FURTHER EVIDENCE ON INSTITUTIONAL OWNERSHIP AND CORPORATE VALUE

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ABSTRACT

Whether institutional investors monitor corporations and improve firm value is a key question for corporate governance and investment management. I find little empirical support for the hypothesis that institutions undertake monitoring that increases firm quality and valuation. Granger causation tests show that while quality firms do attract institutional investment, institutions do not monitor and firm value subsequently declines. Instead, institutional incentives are critical; some institutions with strong incentives to monitor do, indeed, monitor. Institutions with concentrated portfolios successfully monitor while institutions with a larger percentage stake do not. Pensions and endowments are better monitors than insurers, banks and mutual funds.

1. INTRODUCTION

The question of institutional monitoring is of central importance to corporate finance. In their literature survey, Shleifer and Vishny (1997) accord large ownership blocks the key instrument of corporate governance. Concentrated control rights facilitate coordination across investors and encourage particular large investors to undertake costly governance actions including monitoring, resorting to
the courts and attempting takeovers. Without institutional monitoring, the classic corporate finance issue of ownership-control separation is much more problematic.


An increasingly popular interpretation is that institutions discipline corporate managers to increase firm value. While unsurprising in light of the aforementioned research, this belief in institutional monitoring is incompatible with the evidence documenting poor institutional investment performance relative to the market. Since shareholder monitoring implies oversight of corporate management to increase firm value, pervasive institutional monitoring cannot coexist with institutional underperformance. This incongruity between two bodies of academic literature suggests revisiting whether firm value varies with the degree of institutional ownership.

Before continuing, one must be precise about terminology; by “monitoring,” I mean shareholder oversight of management to increase firm value. Monitoring involves effort, influence and results. Effort entails proclivity to gather information and to affect company management. After effort, the potential monitor must attempt to influence corporate managers’ behavior and must succeed. In this paper, monitoring requires a positive outcome – I consider only effective monitoring. Although the focus here is on explicit activist monitoring, the evidence presented here also applies to instances of implicit monitoring; that is, where the mere presence and implicit oversight of institutional investors constrains corporate decision-making.

By reviewing this definition of monitoring, one can see why institutions might be monitors. First, institutions are key information gatherers, or information intermediaries, and, as such, are able to publicly evaluate and discipline management. Institutional scale makes them particularly efficient information gatherers since the cost of acquiring valuable information likely has a large fixed component and this fixed cost can be amortized over the large number of shares held (Merton, 1987). Second, institutions’ size makes them viable influencers. Corporate executives will be more responsive to large shareholders; they will also likely be more responsive to entities interested in business-oriented monitoring rather than social-policy monitoring or gaining direct control (Gillan & Starks,
Finally, institutions monitor indirectly through the market – insofar as institutional trading affects prices, it serves a disciplining function because stock price reactions to major managerial decisions are widely tracked in the financial press.

The difficulty in reconciling institutional underperformance and institutional monitoring is not the only reason to expect institutions are ineffective monitors. First, institutions are characterized as myopic owners who “vote with their feet” in response to unfavorable short-term results. Relatedly, diversification and liquidity requirements encourage small positions, which hinder monitoring. Historically, institutions have not generally participated in corporate governance and now may have a cultural bias against participation. Fourth, populist opposition, given voice through politics, may hinder institutional monitoring. American history is rife with examples of political opposition to concentration of financial power; certainly statutory and regulatory hurdles exist. Even where they do not prohibit monitoring *de jure*, they may raise monitoring costs prohibitively. Fifth, institutions suffer from a range of agency problems including free-rider problems, lack of incentives, loyalties displaced to management, ambiguous benefits and a bank-run problem. The gains from activism go to the institution’s beneficiaries while any losses may induce personal liability of the fiduciary. Sixth, conglomerates, analogous to institutions in many respects but suffering from fewer of these hindrances to monitoring, ultimately proved a failed experiment. Finally, institutional investors may lack sufficient expertise. If they lack expertise in their primary role, there is little reason to expect aptitude in an ancillary role.

Does firm quality vary with the degree of institutional ownership? My results strongly reject the hypothesis that institutions undertake monitoring which affects firm quality and valuation.

