incentives with shareholder objectives,

Table 5
Stock market announcement effect of divestitures and geography

Return-market on announcement day (in %)

	I	II	III
In-state	0.72***	0.00	0.26
	(0.27)	(0.36)	(0.37)
First-in-state		1.18**	1.18**
		(0.47)	(0.47)
First-out-of-state			0.58**
			(0.28)
Constant	0.94***	0.94***	0.67***
	(0.13)	(0.13)	(0.16)
Observations	2649	2649	2649
R-squared	0.01	0.01	0.01

This table shows a positive market effect of same-state divestitures relative to out-of-state divestitures. We regress the divesting company's stock-return on the day of a divestiture announcement minus the day's weighted average market return. The sample includes SDC transactions characterized as "divestitures" between 1990 and 2004, with a deal value superior to $20M. In-state is a dummy variable equal to one if the divested entity lies in the state of the divesting company's headquarters. First-in-state (first-out-of-state) is equal to one if in our sample the divestiture is the first-in-state (respectively first-out-of-state) divestiture by the divesting company. Robust standard errors in parentheses are Huber/White/sandwich standard errors.* Significant at 10%; ** Significant at 5%; *** Significant at 1%.

such proximity should be detrimental to shareholder value. Since we have already shown that proximity plays a role in divestitures, we can now analyze stock market reactions to such events in order to investigate if there are any performance implications. If one takes the view that geographical distance prevents financially optimal restructuring by management, in-state divestitures might be good news for shareholders for two reasons: the value that the company gets for the entity might be bigger than the entity's value within the company; and, the in-state divestiture is a positive signal about the level of shareholder friendliness of management.

We restrict analysis to relatively large divestitures (value larger than $20 million) and use CRSP data to get the daily returns of the parent company on the announcement day of the divestiture. We benchmark these daily returns by the weighted average portfolio return given by CRSP. In Table 5 Column I, we regress announcement effects on the in-state dummy. As Rosenfeld (1984) and Klein (1986), we find that out-of-state divestitures have a positive and significant price impact at the announcement date (represented by the constant in the regression of 0.94). This effect is almost twice as big for in-state divestitures (1.66 = 0.94 + 0.72 from the constant and the coefficient estimate of 0.72 on in-state).

As an attempt to check whether the market reaction to in-state deals is indeed due to an update of market beliefs on the management's objective function, we look at whether the reaction is stronger for deals that correspond to a "first-time" in-state divestiture (Table 5). For those deals, the market should update more than in the case of "second-time" in-state deals. In the data, 670 out of 1083 in-state deals are first-time in-state

divestitures. We construct a first-in-state dummy variable to identify these deals and find that the positive price reaction is exclusively coming from these first-time deals. Similarly, a first-out-of-state dummy variable captures an information effect about the firm's willingness to restructure, but its magnitude is half that of the first-in-state dummy variable. In other words, observing a first-time restructuring is always good news about the firm's objective function (its willingness to restructure), but an in-state restructuring is a stronger signal about the manager's shareholder friendliness.

We perform several robustness checks to make sure the in-state variable is not behaving as a proxy of deal characteristics unrelated to our distance effects, such as the size of the deal, the size of the divesting company, or whether the divested entity is in the core business of the parent company. Our results are unchanged in magnitude and significance when we control for whether the divested entity operates in the same 2-digit SIC code as the firm, as well as for the deal's value and the size of the firm. Moreover, since in-state deals tend to be done by poorer-performing firms, we control for accounting performance (industry-adjusted ROA in the year preceding the deal), and again our results are unaffected. Interestingly, the in-state positive effect is stronger for good performers, which suggests the relevance of our information interpretation: the market learns less about the management's objective function (e.g., the private benefits from being loved by employees) if the divestiture is decided under strong economic pressure (such that the manager has little choice).

To investigate whether this announcement effect is reversed over the long-run, as well as to investigate the long-run performance implications, we compute the divesting firm's cumulative abnormal returns (CAR) using the asset pricing model proposed by Fama and French (1992). We calibrate for each firm a market model using return information preceding the divestiture announcement and compute CAR on the basis of the observed residuals of the fitted model in months following the deal. The pricing model is estimated at the firm level using the 48 monthly returns preceding the divestiture. In Table 6, we report, separately for in-state and out-of-state divestitures, the CAR starting one month before the deal, up to three months after the deal. We report the difference in cumulative returns between the two groups of divestitures in Column III and test for the equality using a standard t-test in Column IV.

