

Local Director Talent and Board Governance*

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Abstract

This paper examines the effects of director labor markets at firm headquarter locations on board governance. We argue that firms can implement better board governance by drawing on local director talent when a larger pool of prospective directors (officers and directors of same-industry firms, financial institutions, and universities) is located near the firm. We find that firms located near large pools of prospective directors have a higher percentage of outside directors and directors with executive expertise on the board. Firms located closer to financial institutions and universities attract a higher percentage of directors with financial and academic expertise, respectively. The dependence of board governance on local director labor markets is greatest for less established firms (small size, short history, low product market share, no institutional blockholder). With the adoption of Sarbanes Oxley and exchange governance requirements, firms appear to have expanded the search for outside directors beyond local director labor markets. Based on our empirical evidence, we formulate an instrument for board composition and use it in a two-stage setting to reexamine the relation between governance and firm value with correction for endogeneity.

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The role and effectiveness of boards as a mechanism of corporate governance has been an important issue in existing corporate finance literature. A recent strand of papers has explored the implications of geography and location for corporate and investor decisions (e.g., Coval and Moskowitz, 1999, 2001; Malloy, 2005; Landier, Nair and Wulf, 2007). However, an important yet overlooked question is the effect of location specific labor markets for prospective directors on board structure and governance quality of the firm.

In this paper we examine the effects of director labor markets at the firm's location on board governance. All else given, firms may find it easier to attract local director talent due to lower costs while potentially benefitting from their local expertise. We argue that firms can implement better board governance when a larger pool of prospective directors (officers and directors of same-industry firms, financial institutions, and academics) is located near the firm. We find that firms located next to large local pools of prospective directors have a higher percentage of outsiders and independent directors with executive expertise on the board. Firms located closer to financial institutions or universities attract a higher percentage of independent directors with financial and academic expertise, respectively. Board governance quality is most dependent on the size of local director labor markets among less established firms (small size, short history, low product market share, no institutional blockholder). With the adoption of the Sarbanes Oxley Act and exchange governance requirements, firms appear to have expanded outside board member hiring beyond local director labor markets. Based on our results, we are also able to formulate an instrument for board composition that is used in a two-stage setting to reexamine the relation between governance and firm value with correction for endogeneity.

We conjecture that there is a local component to outside director labor markets. Prospective directors can lower their costs (opportunity cost of time would be high for executives of other firms and financial institutions) by serving as outside directors on the boards of nearby firms. More importantly, service on a board of a local firm builds the prospective director's reputation with local executives. Finally, both from the firm's and outside director's perspective, proximity can decrease the cost of soft information and enable the use of local knowledge for advising and overseeing top management. Therefore, local director labor markets would have an effect on a firm's choice of board structure.

We formulate several testable predictions.

First, firms located near larger pools of prospective directors are expected to have a higher percentage of outside directors on the board, all else given. Our tests include controls for firm characteristics intended to capture the demand of the firm for independent directors as a function of costs and benefits of implementing intensive board monitoring.

Second, greater distance from potential sources of qualified outside directors (same-industry firms, financial institutions, and universities) is expected to lower the proportion of expert directors on the firm's board.

Third, to the extent that outside directors from faraway firms have less access to local information and do not benefit as much from local reputation building, they should receive higher equity stakes as an incentive to fulfill their board functions effectively.

Further, we consider firm and industry characteristics that strengthen the influence of local director markets on a firm's board governance structure. As prospective directors are expected to be more willing to join the boards of faraway firms if they are well established, we predict that less established firms rely more on local director talent.

Next, we examine the effect of the Sarbanes Oxley Act and stock exchange governance rules aimed at increasing board independence. The effect could be twofold. On the one hand, as the proportion of outside directors on boards had to be increased for compliance purposes, more firms could be taking advantage of the local pool of prospective directors. On the other hand, an exogenous increase in the demand for outside directors could lead more firms to switch from local director labor markets to a nationwide search. Whether the relation between local director labor markets and firm board composition changed after the governance reforms is an empirical question.

Finally, if the size of the local director labor market has a significant effect on board characteristics, we can use it as a source of exogenous variation in board governance quality and reevaluate the relation between board monitoring and firm value. We test empirically whether the positive relation continues to hold after correction for endogeneity.

Our main findings are as follows. Firms located near larger pools of prospective directors have a higher proportion of outsider board members. The effect is driven by small firms, firms with shorter histories, and firms without an institutional blockholder. Presence of larger local director labor market has a positive effect on the proportion of directors with executive expertise and a negative effect on the average independent director ownership stake. The proportion of financial (academic) experts is decreasing in distance to large financial firms (universities). The 2002 change in governance rules weakened the dependence of firms on local director talent in their search for independent directors. When we instrument board independence with the size of the local pool of prospective directors, we find that board independence continues to have a positive effect on firm value.

This paper relates to an extensive literature on the determinants of board structure and its effects on firm value (see, e.g., Rosenstein and Wyatt, 1990; Yermack, 1996; Yermack, 2004; Guner, Malmendier, and Tate, 2006; Fich, 2005; Linck, Netter, and Yang, 2008; Boone et al., 2007; Brickley, Coles, and Terry, 1994). Differently from these papers, we focus on the role of the local director labor market as a determinant of the firm's board structure. We use the obtained results to re-examine the relation between board governance and firm value.

This paper is also related to the work on the effects of location on corporate decisions and preferences of investors and analysts (Almazan, Titman, and Uysal, 2008; Kedia, Panchapagesan, and Uysal, 2004; John, Knyazeva, and Knyazeva, 2008; Gao, Ng, and Wang, 2006; Becker, Ivkovic, and Weisbenner, 2007; Coval and Moskowitz, 2001; Coval and Moskowitz, 1999; Ivkovic and Weisbenner, 2005; Malloy, 2005; Bae, Stulz, and Tan, 2008). Further, other papers document differences in institutional ownership and analyst following and borrowing costs of urban and rural firms (Loughran and Schulz, 2005, 2006). Francis, Hassan, John, and Waisman (2007) consider the effect of location in a big city on CEO pay and power. Differently from their study, we focus on board governance and examine the effect of location-specific labor markets for prospective directors.

In a related paper, Becker, Cronqvist, and Fahlenbrach (2008) use the density of wealthy individuals around the firm's headquarters to instrument for the presence of a large individual blockholder. We are interested in board governance and characteristics rather than the presence of blockholders. Also, John and Kadyrzhanova (2008) demonstrate the presence of industry and state fixed effects in corporate governance and Wan (2007) shows that board members living closer to the firm's headquarters are more effective monitors. Our analysis

differs in several important ways. We do not examine the effects of peer firms' governance on board monitoring or the effect of distance to the firm on a hired director's efficiency. Instead, we focus on the pool of potential independent directors (directors and officers of same-industry firms and financial and other institutions) in the geographic area around the firm's headquarters and argue that it affects the firm's ability to attract independent directors and experts to its board. Finally, sociology work by Kono et al. (1998) reveals increased incidence of interlocks for firms located in the proximity of other firms. Differently from them, we explore the link between local director labor markets and board characteristics such as independence, expertise, and ownership incentives and use the documented relation to instrument for board monitoring in the governance-performance analysis.