Unlike other studies, I examine the time series to detect causal relationships. Institutional monitoring requires that institutional investment Granger-cause higher firm quality and valuation. The specific hypothesis is that increases in institutional own show quality improvements attract institutions but institutions subsequently preside over a quality decline.

The causal evidence of attraction to quality, a firm attribute, suggests considering differences in institutional type (e.g. banks vs. pensions). In selecting stocks, banks like different firm attributes than other institutions (Del Guercio, 1995). Further, incentives for and barriers to monitoring differ in numerous dimensions (diversification regulations, liquidity demands, degree of management co-option, etc.) across institutional type. While developing unambiguous by-type expectations is difficult, I show it is reasonable to expect pensions, endowments and insurers to be more prone to monitor than banks and mutual funds. Analyzing the by-type relationship in the proper time-series causation framework provides
estimates consistent with these expectations. Importantly, the causation framework reverses some anomalous results from those obtained in simple contemporaneous regressions.

Finding such strong evidence that some institutions are better able to monitor than others but faced with the difficulty in drawing clear implications across institutional types, I next focus on specific institutional characteristics (e.g. high vs. low turnover). Selected appropriately, characteristics are more directly related to monitoring incentives than institutional type is. Specifically, I expect monitoring by institutions with a large fraction of a firm, large dollar positions, long holding periods, large portfolios, or a large portion of their portfolio concentrated in a firm. The results are striking; many probable monitors do not. However, institutions with more concentrated portfolios, large portfolios and large dollar investments are better monitors. Again, the causation framework offers insights beyond a contemporaneous regression. Measuring the importance of specific institutional incentives to monitor, particularly institutional focus, is a key finding for corporate governance.

The causal framework is a contribution of this paper. Examining institutional monitoring virtually requires allowing for causation. Investigating a non-causal contemporaneous relation might be appropriate for relatively static potential monitors like director-owners (Morck et al., 1988), insiders and 5% blockholders (McConnell & Servaes, 1990), 20% and majority blockholders (Holderness & Sheehan, 1988), or investment analysts (Chung & Jo, 1996). However, the nature and level of institutional ownership is much more dynamic. While the other potential monitors likely have a relatively stable association with the monitored firm, this is not likely the case with institutions.

Consider an institution where activist monitoring is an explicit policy. Its portfolio could include firms with a range of valuations. Some of the investments are in low quality companies – newly acquired in anticipation that they will potentially benefit from institutional monitoring. Others will be medium quality firms beginning to respond to monitoring. The remainder of the portfolio could include high quality firms with no further potential gain to monitoring and now awaiting disposition. Cross-sectionally this is a muddle – no relation exists on average. The time-series, however, can reveal the positive impact of monitoring. If monitoring is effective, the transition from low to high quality will follow the increase in total institutional ownership attributable to the monitoring institution’s acquisition of shares. I use Granger-causation tests to discern whether this temporal precedence exists.

Causation tests have another advantage in the context of monitoring – they control for endogeneity. The monitoring literature in general and this paper specifically relies on Tobin’s $q$ as a measure of firm quality. However, market-to-book ratios
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(of which $q$ is a permutation) are also a measure of investment style; portfolios characterized by low market-to-book follow a “value” investment style while high market-to-book follow a “growth” style. Institutions’ choice of whether to pursue a value or growth style is a decision unrelated to the question of whether to monitor. Thus, contemporaneous association suffers from serious endogeneity problems. I use a bi-directional systems-of-equations approach to causation that avoids the endogeneity issue.