We observe significant positive CAR for the in-state divesting group compared to the out-of-state divesting group. This evidence suggests a relative initial under-reaction of the market to the information conveyed by an in-state divestiture. This corporate decision is a positive signal about a firm's objective function, and more so than shareholders initially realize. We interpret these results as suggestive evidence that owing to higher managerial concern for the workers, proximity can be detrimental

Table 6
Cumulative abnormal returns following divestitures and geography

Cumulative abnormal returns

	I	II	III	IV
Month	In-state divestitures	Out-of-state divestitures	Difference	*t*
−1	0.41	−0.01	0.42	0.51
0	1.90	0.43	1.50	1.48
1	3.44	−0.41	3.90***	2.78
2	2.92	−0.53	3.45**	2.11
3	2.01	−0.94	3.00*	1.71

Abnormal returns are computed after estimating for each divesting firm a Fama-French three-factor model on the 48 months preceding the divestiture's announcement. Cumulative abnormal returns, starting 1 month before the deal, are then computed for each firm. Column I reports the average CAR of firms divesting entities in the same state as headquarters. Column II does the same for firms divesting entities outside of the state of headquarters. Column III reports the difference and Column IV reports the result of a *t*-test on that difference.* Significant at 10%; ** Significant at 5%; *** Significant at 1%.

to shareholder value, particularly in times when "painful" adjustments are needed.[26]

4. Proximity and Factors Affecting Decision Making

4.1 Managerial ability to collect information

Geographic dispersion of a firm is potentially important to internal information flow. Especially when information cannot be transferred through technological means and when information is not easily verifiable, distance is likely to inhibit the flow of information. Such information is often termed soft information (see, e.g., Petersen, 2004). Such considerations, if important, would suggest that firms operating in soft information environments may make different decisions. To test this implication, we have to first characterize firms as operating in soft or hard information environments. Although a precise classification along these lines is difficult since it is not easy to characterize all such types of soft information, we create an economically motivated classification of industries based on bank lending behavior in different industries.

Our starting point is the finding of Petersen and Rajan (2002) that the distance between banks and their borrowers has been increasing, and the means of information collection are getting more impersonal with time. To document this, Petersen and Rajan use data from the National Survey

[26] It is important to note that there could be benefits in the form of better employee morale or better information due to proximity even though there might be a loss of objectivity (see, e.g., Boot, Macey, and Schmeits, 2005). In equilibrium then, it might be the case there are no performance differences between firms with different geographic distributions in cross-sectional regressions of valuation or performance on geographic dispersion. We thus use this strategy to investigate performance effects and highlight that such costs might exist during tough economic times.

of Small Business Finance (1987 and 1993). This is a stratified random sample of small firms that was collected by the Board of Governors of the Federal Reserve System and the Small Business Administration. In addition to financial information about the firm (balance sheet and income statement information), the data contain a thorough documentation of the firm's relationship with financial institutions. To be included in the sample, the firm must be a for-profit firm with fewer than 500 employees. Consequently the firms in this sample are small. In 1992, the mean sales revenue of the sample is \$3.6M (median \$400,000), while the mean book value of assets is \$1.7M (median \$153,000).

We append 1987 survey data with the more recent 1998 survey to investigate how the distance between firms and banks has changed in different industries. For each survey year (1987 and 1998) and at the 2-digit level, we compute the mean distance of firms to their primary lending institution (deltadist).[27] In hard information industries, we would expect lenders to take advantage of technological developments and deregulation. This would then lead to a greater distance between the bank lending office and the borrowing firm. Indeed, we find that the distance between banks and borrowing firms has increased over time—more dramatically in some industries than in others.[28]

Using this industry-level proxy of information, we evaluate whether the layoff-proximity link varies by the degree of hard information in the division's industry. Since informational flows might be affected by proximity, we ask whether the difference in information type explains the link between layoffs and proximity. After all, it might be that during tough times, managers have no choice but to dismiss far away employees because of limited information; however, with closer employees, better information might lead to the discovery of other potential solutions and less severe outcomes. Such a mechanism would produce a stronger link between proximity and layoffs in soft information environments.