Therefore, the present paper contributes to the literature in several key areas. First, it provides empirical support for the importance of local director labor markets for a firm's board independence. Second, the paper demonstrates the role of proximity to different sources of potential director talent for the ability to attract outside executive, financial, and academic experts and the level of equity incentives necessary for independent directors. Third, we identify firm characteristics that increase the dependence of board governance choices on the locally available director talent. Finally, we use the identified location-dependent determinant of board monitoring as an instrument to correct for the endogeneity in the relation of board governance and firm value.

The remainder of the paper is organized as follows. The second section describes the sample, data, and variables. The third section presents empirical results and robustness checks. The fourth section concludes.

2. Data

Sample

The sample includes Compustat/CRSP firms with available IRRC / RiskMetrics data on board characteristics and takeover provisions and available Thomson Financial / CDA Spectrum data on institutional holdings. Financial firms (6000-6999), regulated utilities (4900-4999), firms with assets below \$20 million, and firms headquartered outside continental US are excluded. The sample period is 1996-2006.

Variables

Board characteristics

Data on board characteristics is obtained from IRRC / RiskMetrics.

Board independence is defined as the proportion of outside directors on the board. Board expertise is characterized by a set of variables that capture the proportion of executive, financial, and academic experts on boards. Directors are classified as having executive expertise if they currently hold a CEO, CFO, COO, or other executive title or if they currently serve as employees on the board of another firm. Directors are classified as financial experts if they either hold a CFO, Treasurer, or other finance-related title at another firm or if they currently serve as employees on the board of a financial firm (SIC code 6000-6999). Academic expertise designation is based on an academic position in the director's primary title (where the data is available).

Independent director stock ownership is defined as the average percentage of voting shares held by an individual independent director on the board.

Characteristics of local director labor market

We construct several variables to characterize the availability of prospective directors in the vicinity of the firm's headquarters. A review of primary titles held by independent directors suggests that besides professional directors independent board members commonly hold an executive title at another firm while some come from finance or academic backgrounds.

Our main measure of the size of the local pool of prospective directors is the log of one plus the number of companies in the same 3-digit SIC industry with headquarters located within sixty miles¹ of the firm's headquarters (Director pool). Higher values of the variable reflect greater availability of local executives that form the local pool of prospective directors. Further, to capture the extent to which the pool of prospective directors is local in nature, we compute the proportion of local executives in the overall pool of same-industry executives, Director pool (ratio). We also expand the definition of "local" to include a hundred-mile radius around the firm's headquarters, Director pool (100 mi).

In addition to looking at the size of the local director labor market, we also use variables that proxy for higher costs of joining the firm's board as an independent expert director: greater distance to large financial firms and greater distance to top academic institutions. Large financial firms are firms with market value of assets of at least \$1 billion and SIC code between 6000-6999. Top academic institutions are the top 65 business schools ranked by US News and World Report (2007). Geographic coordinates for the county of the firm's location are obtained from the US Census (2000) Gazetteer files. We compute natural logs of one plus the distance in miles from the county of the firm's headquarters location.

¹ We choose the sixty mile threshold as a rough approximation for the short duration of a one-way commute. The results are robust to an alternative mile threshold: the hundred mile threshold is used in Table 6.

Finally, since the described proxies are correlated with each other, we construct an index via factor analysis of Director pool, Director pool (ratio), Distance (financial), Distance (academic), and a fifth variable, Distance (airports) which is intended to capture the ease of long-distance access to the firm's headquarters. The resulting variable, Limited director pool (factor), places positive weights on Distance measures and negative weights on Director pool variables and proxies for the thinness of the local director labor market.

Control variables

Several control variables are included in board governance regressions to capture the costs and benefits of intense board monitoring: firm size, sales growth, ROA, firm age, and volatility of the firm's returns. We also include the big city dummy to capture potential differences in board governance between urban and rural firms. The big city dummy is similar to the urban firm variable in Loughran and Schulz (2005) and is equal to 1 if the firm's headquarters are located in one of the ten largest consolidated metropolitan statistical areas identified by US Census (2000).

In addition, we include controls for other governance mechanisms that could serve as substitutes or complements in relation to board independence. The G Index is the index of twenty-four takeover defense provisions constructed by Gompers, Ishii, and Metrick (2003). The dummy for the presence of a 5% public pension fund blockholder is defined based on the list of eighteen largest public pension funds identified in Cremers and Nair (2005). As multiple governance variables could be determined simultaneously, the coefficients on these variables are more indicative of association with board independence.

Two-stage analyses

Two-stage estimation is used to examine the effect of board monitoring on firm value. Firm value is measured using average Q defined as the ratio of the firm market value to the book value of total assets. We also perform instrumental variables analysis of CEO compensation structure to explore the effects of board independence on the proportion of noncash (cash) compensation in total CEO pay (Execucomp). Similarly to Becker, Cronqvist, and Fahlenbrach (2008), several additional control variables are included in two-stage least squares regressions: past return, dividend payer dummy, and dividend yield.

All specifications include three-digit SIC industry effects and year effects. Robustness checks also include state averages of board independence and state effects.

Variable definitions are formalized in the Appendix. Summary statistics for the main variables are presented in Table 1.

[Table 1]

3. Results

Main results

Our first set of tests aimed at examining the effects of local director labor markets on board monitoring is presented in Table 2.

[Table 2]

We find that a larger local pool of prospective directors contributes to a higher percentage of outside directors on the board. The finding is consistent with the hypothesis that board governance quality is affected by the size of director labor markets in the firm's location.

In Column II, we control for firm age and risk. In Column III, for robustness, we include Alaska and Hawaii observations excluded from the main sample. The Director pool coefficient is positive and highly significant in all specifications.

Several other variables serve as significant predictors of board composition. Similarly to Linck, Netter, and Yang (2008), larger and more mature firms have a greater percentage of outsiders on the board. ROA and firm risk enter with a negative sign, but their coefficients are not significant. Monitoring by large public pension fund blockholders and oversight provided by independent boards appear to be complementary although we are careful to interpret the relation as indicative of association rather than causality. Firms with managers protected by takeover defenses tend to have more independent boards, which is a possible indicator of a substitute relation between corporate control market (external) monitoring and board (internal) monitoring.