In addition to the compelling result that only a subset of institutions overcomes the barriers to monitoring, this study has several valuable distinctions from other research. I use more comprehensive data than prior research; prior studies have relied on limited time-series and cross-sections of data. The data used here is the most comprehensive available that focuses on institutional ownership. It contains a time series which allows me to both investigate causation and ensure the stability of the results. Unlike most other studies, the data is not limited to a particular subset of institutions. I examine over 20,000 firm-years; prior research has been limited to a maximum of about 1100 firms in two or three years. Unlike other research, I exclude potentially confounding insider ownership data. Finally, the data is comprehensive in another dimension – by including all firms and not just focusing on control events or the worst performers, one gains insight into institutions’ ongoing monitoring efforts. This study avoids a problem with watch-list research where activist institutions’ monitoring gets credit for corporate recoveries but not the preceding declines. It also avoids the selection-biases in watch-list research that management at the worst performing firms has the least viable objection to institutional monitoring. By including all firms, not just the worst performers, I avoid another problem with these malady studies – the targeted worst performers may be unresponsive to the informal ongoing institutional monitoring which many commentators espouse as a corporate governance cure (e.g. Jacobs, 1991; Monks, 1996). In this respect, these watch-list studies are similar to the other public-pressure studies that examine institutional activism in proxy contests, proxy proposals, etc. Here, I examine institutions’ ability to monitor top, median and worst firms through both formal and informal measures.

In sum, this paper advances the literature in several dimensions. Recognizing the difficulty in reconciling institutional underperformance with institutional monitoring is an intellectual contribution. Examining the relationship between institutional ownership and quality in a causation framework is a major methodological contribution. Analyzing institutional type and, more significantly, institutional characteristics represents a further enhancement over prior work.

Section 2 provides additional background and discusses prior research. Section 3 presents the primary empirical results. Sections 4 and 5 consider specific institutional incentives to monitor, and Section 6 concludes.
2. MOTIVATION AND PRIOR RESEARCH

The introduction discussed reasons institutions would and would not be associated with monitoring. Since the prior research has developed the pro-monitoring arguments well and since they are perhaps more intuitive, I do not discuss them further. Instead, I develop the non-monitoring explanations.

2.1. Arguments Against Institutional Monitoring

First, institutions are characterized as myopic owners who sell in response to unfavorable short-term results. Certainly, there is evidence of institutional positive-feedback trading, window-dressing and high turnover (Lakonishok et al., 1991). Some executives argue that this myopia makes them peripheral shareholders unentitled to a voice in corporate governance; short-term shareholders are likened to (votless) optionholders – focused on short-term price moves – and, accordingly, entitled to no voice in corporate governance. Since a key ingredient in effective monitoring is gaining influence with management, a short-term focus will hinder institutional activism. Further, a short time horizon reduces incentives to monitor since it reduces the period over which to amortize start-up costs.

Second, diversification and liquidity are key reasons individuals use institutions to invest. Liquidity needs reinforce the need to diversify, so both diversification and liquidity encourage small position sizes. This makes monitoring difficult as the relatively fixed monitoring costs are spread over fewer shares held. Institutions may choose to avoid the excess risk of non-diversification (Demsetz & Lehn, 1985). Bhide (1993) argues American public policy promotes portfolio fragmentation in order to enhance liquidity but does so at the expense of corporate governance.

Third, history has a range of examples of Americans’ disinclination to tolerate centralized influence by financial entities. Opposition to supra-state financial entities was so strong that the Continental Congress rechartered its central bank as a state bank in Pennsylvania. Populist dislike of strong banks encouraged the veto of the renewal of the second Bank of the United States. When conditions again necessitated a new national bank in 1913, a decentralized Federal Reserve System diffused its power. That America’s politics discourage concentrated power is unsurprising since the Constitution enshrines non-proportional representation in the Senate, which facilitates populist opposition to centralization of financial power.

More recently, a broad range of regulations applying to specific types of institutions limit their monitoring ability. I discuss them in Section 4; here I discuss government-imposed restrictions that affect all institutions. Many restrictions relate to coordinated action by investors. If institutions jointly seek to affect
management when they jointly own more than 5% of the firm, they become a "control group" subject to SEC 13(d) filing requirements. If an institution seeks to coordinate action with other institutions concerning a specific firm, the act of soliciting cooperation can be interpreted as a proxy solicitation subject to SEC 14(a) regulations. According to the legislative sponsor of the proxy rules, they are intended to protect the “legitimate buyer” who buys “strictly for investment purposes and with absolutely no interest in affecting management policy” (quoted in Black, 1990, p. 564). In addition to the SEC, the FTC also has the right to regulate large investments if greater than 10% of the target company. Finally, some states have enacted draconian anti-takeover laws that restrict the voting power and trading opportunities of groups that control more than 20% of a firm (Szewczyk & Tsetsekos, 1992).