Let us now turn to evaluate the role of information in decisions to lay off divisional employees. First, we introduce an interaction term between each measure of proximity (*same_state* and *log distance*) and the degree of hard information in the division's industry (ddeltadist) to our logit models of layoffs. In Table 7, Columns I and II present these results. We

[27] We use the sample weights provided with the data and the variables r6481 and idist1 for 1987 and 1998, respectively. These variables measure the distance in miles from the main office of the firm to the office or branch of the bank's main lending institution.

[28] Consistent with Petersen and Rajan (2002) and Berger et al. (2005), we find that an increase in the distance to the bank also reduces the amount of personal interaction between the borrower and the bank. This confirms that indeed far away banks rely more on impersonal means to collect information, lending more support to the informational interpretation of our proxy deltadist. However, a caveat is that changes in bank distance might not be driven solely by informational factors. In this case, our variable might capture other industry characteristics as well and can be conservatively viewed as a valid control in our tests independent of the informational interpretation.

find a positive coefficient on the interaction term with *same_state*, which suggests that the layoff-proximity link is stronger for divisions operating in soft information environments. We find similar results using the distance measure, that is, a negative coefficient on the interaction term between distance and hard information.

While these results highlight the importance of information flows in decision making, they do not necessarily rule out the importance of social factors. This is because the information gathering process is likely to make personal interactions between managers and employees more intense in firms or industries where information is soft. To the extent that such personal interactions increase managerial concern for employees, managers would be less likely to dismiss proximate workers. In the next section, we attempt to disentangle these two effects.[29]

4.2 Managerial concern for employees

To evaluate the importance of social factors and managerial concern for employees vis-à-vis shareholders, we investigate whether the effect of proximity on layoff policy is stronger when the manager is more visible in the community. Although closer proximity to gather information goes hand in hand with greater interactions and the social view, it is possible to shed light on the relative importance of social factors by investigating if the proximity-layoff link varies by size of community. If the finding is indeed solely due to informational flows, one should not expect to find different results.

To capture the notion of visibility in the community, we use the population of the county in which the headquarters is located. Population figures are those reported by the US Census Bureau in the years 1990 and 2000 (interleaving years are extrapolated using the annual growth rate between these years). Since managers are more likely to be visible in smaller towns, we estimate the earlier models for two subsamples: headquarters population above versus below the sample median (800,000).[30] As can be seen in Table 7, Columns III and IV, the layoff-proximity link (using *same_state* and *log of distance*, respectively) and variation with information exists only when the headquarters is located in a less populated county. There is no such relation in Columns V and VI for firms located in more populated counties. This evidence is consistent with

[29] Exploring the loan approval process of bank loans, Liberti and Mian (2006) show that the transmission of subjective information requires physical proximity, which suggests the importance of human interactions along the hierarchical line for the processing of such information.

[30] Since county population may misrepresent population density, we also use the number of people per square mile in the headquarters county in 1990 as another measure of town size (sample median is 1855 per square mile). The results presented in Table 7 are qualitatively similar when we partition the sample by population density of the headquarters county instead of simply county population.

Table 7
Divisional layoffs and proximity: information and social interaction

	Full sample		Low population sample		High population sample	
	I	II	III	IV	V	VI
Division and firm in same state	−0.198**		−0.260**		−0.208	
	(0.080)		(0.124)		(0.132)	
Same state × hard information	0.111**		0.254***		−0.042	
	(0.049)		(0.069)		(0.072)	
Log distance between firm county and division state		0.073**		0.091*		0.062
		(0.032)		(0.048)		(0.056)
Distance × hard information		−0.033*		−0.062**		0.008
		(0.017)		(0.025)		(0.028)
Division industry measure of hard information	−0.048	0.179*	−0.158***	0.281**	0.035	−0.027
	(0.036)	(0.092)	(0.049)	(0.124)	(0.056)	(0.150)
Log division employees	0.339***	0.356***	0.393***	0.384***	0.277***	0.301***
	(0.034)	(0.035)	(0.048)	(0.050)	(0.047)	(0.049)
Division sales growth	−1.099***	−1.228***	−0.901***	−1.090***	−1.252***	−1.361***
	(0.208)	(0.239)	(0.247)	(0.279)	(0.333)	(0.391)
Industry growth in employment	−2.316***	−1.919**	−2.562*	−2.239	−2.048*	−2.243*
	(0.855)	(0.939)	(1.394)	(1.497)	(1.174)	(1.241)
Log firm employees	0.203***	0.227***	0.360***	0.455***	0.107	0.103
	(0.069)	(0.071)	(0.123)	(0.136)	(0.085)	(0.089)
Log firm sales	−0.032	−0.074	−0.156	−0.270**	0.041	0.043
	(0.069)	(0.072)	(0.109)	(0.118)	(0.089)	(0.096)
Industry-adjusted ROA	−0.008	−0.009	−0.005	−0.003	−0.026***	−0.035***
	(0.006)	(0.007)	(0.007)	(0.006)	(0.009)	(0.010)
Year controls	Yes	Yes	Yes	Yes	Yes	Yes
Division state controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5810	4998	2872	2587	2705	2389