Next, we proceed to the analysis of firm and industry characteristics that predict a stronger relation between the local director pool and the proportion of outside directors on the firm's board. The main specification reported in Column II of Table 2 is estimated within subsamples. Subsamples in Table 3 are identified on the basis of the size of the firm's assets, firm age, presence of a 5% institutional blockholder (of any type), product market share, return volatility, and industry competition. To the extent to which the supply of executives interested in serving as outside directors may be limited, we expect less established firms to be more constrained to the local director pool. Directors interested in building their reputation and gathering other director appointments would be more willing to join larger, more established firms even if they are located away from other companies. Larger size, longer track record, and the presence of an institutional blockholder are all expected to raise

the firm's profile and weaken potential limitations of noncentral location. The results indicate that board independence is related to the size of the local director pool only for smaller, younger firms with a small market share and for firms without an institutional blockholder. The effect is not significant for larger, more mature firms or for firms with a significant product market share or an institutional blockholder².

[Table 3]

The other two subsamples are based on return volatility. As an independent director's reputation may be affected by inferior firm performance, we expect greater volatility of the firm's returns to limit prospective directors' interest in joining the firm's board. Indeed, the presence of independent directors on the boards of more volatile firms is more sensitive to the local director labor market. Further, a greater degree of industry product market competition lowers the likelihood that the firm's profits will remain positive and continue to grow, increasing potential career risks to prospective directors. Similarly to directors of more volatile firms, directors on boards of firms operating in more competitive industries may experience greater career concerns. Hence, firms in competitive industries are more reliant on the local director pool when attracting independent directors on their board.

(Evidence on the lower distance between the independent director's executive job and the firm's location for less established firms can be found in Table 7, Panel B, which will be discussed later in this section.)

The effects of governance reforms

The next question is the effect of the governance reforms implemented with the passage of the Sarbanes Oxley Act and governance rules in exchange listing requirements on

² The pattern of the results is preserved when we split the sample based on whether the firm has less than two blockholders or at least two blockholders.

the relation between local director pools and board independence. On the one hand, firms that need to fulfill board independence requirements are likely to rely more on prospective director talent after the reforms and since local director pools are most accessible, the relation would be stronger in the post-2002 period. On the other hand, the new governance provisions have elevated the importance of outside directors on boards, which could potentially prompt firms to expand their director hiring efforts beyond the vicinity of the firm's headquarters.

The evidence is presented in Table 4. We use two definitions of the pre-reform period: year 2001 in Column I and years 2000 and 2001 in Column II. Similarly, post-reform period includes either year 2003 (Column III) or years 2003 and 2004 (Column IV). In all cases, the year of the reform (2002) is excluded.

[Table 4]

We find that the effect of the local pool of prospective directors on board independence is only significant in the pre-reform period. Board independence is not sensitive to local director labor markets after the adoption of the new governance rules. The findings support the second argument: due to a higher priority being placed on the presence of outsiders on boards following the governance reforms, firms no longer rely primarily on local director pools, expanding search for new directors to faraway firms and other sources of director talent.

Other board characteristics: expertise and incentives of independent directors

The preceding analyses of board characteristics focused on the proportion of independent directors on the board. However, the ability of directors to effectively advise and oversee the CEO is not limited to their lack of conflicts of interest due to being linked to or employed in the firm. Fich (2005) explores the role of executive expertise of directors.

Guner, Malmendier, and Tate (2006) emphasize the importance of financial expertise. Duchin, Matsusaka, and Ozbas (2007) also examine the presence of academic directors.

In Table 5, we examine the effects of director labor markets for board expertise.

[Table 5]

Executives of other firms indeed comprise a significant proportion of independent directors and are a key component of the local pool of prospective directors. The main variable, the local pool of prospective directors, has a positive and significant effect on the proportion of independent directors with executive expertise on the board. In addition, financial expertise of prospective independent directors may be of importance to key board functions such as the work of audit committees, especially after the passage of the Sarbanes Oxley Act. We use the distance to the closest large financial institution to proxy for the costs of drawing financial experts. The effect is significant and negative, as expected, which suggests that financial experts are less likely to join distant firms. Finally, we consider the possibility of attracting university professors for service as independent board members. Distance to business schools has a negative and significant effect on the proportion of academic directors, which corroborates the effect of distance on the appointment of academic experts.

While the hiring of independent directors and independent expert directors is an important contributor to board monitoring quality, ownership incentives are relevant for the effectiveness of the board's functions. Yermack (2004) analyzes the incentives of outside directors, including an ownership stake in the firm. In Column II of Table 5, we find that for firms with limited local director pools director equity stakes are on average higher. The effect is significant after we control for the size of the firm. The result suggests that firms use larger

equity incentives to overcome possible local bias and attract independent directors when local director pools are limited. Higher ownership stakes would also have the consequence of incentivizing directors employed at faraway firms to perform their tasks and supervise the management more effectively.

Local director markets and board independence: robustness checks

Additional analyses and robustness checks are performed in Table 6. In Column I, the variables describing distance to the closest large financial institution and distance to the closest major business school are included alongside our main director pool variable. The local prospective director pool retains a significant and positive effect on board independence. Further, greater distance to prospective financial directors decreases board independence, all else given. The effect of proximity to academic institutions is not statistically significant after controlling for the other two measures.

[Table 6]

In Column II, we replace the logged measure with the actual size of the prospective director pool for ease of interpretation. The effect remains statistically significant. The addition of 10 nearby same-industry firms boosts the proportion of outside directors by 1%.

Our main variable of interest captured the size of the pool of nearby prospective directors. For robustness, we use the proportion of nearby directors in the overall pool of same-industry executives (Director pool (ratio)) to capture the extent to which prospective director talent is local. This effect is tested in Column III. Similarly to the findings of earlier tables, it has a significant and positive effect on board independence. A 10% increase in the proportion of nearby prospective directors in the pool of prospective same-industry directors has a 0.7% effect on board independence.

As different location-specific dimensions of director labor markets may be correlated, we construct an index of such characteristics using factor analysis (Column IV). The variables include Director pool, Director pool (ratio), Distance (financial institutions), and distance to the closest airport. The resulting index assigns negative coefficients to Director pool variables and positive coefficients to Distance variables, so we call it the Limited director pool index. The index enters with the expected negative coefficient and the coefficient is statistically significant.

Our main criterion for identifying prospective local directors is a sixty-mile radius around the firm's headquarters. For robustness, we expand this definition based on a hundred-mile radius (Column V). The coefficient remains positive and significant and is similar in magnitude to the coefficient based on sixty-mile radius.

In Columns VI and VII, we control for the effect of the governance of geographically proximate peers (John and Kadyrzhanova, 2008) by including the state average of board independence and state effects, respectively. Our main measure remains positive and significant. All of the results were obtained after controlling for the effect of location in a big city. The big city effect becomes significant in Columns VI and VII and enters with a negative coefficient, indicating that the percentage of independent directors on boards is lower for firms headquartered in major cities, all else given.