Fifth, several agency problems hinder institutional monitoring. A free-rider problem arises when monitors incur the full costs of monitoring for only a pro rata share of gains from monitoring. Effective monitoring is non-excludable – it benefits all shareholders. If monitoring is costly and lowers returns, institutions have an incentive not to contribute to (collective) monitoring activity when they compete on returns.

Assets under management drive institutional compensation. Since monitoring requires effort that will be essentially uncompensated, institutional managers will be disinclined to monitor. Instead, they will focus on increasing assets under management. Past returns largely determine cash inflows (Sirri & Tufano, 1993). If monitoring raises returns immediately, managers would choose to do so, but if the monitoring-return relationship is delayed or ambiguous, managers may not monitor since even slight monitoring costs may be sufficient to drop returns off the high-profile best-returns tables.

Institutional managers may try to increase assets by favoring corporate managers. Armstrong World Industries, the focus of Pennsylvania’s draconian antitakeover statute, moved its 401(k) plan from Vanguard to Fidelity after the latter dropped its opposition to the antitakeover law. So institutional managers may have their loyalties displaced from their beneficiaries to corporate management. Brickley, Lease and Smith (1988, 1994), Pound (1988), and Heard and Sherman (1987) advance this commercial pressure hypothesis that institutions with ties to a firm will face management pressure for support. Van Nuys’ (1993) notes that currying management favor can affect behavior of unaffiliated institutions that want to build a future relationship.

The conflict between institutional investment and management need not be so clear-cut. By not monitoring, institutions may avoid management ire and retain access to information flow about the corporation. Most fiduciaries have an incentive to be informed (or appear to be informed).
If an institution approaches another to suggest the need for joint monitoring action, this may alert the second institutional investor to a previously unnoticed problem at the firm. To the extent that one institution’s monitoring efforts highlight problems at a firm, that institution lowers the stock price and hurts itself. Selling out may be easier and less costly.

Sixth, conglomerates are like institutional investors but with fewer hindrances to monitoring. Conglomerates potentially experience less myopia, weaker diversification needs, weaker liquidity needs, fewer legal constraints and fewer agency problems than institutions. Yet even here, monitoring seems ineffectual – conglomerates discredit indicates they were ultimately unsuccessful at monitoring.1

Finally and importantly, institutional investors may lack sufficient expertise at monitoring corporate management. They may lack expertise at any of the three stages of monitoring I discussed above – effort, influence and results. They may lack the ability to identify good monitoring candidates, may lack the credibility or negotiation skill necessary to get management’s ear, and may lack useful value-enhancing advice or the skill to get management to commit to their own value-enhancing actions. If institutional managers lack expertise in their primary investment management role and systematically underperform the market, one should not expect aptitude in a role ancillary to their primary duty.

2.2. Tobin’s q and Prior Evidence

If one is to examine the association between institutional investment and firm quality, a metric is required. Tobin’s $q$ is frequently a proxy for firm quality (Chung & Jo, 1996; Holderness & Sheehan, 1988; Lang, Stulz & Walking, 1989; Lang & Stulz, 1994; McConnell & Servaes, 1990; Morck, Shleifer & Vishny, 1988). Tobin’s $q$ is the ratio of the marginal product of capital to the required yield on equity; more mundanely, $q$ is the ratio of the market value of the firm to the replacement cost of the firm’s existing assets. It is high when intangible assets raise market values above the cost of physical assets. Because these intangibles include goodwill, extraordinary growth prospects, monopoly power, managerial expertise and intellectual property, Tobin’s $q$ is a good measure of firm quality and managerial performance.