This table investigates how the degree of hard information in the division's industry (ddeltadist; see text for details) and the population of the county of headquarters (below versus above sample median) affect the link between divisional layoffs and proximity. The dependent variable is layoff and is defined as a dummy variable equal to one if there is a significant decrease in employment at the division level (>50 employees or 1.7% of average division size). We measure divisional proximity using two measures: whether the division is in the same state as headquarters and the logarithm of the number of miles between the headquarters county and the most-populated county in the division's state. We also control for logarithm of division employees, division sales growth, logarithm of firm employees, logarithm of firm sales, industry-adjusted ROA defined as ROA less the median ROA for the Fama-French industry of the firm, and aggregated change in employment in the division's industry. All specifications are logit models that include year and division state fixed effects; robust standard errors in parentheses are clustered at the division level.* Significant at 10%; ** Significant at 5%; *** Significant at 1%.

the explanation that social factors play a role in employee layoffs. In small towns, the result is stronger for soft-information divisions. This suggests that both informational and social factors are important in corporate decision making. Employees in a division operating in a soft information environment and in a firm headquartered in a small town, face a 5% lower probability of a layoff if they are in the same state as headquarters.

One potential concern with this conclusion might be that the classification into small versus large towns represents high versus low cost of soft information instead of representing the size of the local community. After all, it might be difficult to travel from smaller towns, say, for example, because of smaller airports, and hence traveling to a remote division is costlier for small town firms. If true, we should still find results in the more populated county sample. Additionally, Rajan and Wulf (2006) document that firms organize private transport to make up for deficiencies in or inconveniences due the existing transport system (e.g., proximity to large airports).

Overall, the findings suggest that both information and managerial concerns are altered by proximity, which is then borne out in corporate decisions.

5. Conclusions

In this article, we investigate the importance of a firm's geographic dispersion. Proximity of divisions to headquarters can affect not only the information available to headquarters to make decisions but also managerial concern for employees. We document evidence that the internal flow of information and the managerial alignment with shareholders is associated with the extent of a firm's geographic dispersion. This sheds light on three documented findings.

First, using a firm-level index of employee friendliness, we find geographically dispersed firms to be less employee friendly. Second, using division-level data, we find that divisions located closer to corporate headquarters are less likely to experience layoffs. Finally, we investigate the link between divestitures and firm geography. We find that firms are reluctant to divest in-state divisions and demonstrate a pecking order by which firms divest remote divisions before closer divisions.

We then attempt to distinguish between information versus social factors. We find that the layoff-proximity link is weaker when information is conducive to being transferred over long distances (hard information). Yet, the protection of proximate employees is absent when the headquarters is located in a more populated county. While information issues do play an important role, favorable employee treatment is also related to the higher private cost to managers of firing "neighbor employees" either due to higher visibility in the community or concern

for employees. The evidence suggests that managerial information and objectives can change with proximity. Finally, stock markets respond more favorably to in-state than to out-of-state divestitures, which suggests that in-state divestitures convey positive information about the shareholder friendliness of a manager.

This article highlights the importance of firm geography on firm decisions. The aspect of geography we focus on has hitherto been unexplored. In showing that this aspect can have important consequences, we hope to promote further research into economic geography and corporate productivity. Several interesting questions remain unanswered. While several explanations for a firm's location choice exist, there is little consideration of the optimal dispersion of a firm. Since geographic dispersion of a firm's divisions is after all endogenously determined, our results should be interpreted as a first step in contributing to an extremely limited empirical literature on the relation between information, geographic dispersion, and corporate decision making. Another issue that appears promising is whether the geographic limitations of a country, for example, the availability of business-worthy towns, affect how fervently businesses adopt the shareholder paradigm.