Instrumental variables analysis of board independence effects

One of the pressing questions in empirical corporate governance research is the relation between governance and performance or valuation of the firm. Evidence of the favorable effects of governance for firm value and shareholder wealth is presented in existing work (see, e.g., Gompers, Ishii, and Metrick, 2003; Cremers and Nair, 2005; Bebchuk and

Cohen, 2005; Yermack, 1996; Rosenstein and Wyatt, 1990; Brickley, Coles, and Terry, 1994). Related work highlights the issue of causality in the analysis of the governance-performance relation (see, e.g., Core, Guay, and Rusticus, 2006; Chidambaran, Palia, and Zheng, 2008; Coles, Daniel, and Naveen, 2008; Gillan, Hartzell, and Starks, 2003; Lehn, Patro, and Zhao, 2003; Boone et al., 2007; Hermalin and Weisbach, 2003; Linck, Netter, and Yang, 2008).

In this section we use the relation between location-dependent director labor market characteristics and board independence documented in the previous tables to formulate an instrumental variables framework for analyzing the implications of board governance for firm value and incentives. This application is similar to Becker, Cronqvist, and Fahlenbrach (2008) that construct a location-dependent instrument for the presence of a large blockholder and subsequently examine blockholder effects on firm performance and other characteristics using instrumental variables analysis.

Instrumental variables estimation results are presented in Panel A of Table 7.

[Table 7]

In Column I, board independence has a significant positive effect on firm value after controlling for size, growth opportunities, operating performance, age, risk, G index, past return, and dividend variables. The effect remains positive and significant when we lag all explanatory variables, including board independence and its instrument (Column II). In Column III, we control for the location of the firm in a big city, which could be correlated with board independence and firm value, as well as state effects to take out any additional location-specific variation in value. The board independence result continues to hold.

While board independence can affect firm value directly, it can also influence compensation and incentives established for top management by the board. In Column IV, we examine the proportion of noncash compensation in total CEO pay. Managers in companies with less independent boards receive a larger share of their pay in the form of salary or bonus (cash compensation).

An important consideration when evaluating instrumental variables estimates is the validity of the introduced instrument. The instrument, the local pool of prospective directors, should be both relevant and excludable to satisfy instrumental variables estimation requirements. Statistically, the relevance of the instrument can be argued by examining first-stage estimation results. After controlling for other variables, the local director pool variable is a significant predictor of the percentage of outside directors on the board. Conceptually, firms may be interested in the local pool of prospective directors because of the location-specific networks and more informed oversight they bring. Soft information and reputation considerations increase the advantages of proximity. In turn, executives may prefer service on a local company's board due to lower information gathering costs, as a way to build reputation and network locally with other executives, or as a matter of convenience (to minimize absences from their company).

At thirty percent of the sample firms, independent directors with executive positions on other boards are on average no more than sixty miles away from their executive job. Summary statistics are reported in Table 7, Panel B. Smaller and less established firms are more often reliant on local director pools for building independent boards. Locally employed independent directors are more frequently seen in less established firms: in 42% of smaller firms (versus 25% of larger firms), in 38% of firms with short histories (versus 27% of

mature firms), and 36% of firms with a low product market share (versus 28% of firms with a large product market share).

Local director labor market characteristics are unlikely to affect firm performance directly³. To ensure that both firm value and prospective director pool are not driven by variation in the underlying industry characteristics, we include three-digit SIC industry effects in all regressions. Similarly, to control for the possibility that certain location-specific determinants are both conducive to firm value and to a more concentrated pool of prospective directors, we include state effects in a robustness check. Our main results continue to hold.

Discussion of the findings

One question about the interpretation of the Table 2 results is the possibility that better board monitoring quality causes firms to locate in greater proximity of other firms and large financial institutions.

Conceptually, it is not clear why CEOs less scrutinized by the board would want to locate their headquarters farther from their peers. The extent of hubris the CEO can derive from running the firm may in fact increase with proximity to other industry CEOs and financial firms (networking). Note that potential contamination from the preference of poorly monitored CEOs to locate in a large city, which may also have a greater number of same-industry firm headquarters just by virtue of its size, is eliminated by controlling for the Big City effect. Note also that we have considered the effects of product market competition in the industry separately in Table 3.

Further, firm location is likely to be predetermined as changes in the location of headquarters are not frequent. Our analyses examine variation in board independence and

³ Tests of overidentifying restrictions cannot be performed with a single instrument.

other board characteristics over a period of a decade (1996-2006). Many changes in board governance are recent. Board governance (particularly, board independence) is likely to have evolved since the firm's inception under the influence of investor scrutiny and regulatory changes. Despite an abundance of anecdotes, headquarters locations are quite persistent on average and are likely to have been chosen many years prior to current board governance changes for reasons that have to do with the location of production inputs (suppliers, labor), customers, transportation networks etc. Overall, examining a snapshot of the industry in the firm's location is likely to give us a source of exogenous variation that is not caused by the firm's board governance characteristics.

Another question that is relevant to our conclusions on the importance of locality for director labor markets is why distance matters in spite of technological developments that facilitate information sharing. Director service benefits from and in many cases requires presence at board meetings and "face time" with the firm's senior management. As shareholders do not directly oversee management, this function is delegated to the board. Unlike inside directors, independent directors are not involved in day-to-day operations but their presence at board meetings is intended to facilitate oversight of major decisions such as new appointments, mergers etc.

Taking this question further, board meetings occur a few times a year (a median value of six meetings reported in Execucomp for our sample) and our sample period starts in the second half of the nineties, well after airline deregulation and the ensuing increase in long-distance travel. Does distance still affect the ability and willingness of prospective directors to serve on boards? Our results imply that it does matter. Preferences of full-time executives may reflect the lower costs of serving on boards of nearby firms and the potential for

building a reputation with executives of local firms and industry peers. As soft information and local knowledge may not be communicated fully over longer distances, firms too may be interested in attracting local directors.

Further, results of subsample analyses indicate that firms less likely to enjoy broad recognition or possess significant resources are more likely to rely on local director labor markets in their search for independent directors. In addition to compensation (retainers and meeting fees), reputational incentives count. Indeed, prospective directors are more willing to overcome distance for larger, better known, less risky companies with a higher market share. Further, findings of subperiod analyses imply that after governance reforms companies have actively sought to hire the necessary number of outside directors to meet independent requirements of the Sarbanes Oxley Act and exchange listing rules, expanding independent board member hiring to a nationwide search if necessary.

Finally, of interest is the issue of the reliance on local director markets for hiring independent board members relative to the quality of attracted board members. We have examined several dimensions of director expertise, including executive expertise, financial expertise, and academic expertise that are likely to help director qualifications and their capability for advising and overseeing senior management. We found that firms located closely to the pool of potential director talent are more likely to attract experts to their boards.

4. Conclusions

In this paper we examined the impact of local director labor markets on firms' board governance choices. Executives of nearby firms and financial institutions may be more likely to join the board in the capacity of outside directors due to lower costs and a potential for

local reputation building. The evidence suggests that costs of distance remain and are relevant for corporate governance mechanisms. For example, at nearly a third of the sample firms, independent directors hold executive positions at other local firms. Our tests empirically document the positive link between access to a larger local pool of prospective directors and the proportion of outside directors and executive experts on the board. Firms located near large prospective director pools also have lower independent director equity stakes. Similarly, a firm's ability to retain financial and academic experts is decreasing in the distance to the potential sources of such directors.