In their survey of corporate governance literature, Shleifer and Vishny (1997) emphasize ownership concentration as the more important of two primary means of overcoming agency problems arising from the separation of ownership and control. Several papers examine the association between significant investors and firm valuation. These studies explicitly assume that monitoring by significant investors
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will produce higher Tobin’s $q$. Morck et al. (1988) find a relationship between Tobin’s $q$ and director ownership; firm value rises then falls then rises again as director ownership increases. While the up-segments are consistent with Jensen and Meckling’s convergent interests hypothesis, Morck et al. believe the down-segment related to moderately high director ownership encouraging managerial entrenchment. McConnell and Servaes (1990) examine the simultaneous effects of blockholders, insiders and institutional owners; they find a concave relationship between insider ownership and $q$, no discernible relationship for 5% blockholders and a positive relationship for institutional owners. Holderness and Sheehan (1988) find no significant difference in $q$ between firms with majority shareholders and firms with no shareholder owning more than 20%. Chung and Jo (1996) find a positive relationship between analyst following and $q$ (relevant since O’Brien & Bhushan (1990) show a positive association between analysts and institutions). In summary, the bulk of this evidence either documents or suggests a positive relation between institutions and Tobin’s $q$.

Note all the previously mentioned studies focus on the long-term steady-state association between firm value and various potential monitors. Other studies examine institutional activity in control situations like takeovers and proxy votes. Bhagat and Jefferies (1991) find nonpositive correlation between institutional ownership and the probability a company will propose antitakeover amendments to its corporate charter. Jarrell and Poulson (1987) find negative abnormal returns at firms proposing antitakeover amendments, but Agrawal and Mandelker (1990) find this effect disappears in companies with high institutional ownership. Brickley, Lease and Smith (1988) show institutional owners vote more actively on antitakeover amendments than other shareholders. Pound (1988) finds the probability that management will prevail in a proxy contest increases as institutional ownership increases. Denis and Serrano (1996) find blockholders increase management turnover in firms that perform poorly after rebuffing a takeover attempt. Kang and Shidasani (1995) show non-routine executive turnover with outsider succession is higher in Japan for firms with large shareholders and with main-bank affiliations; this suggests institutional censuring. The evidence from control votes is generally indicative of institutional monitoring.

A third area of research focuses on coordinated institutional activity against a subset of worst performing firms. Opler and Sokobin (1997) document significant profitability and share price improvements in the pension industry’s Council of Institutional Investors’ watch-list. Nesbit (1994) and Smith (1996) both found small price improvements in firms targeted by the giant CalPERS pension fund. Strickland, Wiles and Zenner (1996) find collective action by small shareholders is effective in enhancing corporate value at poor performing firms. While Wahal (1996) examines several large activist pensions and finds little evidence supporting
effectiveness of their monitoring efforts, the bulk of the evidence from coordinated institutional activity against worst-performers bolsters the idea that institutions enhance shareholder value through their monitoring efforts.

There is also anecdotal evidence of growing institutional activism. The New York State Retirement System annually meets with management of many of the 30 worst performing of their 900 portfolio stocks. CalPERS’ publicizes its annual harangue of 10 poor performing firms; in 1997, they released an exhaustive blueprint of how they want corporate boards structured. Campbell Soup publicly committed to activist monitoring – becoming the first corporate pension fund to do so. Berkshire Hathaway’s Warren Buffet stepped in to serve as non-executive chairman when one portfolio company, Salomon, was caught bid-rigging in 1990. The fact that the growing institutional participation in corporate governance coincided with another large secular trend – large-scale corporate restructurings (including some cases in the 1990s (IBM, Chrysler, GM) where institutions were key restructuring proponents) – suggests institutions influence corporate value-maximization efforts. That is, institutions monitor.

3. INSTITUTIONAL OWNERSHIP AND FIRM VALUE

My results strongly contradict the preponderance of the prior evidence that institutions are effective monitors of corporate managers. I reject institutional monitoring using Granger-style causation tests that show that while higher quality firms do attract institutional investment, institutions do not monitor and firm value subsequently declines. Additionally, my regression results document a negative and significant contemporaneous association between institutional ownership and firm value.