Appendix A: Sample Representativeness

We evaluate the representativeness of the sample by comparing key financial measures of the survey participants to a matched sample from Compustat. We begin by matching each firm in the Hewitt dataset to the Compustat firm that is closest in sales within its 2-digit SIC industry in the year the firm joins the sample. We then perform Wilcoxon signed rank tests to compare the Hewitt firms with the matched firms. While the firms in the Hewitt dataset are, on average, slightly larger in sales than the matched sample, we found no statistically significant difference in employment and profitability (return on sales).[31] We also found no statistically significant difference in sales growth, employment growth, or annual changes in profitability for all sample years. In sum, while the Hewitt firms are larger (measured by sales) on average than the matched sample, there is little additional evidence that these firms are not representative of the population of industrial firms that are leaders in their sectors.

We also calculate financial measures for the sample of Compustat firms with 10,000 employees or greater over the period from 1986 to 1999 (excluding firms operating in financial services). We find that, on average, survey participants are more profitable, but growing at a slower rate relative to the sample of large Compustat firms. Specifically, the sample average return on sales for survey participants is 17.8% versus 15.7% for the sample of large Compustat firms and the average sales growth is 5.7% versus 7.4%. This is consistent with the observation that the firms in the sample are likely to be industry leaders (hence slightly more profitable) and also large (hence the slightly slower growth). To sum, the survey sample is probably most representative of Fortune 500 firms.

[31] The Hewitt firms are larger in sales than the matched sample of firms because in a number of the cases, the Hewitt firm is the largest firm in the industry, thus forcing us to select a matched firm smaller in size.

Appendix B: Severity of Layoffs

One concern with our earlier results is that they are based on the likelihood of layoffs. Yet, it may be that during layoffs, divisions close to headquarters lose more employees than distant divisions. In this case, proximity would not be beneficial to employees.

To evaluate the severity or extent of layoffs, we define our dependent variable as the decrease in the number of divisional employees. We then investigate the relation between the number of layoffs in a division and geographic proximity to headquarters conditional on a layoff occurring. In Column I of the Appendix B Table 1 below, we limit the analysis to those divisions that lose 50 or more employees in a given year. We include the same-state indicator, controls from earlier regressions, and both year and firm fixed effects. We find a negative and significant coefficient on the same-state indicator suggesting that during layoffs, in-state divisions dismiss fewer employees. In Column II, in using the distance measure of proximity, we find the expected positive sign on the distance coefficient, but it is not statistically significant.

Since the above specifications include firm fixed effects, the results also address an econometric concern with our earlier logit estimations. In Table 3, our coefficients were not statistically significant when including firm fixed effects in the logit models. While the firm fixed effects models address earlier concerns about unobserved firm heterogeneity in our logit models, they are less easy to interpret as they are sensitive to the functional form of firing costs. Moreover, these concerns are further mitigated by findings in Table 7, which show that the logit results exist exactly where the expected mechanisms of information and social factors are likely to be stronger.

Appendix B. Table 1
Severity of divisional layoffs and divisional proximity: Firm fixed effects

	I	II
Division and firm in same state	−337.3**	
	(160.7)	
Log distance between firm County and division state		71.1
		(59.4)
Log division employees	139.9	164.2
	(87.1)	(106.3)
Division sales growth	−1328.3***	−1573.3***
	(326.1)	(389.7)
Log firm employees	657.1	395.4
	(939.1)	(1126.3)
Log firm sales	−231.8	−61.6
	(847.4)	(996.3)
Industry-adjusted ROA	9.2***	7.7**
	(3.1)	(3.9)
Year controls	Yes	Yes
Firm controls	Yes	Yes
Observations	1758	1481
R-squared	0.42	0.42

In this table, we regress the decrease in the number of divisional employees conditional on the division experiencing a layoff (defined as a decline of more than 50 divisional employees) on divisional proximity. The distribution of employment changes is winsorized at the 1% threshold. We measure divisional proximity using two measures: whether the division is in the same state as the headquarters and the logarithm of the number of miles between the headquarters county and the most-populated county in the division's state. We also control for logarithm of division employees, division sales growth, logarithm of firm employees, logarithm of firm sales, industry-adjusted ROA defined as ROA less the median ROA for the Fama-French industry of the firm, and aggregated change in employment in the division's industry. All specifications include year and firm fixed effects; robust standard errors are clustered at the division level.* Significant at 10%; ** Significant at 5%; *** Significant at 1%.

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