Less established firms are particularly reliant on local director talent in their effort to retain independent board members. Increased demand for independent board members in the aftermath of the Sarbanes Oxley Act and introduction of stock exchange governance requirements has led all firms to rely less on local director labor markets.

The use of the size of the local pool of prospective directors as an instrument for board composition has enabled us to corroborate the positive effect of board independence on firm value after correcting for endogeneity. Further, as expected, boards with a greater percentage of outsiders award less cash compensation to the CEO.

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Appendix. Variable definitions.

The sample period is 1996-2006. The sample includes Compustat/CRSP firms with available board monitoring and takeover provisions data from IRRC/RiskMetrics and institutional holdings data from Thomson Financial/CDA Spectrum. Firms with total assets below 20 million, firms in financial industries (SIC codes 6000-6999), firms in regulated utilities industries (SIC codes 4900-4999), and firms headquartered outside continental US are excluded.

Variable name	Variable definition
<i>Board monitoring quality measures</i>	
Board independence	Percentage of independent directors on the board. Source: IRRC/RiskMetrics.
Expertise (executive)	Percentage of independent directors with executive expertise on the board. Executive expertise is defined as having the title of CEO, CFO, CIO, COO, President, Chairman, VP, Executive VP, Senior VP, Partner, Managing Director, or Treasurer, or being an Employee board member at another firm. Source: IRRC/RiskMetrics.
Expertise (financial)	Percentage of independent directors with financial expertise on the board. Financial expertise is defined as having the title of CFO or Treasurer at another firm or the title that contains "Finance"/ "Financial", "Investment" / "Investor", "Accounting"/ "Auditor", or "Economist", or being an Employee of a financial services company (SIC code 6000-6999). Source: IRRC/RiskMetrics.
Expertise (academic)	Percentage of independent directors with academic expertise on the board. Academic expertise is defined as having the title of "Professor", "Dean", "Lecturer", or "Scholar". Source: IRRC/RiskMetrics. Source: IRRC/RiskMetrics.
Indep. director ownership	Average percentage of voting shares held by an individual independent director on the board. Source: IRRC/RiskMetrics.
<i>Characteristics of local director labor markets</i>	
Director pool	Natural log of one plus the number of firms in the same 3-digit SIC industry with headquarters located within sixty miles of the firm's headquarters.
Director pool (num)	Number of firms in the same 3-digit SIC industry with headquarters located within sixty miles of the firm's headquarters.
Distance (financial)	Natural log of the distance in miles between the firm's headquarters and the closest financial institution with market value of at least 1 billion. Financial institutions are identified by SIC code between 6000 and 6999.
Distance (academic)	Natural log of the distance in miles between the firm's headquarters and the closest business school listed by US News and World Report (2007) among top 65 US business schools. Source: http://grad-schools.usnews.rankingsandreviews.com/grad/mba/search .
Director pool (ratio)	Director pool divided the total number of firms in the same 3-digit SIC industry.
Limited director pool (factor)	The index based on the factor analysis of the following variables (scoring coefficients in parentheses): Director pool (-0.64), Director pool (ratio) (-0.60), Distance (financial) (0.55), Distance (academic) (0.46), and Distance (airport) (0.49). Distance (airport) is the natural log of the distance in miles between the firm's headquarters and the closest airport hub (at least 0.05% of annual revenue passenger boardings per year).
Director pool (100 mi)	Natural log of one plus the number of firms in the same 3-digit SIC industry with headquarters located within one hundred miles of the firm's headquarters.

<i>Control variables</i>	
Firm size	Natural log of net sales. Source: Compustat.
Sales growth	Annual change in net sales divided by the previous year's net sales. Source: Compustat.
ROA	Ratio of operating income before depreciation to total assets. Source: Compustat.
Firm age	Natural log of the number of years since the firm's shares are first listed in CRSP. Source: CRSP monthly.
Firm riskiness	Three-year moving standard deviation of the firm's monthly excess return. Source: CRSP monthly.
Big City	Dummy variable equal to 1 if the firm's headquarters are located in one of the ten largest consolidated metropolitan statistical areas identified by US Census (2000) and 0 otherwise. The areas include New York City, Los Angeles, Chicago, Washington-Baltimore, San Francisco, Philadelphia, Boston, Detroit, Dallas, and Houston, and their suburbs. Source: Compustat.
PPF Blockholder	Dummy variable equal to 1 if a large public pension funds holds a 5% or larger stake in the firm and 0 otherwise. Large public pension funds are identified following Cremers and Nair (2005). Source: Thomson Financial / CDA Spectrum.
G Index	The index of 24 takeover defense provisions from Gompers, Ishii, and Metrick (2003). Source: IRRC/RiskMetrics.
Board independence (state)	Average percentage of independent directors on the board in the state where the firm's headquarters are located, computed for a given year. Source: IRRC/RiskMetrics
<i>Additional variables used in firm value and compensation regressions</i>	
Market-to-book ratio	Ratio of the firm market value to the book value of total assets. Market value is defined as the book value of total assets minus the book value of equity plus the product of year-end price and the number of common shares outstanding. Source: Compustat.
Noncash/Total CEO Comp.	Ratio of noncash compensation to total CEO compensation (including the value of option grants). Source: Execucomp.
Past return	Previous year's average monthly excess return on the firm's stock. Source: CRSP monthly.
Dividend payer	Dummy variable equal to 1 if the firm paid a cash dividend in a given year and 0 otherwise. Source: Compustat
Dividend yield	Cash dividends per share divided by price at year-end. Source: Compustat.

Table 1. Summary statistics.

Variable definitions and sample selection criteria are presented in the Appendix.

Variable name	Obs.	Mean	Median	Std. Dev.
Board independence	13161	0.641	0.667	0.181
Expertise (executive)	13182	0.336	0.286	0.315
Indep. director ownership	10730	0.215	0.000	0.787
Expertise (financial)	6069	0.159	0.000	0.324
Expertise (academic)	5390	0.055	0.000	0.118
Director pool	13161	1.208	0.693	1.293
Distance (financial)	13161	0.658	0.000	1.390
Distance (academic)	13161	2.948	2.836	1.443
Limited director pool (factor)	13161	-0.045	-0.044	0.825
Director pool (ratio)	13161	0.093	0.040	0.126
Director pool (100 mi)	13161	9.499	2.000	19.424
Firm size	13161	7.294	7.193	1.502
Sales growth	13161	0.123	0.079	0.405
ROA	13161	0.139	0.140	0.106
PPF Blockholder	13161	0.048	0.050	0.026
G Index	13161	9.180	9.000	2.633
Firm age	13161	2.835	2.890	0.902
Firm riskiness	13161	0.118	0.104	0.061
Big City	13161	0.522	1.000	0.500
Market-to-book ratio	13145	2.093	1.635	1.529
Noncash/Total CEO Comp.	12093	0.485	0.504	0.223
Past return	13158	0.005	0.003	0.039
Dividend payer	13145	0.565	1.000	0.496
Dividend yield	13160	0.010	0.003	0.019

Table 2. Local director labor markets and board governance.