3.1. Data

Data includes all firm-years in the three-way intersection of the CRSP, CompuStat and Spectrum databases. Market data is from CRSP’s daily Master and NMS files. Annual accounting data is from CompuStat’s Active and Research companies on the Primary-Supplementary-Tertiary and Full Coverage Industrial files. Institutional ownership data comes from the Spectrum files; these files, from CDA Investment Technologies, contain institutional ownership information extracted from SEC 13(f) filings. Institutions with trading discretion over more than $100 million are required to file quarterly reports. These filings, mandated under the 1975 revision to the Securities Exchange Acts, collectively represent “a
central depository of historical and current data about (institutional) investment activities,” (Loss & Seligman, 1990, p. 2324) and “have become the single most important source of information available to the public about the holdings of major institutional investors” (Heard & Sherman, 1987, pp. 68, 69). Unlike the vagaries of alternative data sources (e.g. see McConnell & Servaes, 1990; Peles, 1992), CDA is the data-tabulator of 13(f) information for the SEC, and they emphatically claim that Spectrum is comprehensive and complete. For each firm and each quarter, Spectrum provides each institution’s holdings. I attempt a careful matching of firms to avoid errors or omissions (Chan, Jegadeesh & Lakonishok, 1995). The final sample includes approximately 20,000 firm-years in the era 1982–1991.2

Ideally, the time period for measuring changes in institutional ownership and firm quality ought to match firms’ and institutions’ response time to each other and the exogenous causal variables. Because firm quality does not change overnight and because effective monitoring may require time for a relationship between institutional and corporate managers to develop, I use annual increments. Using shorter intervals would increase the noisiness of Tobin’s $q$ as a quality measure.3 An annual horizon is more likely to capture institutions’ association with real, secular quality changes rather than their impact following short-horizon information events. Annual horizons allow institutional trading impact to dissipate (Chan & Lakonishok, 1995); to the extent that any residual institutional trading impact, it biases results in favor of monitoring. However, using very long horizons blurs the distinction between changes and levels and reduces the ability to distinguish causal and spurious contemporaneous association, so annual horizons seem best.

I measure each firm’s year-end $q$ using the current “best practice” in academic research. Here

$$q = \frac{MV(\text{common}) + MV(\text{preferred}) + MV(\text{debt})}{RV(\text{inventory}) + RV(\text{PP&E}) + BV(\text{otherassets})}$$  \hspace{1cm} (1)$$

where $MV(\text{common})$ indicates the market value operator, $BV(\text{otherassets})$ indicates book value, $RV(\text{inventory})$ indicates replacement value and “PP&E” is property, plant and equipment. CRSP is used for the common stock market value. I compute market value of debt using the Perfect and Wiles (1994) version of the method of Lindenberg and Ross (“L&R,” 1981) where the current long-term debt of the firm is re-valued using the change in AA long-term interest rates from time of issuance to the valuation date. I use the L&R method to compute market value of preferred stock where preferred dividends are capitalized as a perpetuity using year-end AA preferred yields. Where available, I use CompuStat’s values for LIFO Reserve to adjust inventories to replacement values; generally accepted accounting principles (GAAP) requires footnote disclosure of this difference between FIFO and LIFO inventory values. Finally, I use the method of Lewellen...
and Badrinath (1997) to adjust property, plant and equipment to replacement values; they convincingly show their method of inflating past capital expenditures gives more accurate estimates than L&R.

3.2. Preliminary (Contemporaneous) Results

In all contemporaneous models, the dependent variable is \( \ln(q) \). The institutional ownership variable is simply number of shares held by all institutions divided by total shares outstanding.

Along with the level of institutional ownership, I include additional independent variables. These control variables are traditional explanatory factors for cross-sectional variation in Tobin’s \( q \). Given the size and flux of the Tobin’s \( q \) literature, there is no uniform specification of these additional explanatory factors; however, a review of prior work reveals consistent factor themes. I use these themes to motivate a specification below – alternate specifications of these factors are generally suppressed, but some are examined as a robustness check. Summary statistics are in Table 1.

Since economic earnings generate the cash that ultimately flows to shareholders, firm profitability has a significant impact on valuation. Chung and Jo (1996) and Yermack (1996) find it associated with higher \( q \). I measure profitability as return on assets and compute it as operating income before depreciation over total assets.