Variable definitions and sample selection criteria are presented in the Appendix. Alaska and Hawaii observations, excluded in the main sample, are included in Column III.

Ordinary least squares regressions. The dependent variable is Board independence.

Three-digit SIC industry effects and year effects are included. Robust t-statistics are italicized.

	I	II	III
Director pool	0.012 ***	0.012 ***	0.012 ***
	<i>2.60</i>	<i>2.66</i>	<i>2.67</i>
Firm size	0.022 ***	0.019 ***	0.019 ***
	<i>7.49</i>	<i>6.07</i>	<i>6.14</i>
Sales growth	-0.014 **	-0.011 *	-0.011 *
	<i>-2.10</i>	<i>-1.92</i>	<i>-1.93</i>
ROA	-0.015	-0.017	-0.017
	<i>-0.49</i>	<i>-0.57</i>	<i>-0.57</i>
PPF Blockholder	0.371 ***	0.361 ***	0.362 ***
	<i>3.07</i>	<i>2.99</i>	<i>3.01</i>
G Index	0.012 ***	0.011 ***	0.011 ***
	<i>8.51</i>	<i>7.76</i>	<i>7.81</i>
Firm age		0.014 ***	0.014 ***
		<i>3.25</i>	<i>3.26</i>
Firm riskiness		-0.025	-0.025
		<i>-0.40</i>	<i>-0.40</i>
Big City	-0.009	-0.009	-0.009
	<i>-1.05</i>	<i>-1.11</i>	<i>-1.09</i>
Obs.	13161	13161	13185
R ²	0.288	0.291	0.292
Adj. R ²	0.275	0.278	0.279

*** significant at 1%; ** significant at 5%; * significant at 10%

Table 3. Local director labor markets and board governance: Subsample analysis.*Panel A. Subsamples based on size, age, and number of blockholders.*

Variable definitions and sample selection criteria are presented in the Appendix.

Ordinary least squares regressions by subsample. The dependent variable is Board independence.

Subsamples are identified as follows: firms with Total assets below (Column I) and above the sample median (Column II); firms with the number of years since first listing in CRSP below (Column III) and above the sample median (Column IV); firms with (Column V) and without a 5% institutional blockholder (Column VI).

Three-digit SIC industry effects and year effects are included. Robust t-statistics are italicized.

	Total assets		Age		Blockholder (5%)	
	Small	Large	Recent	Mature	No	Yes
	I	II	III	IV	V	VI
Director pool	0.016 ***	0.008	0.015 **	0.009	0.025 ***	0.006
	<i>2.86</i>	<i>1.25</i>	<i>2.48</i>	<i>1.36</i>	<i>3.29</i>	<i>1.40</i>
Firm size	0.005	0.026 ***	0.015 ***	0.013 **	0.020 ***	0.017 ***
	<i>0.85</i>	<i>4.26</i>	<i>3.74</i>	<i>2.54</i>	<i>4.44</i>	<i>4.81</i>
Sales growth	-0.002	-0.019 *	-0.007	-0.025 ***	-0.006	-0.019 **
	<i>-0.52</i>	<i>-1.96</i>	<i>-1.28</i>	<i>-2.70</i>	<i>-0.89</i>	<i>-2.03</i>
ROA	0.009	0.044	-0.028	0.090	-0.059	-0.017
	<i>0.27</i>	<i>0.70</i>	<i>-0.81</i>	<i>1.63</i>	<i>-1.42</i>	<i>-0.48</i>
PPF						
Blockholder	0.358 ***	0.641 ***	0.506 ***	0.226	0.036	0.030
	<i>2.58</i>	<i>2.79</i>	<i>3.42</i>	<i>1.37</i>	<i>0.23</i>	<i>0.18</i>
G Index	0.012 ***	0.010 ***	0.012 ***	0.010 ***	0.012 ***	0.011 ***
	<i>6.53</i>	<i>4.86</i>	<i>6.19</i>	<i>4.98</i>	<i>4.89</i>	<i>7.36</i>
Firm age	-7.2E-05	0.021 ***	-0.007	0.089 ***	0.033 ***	0.009 **
	<i>-0.01</i>	<i>3.61</i>	<i>-1.02</i>	<i>5.54</i>	<i>4.30</i>	<i>2.06</i>
Firm riskiness	0.092	-0.368 ***	-0.052	-0.014	0.043	-0.024
	<i>1.29</i>	<i>-3.30</i>	<i>-0.72</i>	<i>-0.12</i>	<i>0.41</i>	<i>-0.35</i>
Big City	-0.013	-0.011	-0.015	-0.014	-0.026 *	-0.004
	<i>-1.18</i>	<i>-0.86</i>	<i>-1.21</i>	<i>-1.18</i>	<i>-1.89</i>	<i>-0.44</i>
Obs.	6590	6571	6722	6439	3771	9390
R ²	0.271	0.362	0.295	0.375	0.387	0.296
Adj. R ²	0.245	0.342	0.272	0.354	0.352	0.277

*** significant at 1%; ** significant at 5%; * significant at 10%

Panel B. Subsamples based on firm volatility, product market share, and industry competition.

Variable definitions and sample selection criteria are presented in the Appendix.

Ordinary least squares regressions by subsample. The dependent variable is Board independence.

Subsamples are identified as follows: firms with Volatility (standard deviation of monthly excess returns in a given year, CRSP monthly) above (Column I) and below the sample median (Column II); firms with the share of net sales in total net sales in the three-digit SIC industry below (Column III) and above the sample median (Column IV); firms in three-digit SIC industries with Herfindahl index of net sales below (Column V) and above the sample median (Column VI).

Three-digit SIC industry effects and year effects are included. Robust t-statistics are italicized.

	Volatility		Product market share		Industry competition	
	High	Low	Low	High	Competitive	Concentrated
	I	II	III	IV	V	VI
Director pool	0.014 ***	0.009 *	0.017 ***	0.004	0.016 ***	0.003
	<i>2.78</i>	<i>1.71</i>	<i>2.81</i>	<i>0.48</i>	<i>2.86</i>	<i>0.36</i>
Firm size	0.014 ***	0.023 ***	0.008 *	0.021 ***	0.014 ***	0.025 ***
	<i>3.76</i>	<i>5.97</i>	<i>1.70</i>	<i>3.29</i>	<i>3.21</i>	<i>5.96</i>
Sales growth	-0.003	-0.050 ***	-0.003	-0.037 ***	-0.007	-0.035 ***
	<i>-0.68</i>	<i>-4.21</i>	<i>-0.57</i>	<i>-3.21</i>	<i>-1.18</i>	<i>-3.35</i>
ROA	-0.027	0.036	-0.019	0.144 **	-0.017	0.025
	<i>-0.86</i>	<i>0.70</i>	<i>-0.55</i>	<i>2.54</i>	<i>-0.47</i>	<i>0.45</i>
PPF Blockholder	0.442 ***	0.304 *	0.352 **	0.611 ***	0.414 **	0.285 *
	<i>2.97</i>	<i>1.93</i>	<i>2.31</i>	<i>3.33</i>	<i>2.37</i>	<i>1.79</i>
G Index	0.012 ***	0.009 ***	0.014 ***	0.010 ***	0.011 ***	0.012 ***
	<i>6.93</i>	<i>5.88</i>	<i>6.63</i>	<i>5.09</i>	<i>5.01</i>	<i>6.70</i>
Firm age	0.013 **	0.013 ***	0.008	0.014 **	0.019 ***	0.009 *
	<i>2.38</i>	<i>2.62</i>	<i>1.32</i>	<i>2.38</i>	<i>2.81</i>	<i>1.67</i>
Firm riskiness	-0.028	0.014	0.027	-0.242 **	-0.044	-0.004
	<i>-0.43</i>	<i>0.12</i>	<i>0.37</i>	<i>-2.09</i>	<i>-0.57</i>	<i>-0.04</i>
Big City	-0.009	-0.011	-0.023	0.005	-0.017	-0.002
	<i>-0.89</i>	<i>-1.17</i>	<i>-1.64</i>	<i>0.44</i>	<i>-1.27</i>	<i>-0.16</i>
Obs.	6633	6528	6557	6604	6495	6666
R ²	0.270	0.337	0.241	0.411	0.220	0.366
Adj. R ²	0.244	0.313	0.224	0.389	0.210	0.344

*** significant at 1%; ** significant at 5%; * significant at 10%

Table 4. Local director labor markets and board governance: The effect of governance reforms.

Variable definitions and sample selection criteria are presented in the Appendix.

Ordinary least squares regressions by subperiod. The dependent variable is Board independence.

Subperiods are identified as follows: before Sarbanes Oxley Act of 2002 and stock exchange governance rules – 2001 (Column I) and after governance reforms - 2003 (Column III) and 2003-2004 (Column IV).

Three-digit SIC industry effects and year effects (in Columns II and IV) are included. Robust t-statistics are italicized.

	Before governance reforms		After governance reforms	
	2001	2000-2001	2003	2003-2004
	I	II	III	IV
Director pool	0.016 **	0.014 **	-0.001	0.000
	<i>2.33</i>	<i>2.26</i>	<i>-0.08</i>	<i>0.09</i>
Firm size	0.013 **	0.015 ***	0.021 ***	0.019 ***
	<i>2.56</i>	<i>3.23</i>	<i>3.89</i>	<i>3.96</i>
Sales growth	-2.9E-04	4.3E-04	-0.017	-0.023
	<i>-0.08</i>	<i>0.13</i>	<i>-0.70</i>	<i>-1.44</i>
ROA	-0.065	-0.066	0.069	0.040
	<i>-1.39</i>	<i>-1.57</i>	<i>1.06</i>	<i>0.73</i>
Firm age	0.017 ***	0.017 ***	0.011	0.012 *
	<i>2.62</i>	<i>2.85</i>	<i>1.60</i>	<i>1.88</i>
Firm riskiness	-0.008	0.026	0.207 *	0.166
	<i>-0.08</i>	<i>0.29</i>	<i>1.76</i>	<i>1.58</i>
Blockholder	0.334	0.410 **	-0.020	-0.054
	<i>1.34</i>	<i>2.06</i>	<i>-0.07</i>	<i>-0.23</i>
G Index	0.017 ***	0.016 ***	0.008 ***	0.008 ***
	<i>7.23</i>	<i>7.80</i>	<i>3.48</i>	<i>4.03</i>
Big City	-0.006	-0.003	-0.004	-0.003
	<i>-0.40</i>	<i>-0.20</i>	<i>-0.30</i>	<i>-0.26</i>
Obs.	1442	2678	1195	2255
R ²	0.311	0.304	0.315	0.278
Adj. R ²	0.189	0.241	0.174	0.205

*** significant at 1%; ** significant at 5%; * significant at 10%

Table 5. Local director labor markets and board governance: Additional measures of board monitoring quality.

Variable definitions and sample selection criteria are presented in the Appendix.
 Ordinary least squares regressions. The dependent variable is Board independence.
 Three-digit SIC industry effects and year effects are included. Robust t-statistics are italicized.

	Expertise (executive)	Indep. director ownership	Expertise (financial)	Expertise (academic)
	I	II	III	IV
Director pool	0.009 ** <i>2.16</i>	-0.040 ** <i>-2.21</i>		
Distance (financial)			-0.004 ** <i>-1.99</i>	
Distance (academic)				-0.005 ** <i>-1.96</i>
Firm size	0.006 ** <i>2.32</i>	-0.049 *** <i>-3.98</i>	-0.006 *** <i>-2.79</i>	0.001 <i>0.26</i>
Sales growth	0.008 <i>1.63</i>	0.015 <i>0.84</i>	-0.003 <i>-0.86</i>	-4.1E-04 <i>-0.14</i>
ROA	-0.006 <i>-0.16</i>	-0.029 <i>-0.22</i>	0.035 * <i>1.79</i>	0.022 <i>0.86</i>
Firm age	0.002 <i>0.42</i>	-0.015 <i>-0.95</i>	-2.0E-04 <i>-0.06</i>	0.013 *** <i>3.69</i>
Firm riskiness	-0.044 <i>-0.62</i>	-0.109 <i>-0.41</i>	-0.069 <i>-1.46</i>	0.127 * <i>1.70</i>
PPF Blockholder	-0.122 <i>-1.08</i>	-0.795 <i>-1.50</i>	0.070 <i>0.62</i>	0.023 <i>0.21</i>
G Index	0.001 <i>0.76</i>	-0.017 ** <i>-2.46</i>	0.001 <i>0.74</i>	-0.002 <i>-1.51</i>
Big City	-0.006 <i>-0.85</i>	0.055 * <i>1.70</i>	-0.002 <i>-0.45</i>	-0.006 <i>-0.75</i>
Obs.	13182	10730	6069	5390
R ²	0.619	0.162	0.873	0.124
Adj. R ²	0.612	0.143	0.868	0.085

*** significant at 1%; ** significant at 5%; * significant at 10%

Table 6. Local director labor markets and board governance: Additional measures and control variables.

Variable definitions and sample selection criteria are presented in the Appendix.
 Ordinary least squares regressions. The dependent variable is Board independence.
 Three-digit SIC industry effects and year effects are included. Robust t-statistics are italicized.