Firm value also depends on future growth and investment opportunities (Gordon, 1962; Smith & Watts, 1992; Williams, 1938). These growth opportunities reflect

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>5th Percentile</th>
<th>Median</th>
<th>95th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin’s ( q )</td>
<td>1.317</td>
<td>1.539</td>
<td>0.232</td>
<td>0.956</td>
<td>3.248</td>
</tr>
<tr>
<td>CapX/Sales</td>
<td>0.213</td>
<td>9.404</td>
<td>0.007</td>
<td>0.051</td>
<td>0.352</td>
</tr>
<tr>
<td>Profitability</td>
<td>0.131</td>
<td>0.124</td>
<td>-0.003</td>
<td>0.135</td>
<td>0.296</td>
</tr>
<tr>
<td>Size (in $million)</td>
<td>768</td>
<td>2.814</td>
<td>13</td>
<td>126</td>
<td>3.236</td>
</tr>
<tr>
<td>Leverage</td>
<td>0.228</td>
<td>0.182</td>
<td>0.000</td>
<td>0.204</td>
<td>0.554</td>
</tr>
<tr>
<td>Institutional ownership</td>
<td>0.298</td>
<td>0.202</td>
<td>0.023</td>
<td>0.269</td>
<td>0.661</td>
</tr>
</tbody>
</table>

Note: The sample consists of all firms in the intersection of the CRSP, CompuStat and Spectrum databases for the years 1982–1991. The sample has 19,359 firm-year observations. CapX/Sales is normalized capital expenditures and reflects future growth opportunities and intangible assets. Profitability is measured by return on assets. Size is the logarithm of capitalization. Leverage is the debt-to-assets ratio. Institutional ownership is the number of shares held by institutional investors divided by total shares outstanding.
an intangible asset that high quality firms have developed. From a range of possible specifications of growth and investment opportunities, I choose capital expenditures normalized by sales (Yermack, 1996). Note that unlike alternate metrics for intangible growth prospects, capital expenditures is a standard financial statement line item reported by almost every firm (91% of firm-years in my sample).5 More future growth and investment opportunities should be associated with higher measured firm quality.

I control for firm capitalization with the logarithm of year-end equity market value. Institutions concentrate their investments in larger companies, so including size avoids having the level of institutional ownership gain spurious significance by serving as a size proxy. The strong correlation between institutional investment and firm size (O’Brien & Bhushan, 1990) underscores the importance of using control variables to reduce the risk of model misspecification due to missing variables.6

Financial leverage can also affect firm quality and valuation. In studies examining ownership structure and Tobin’s q, Morck et al. (1988) and McConnell and Servaes (1990) both include the ratio of debt to total assets as an independent explanatory variable. (Lang, Ofek & Stulz (1996) document the complexities of the leverage-quality relationship.) I control for leverage using the debt-to-assets ratio. Institutional investment in a stock may interact with financial leverage or some other risk measure since some institutions are subject to prudent-investment restrictions.

I examine the contemporaneous relationship first because it lays the groundwork for the causal analysis. It is simpler and more directly related to the prior literature. Table 2 presents regression coefficient estimates of the association between Tobin’s q and the percent of shares outstanding held by institutional investors under several specifications. The estimated coefficient for institutional ownership is consistently negative and strongly statistically significant.

The Simple Model uses OLS and is included as a preliminary baseline. All coefficient estimates are significant and signed as expected – normalized capital expenditures, profitability and capitalization are positive. The observed sign of the coefficient for size measures is not consistent across the Tobin’s q literature; however, it is also positive in specifications most similar to mine (e.g. Yermack, 1996). Leverage’s coefficient is negative (Morck et al., 1988). Note that parameter coefficients in the Simple Model are consistent with (unreported) estimates from an even simpler model that includes the control variables but excludes a measure of institutional ownership. The coefficient of determination for the Simple Model (6.2%) is notably larger than in the simpler sans-institutions model (4.3%).

These results strongly contradict the preponderance of the prior evidence. Contemporaneous regression results document an unambiguous significant negative association between institutional ownership and firm quality.
Table 2. Contemporaneous Relationship Regressions.