	I	II	III	IV	V	VI	VI
Firm size	0.018 *** <i>5.97</i>	0.019 *** <i>6.19</i>	0.019 *** <i>6.12</i>	0.019 *** <i>6.09</i>	0.019 *** <i>6.09</i>	0.019 *** <i>6.10</i>	0.019 *** <i>6.33</i>
Sales growth	-0.011 * <i>-1.86</i>	-0.011 * <i>-1.90</i>	-0.011 * <i>-1.88</i>	-0.011 * <i>-1.85</i>	-0.011 * <i>-1.89</i>	-0.010 * <i>-1.74</i>	-0.011 * <i>-1.86</i>
ROA	-0.016 <i>-0.55</i>	-0.020 <i>-0.65</i>	-0.020 <i>-0.68</i>	-0.019 <i>-0.63</i>	-0.018 <i>-0.60</i>	-0.016 <i>-0.54</i>	-0.013 <i>-0.45</i>
Firm age	0.014 *** <i>3.20</i>	0.014 *** <i>3.29</i>	0.014 *** <i>3.27</i>	0.014 *** <i>3.24</i>	0.014 *** <i>3.23</i>	0.014 *** <i>3.24</i>	0.015 *** <i>3.49</i>
Firm riskiness	-0.032 <i>-0.51</i>	-0.026 <i>-0.41</i>	-0.017 <i>-0.28</i>	-0.024 <i>-0.39</i>	-0.023 <i>-0.36</i>	-0.027 <i>-0.43</i>	-0.040 <i>-0.65</i>
PPF Blockholder	0.357 *** <i>2.95</i>	0.362 *** <i>3.00</i>	0.353 *** <i>2.92</i>	0.359 *** <i>2.96</i>	0.359 *** <i>2.97</i>	0.362 *** <i>3.10</i>	0.348 *** <i>2.96</i>
G Index	0.011 *** <i>7.73</i>	0.011 *** <i>7.64</i>	0.011 *** <i>7.66</i>	0.011 *** <i>7.64</i>	0.011 *** <i>7.73</i>	0.010 *** <i>7.34</i>	0.011 *** <i>7.81</i>
Big City	-0.009 <i>-1.04</i>	-0.004 <i>-0.51</i>	-0.004 <i>-0.55</i>	-0.010 <i>-1.19</i>	-0.007 <i>-0.85</i>	-0.021 ** <i>-2.46</i>	-0.027 ** <i>-2.13</i>
Director pool	0.011 ** <i>2.41</i>					0.013 *** <i>3.05</i>	0.012 *** <i>2.68</i>
Director pool (num)		0.001 ** <i>2.18</i>					
Distance (financial)	-0.005 ** <i>-2.07</i>						
Distance (academic)	0.002 <i>0.70</i>						
Director pool (ratio)			0.072 ** <i>2.16</i>				
Limited director pool (factor)				-0.014 *** <i>-2.82</i>			
Director pool (100 mi)					0.010 ** <i>2.14</i>		
Board independence (state)						0.766 *** <i>11.17</i>	
Obs.	13161	13161	13161	13161	13161	13161	13161
R ²	0.292	0.290	0.290	0.290	0.290	0.317	0.310
Adj. R ²	0.279	0.277	0.277	0.277	0.277	0.304	0.295

*** significant at 1%; ** significant at 5%; * significant at 10%

Table 7. Instrumental variables analysis: The effect of board governance on firm value.

Variable definitions and sample selection criteria are presented in the Appendix.

Instrumental variables least squares regressions. The dependent variable is Market-to-book ratio in Columns I-III and Noncash/Total CEO Comp. in Column IV. In Column III, all right-hand-side variables in the first and second-stage equations are lagged one period.

Board independence is predicted with second-stage controls and Director pool.

Three-digit SIC industry effects, state effects (Column III) and year effects are included. Robust t-statistics are italicized.

Panel A. Instrumental variables analysis

	Market-to-book ratio			Noncash/Total CEO Comp.	
	I	II	III	IV	
Board independence	17.794 **	12.584 **	14.275 **	2.207 **	
	<i>2.27</i>	<i>2.29</i>	<i>2.43</i>	<i>2.00</i>	
Firm size	-0.291 **	-0.209 **	-0.247 **	0.019	
	<i>-2.07</i>	<i>-1.97</i>	<i>-2.24</i>	<i>0.87</i>	
Sales growth	0.544 ***	0.286 **	0.488 ***	0.054 *	
	<i>2.82</i>	<i>2.10</i>	<i>3.00</i>	<i>1.92</i>	
ROA	5.054 ***	4.316 ***	4.981 ***	0.047	
	<i>7.70</i>	<i>7.23</i>	<i>8.87</i>	<i>0.55</i>	
Firm age	-0.286 **	-0.188 *	-0.246 **	-0.037 **	
	<i>-2.11</i>	<i>-1.94</i>	<i>-2.26</i>	<i>-2.43</i>	
Firm riskiness	2.273 *	0.950	2.071 **	0.372 **	
	<i>1.91</i>	<i>1.03</i>	<i>2.09</i>	<i>2.45</i>	
G Index	-0.220 **	-0.171 ***	-0.181 ***	-0.019 *	
	<i>-2.49</i>	<i>-2.57</i>	<i>-2.65</i>	<i>-1.71</i>	
Big City			0.158		
			<i>0.69</i>		
Past return	5.300 ***	2.771 ***	5.334 ***	0.255 **	
	<i>5.92</i>	<i>4.12</i>	<i>6.92</i>	<i>1.97</i>	
Dividend payer	0.099	0.032	0.065	-0.022	
	<i>0.64</i>	<i>0.26</i>	<i>0.53</i>	<i>-1.16</i>	
Dividend yield	-5.901 *	-5.016 *	-4.853 *	-0.455	
	<i>-1.75</i>	<i>-1.75</i>	<i>-1.79</i>	<i>-1.01</i>	
Obs.	13166	11564	13166	12098	

*** significant at 1%; ** significant at 5%; * significant at 10%

Panel B. Proportion of firms with independent directors that are employed at local firms

The table below reports the proportion of firms in the sample and in subsamples with an average independent director serving as an employee director on the board of another company located within sixty miles of the firm's headquarters.

Variable definitions and sample selection criteria are presented in the Appendix. Firms with at least one independent director that simultaneously holds an employee directorship on another company's board for which the headquarters location could be verified are included in this analysis.

Subsamples are identified as follows. Small (large) firms are firms with Total assets below (above) the sample median. Recent (mature) firms are firms with the number of years since first listing in CRSP below (above) the sample median. Low (high) product market share firms are firms with the share of net sales in total three-digit SIC industry net sales below (above) the sample median.

All firms	30.8%
Small firms	42.6%
Large firms	25.6%
Recent firms	37.8%
Mature firms	27.4%
Low product market share	35.5%
High product market share	28.2%