<table>
<thead>
<tr>
<th>Model</th>
<th>Simple</th>
<th>Classic</th>
<th>Fixed Effects</th>
<th>Time Series Aggregation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CapX/Sales</td>
<td>0.003</td>
<td>0.003</td>
<td>0.0004</td>
<td>0.160</td>
</tr>
<tr>
<td></td>
<td>(6.46)</td>
<td>(6.42)</td>
<td>(1.99)</td>
<td>(3.75)</td>
</tr>
<tr>
<td>Profitability</td>
<td>0.569</td>
<td>0.473</td>
<td>0.428</td>
<td>0.824</td>
</tr>
<tr>
<td></td>
<td>(16.25)</td>
<td>(14.74)</td>
<td>(15.38)</td>
<td>(3.04)</td>
</tr>
<tr>
<td>Size</td>
<td>0.052</td>
<td>0.091</td>
<td>0.407</td>
<td>0.045</td>
</tr>
<tr>
<td></td>
<td>(16.95)</td>
<td>(29.45)</td>
<td>(83.09)</td>
<td>(6.88)</td>
</tr>
<tr>
<td>Leverage</td>
<td>−0.502</td>
<td>−0.381</td>
<td>0.041</td>
<td>−0.548</td>
</tr>
<tr>
<td></td>
<td>(−21.53)</td>
<td>(−16.80)</td>
<td>(1.97)</td>
<td>(−4.90)</td>
</tr>
<tr>
<td>Institutional Ownership</td>
<td>−0.512</td>
<td>−0.697</td>
<td>−0.871</td>
<td>−0.461</td>
</tr>
<tr>
<td></td>
<td>(−19.88)</td>
<td>(−27.76)</td>
<td>(−41.87)</td>
<td>(−10.73)</td>
</tr>
<tr>
<td>R²</td>
<td>0.062</td>
<td>0.27</td>
<td>0.89</td>
<td>nmf</td>
</tr>
</tbody>
</table>

Note: Regression coefficient estimates of the association between Tobin’s q and the percent of shares outstanding held by institutional investors. The sample consists of all firms in the intersection of the CRSP, Compustat and Spectrum databases for the years 1982–1991. The sample has 19,359 firm-year observations. In all models, the dependent variable is the natural logarithm of an estimate of Tobin’s q. The Simple Model presents ordinary least squares estimates. The Classic Model includes 2 independent series of indicator (dummy) variables – for each year and for each industry (based on 2-digit CompuStat SIC codes). The Fixed Effects Model assigns a unique intercept to each firm. Time Series Aggregation regressions are based loosely on the methods of Fama and MacBeth (1973); this Model involves separate simple ordinary least squares regressions each period then computes observation-weighted means and t-statistics based on the distribution of the by-period parameter estimates. Parenthetical values are t-statistics.

CapX/Sales is normalized capital expenditures and reflects future growth opportunities and intangible assets. Profitability is measured by return on assets. Size is the logarithm of capitalization. Leverage is the debt-to-assets ratio. Institutional ownership is the number of shares held by institutional investors divided by total shares outstanding. Parenthetical values are t-statistics.

3.3. Causation and the Endogenous Relationship

Heretofore in this paper, the premise has been that institutional investors’ monitoring activity affects firm quality. Conversely, firm quality may attract institutional ownership. The prudence literature (e.g. Aggawaral & Rao, 1990; Badrinarth et al., 1989, 1995, 1996; Del Guercio, 1996) supports this view, but any investor might prefer to invest in high-quality firms. Such bi-directional causation mandates examining the time series to see beyond the endogenous contemporaneous relationship. I estimate Granger causation models. Panel A of Table 3 shows that quality improvements attract institutions, but institutions subsequently preside over a valuation decline. The panel presents regression estimates of the association between changes in institutional ownership and changes in abnormal Tobin’s q. Abnormal Tobin’s q is the residual from the regression of Tobin’s q on the control variables used in the Table 2.
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Table 3. Causation Regressions for Abnormal $q$.

Panel A – Unconditional Change-Granger Causation Result

Attract?: $\Delta %IO_t = 0.021 + 0.011 \Delta \ln Q_t^* - 0.240 \Delta %IO_{t-1}$

Monitor?: $\Delta \ln Q_t^* = -0.022 - 0.269 - 0.240 \Delta %IO_{t-1}$

Panel B – Conditional Change-Granger Causation Result

Attract?: $\Delta %IO_t = 0.048 + 0.014 \Delta \ln Q_t^* - 0.078 \Delta %IO_{t-1}$

Monitor?: $\Delta \ln Q_t^* = -0.028 - 0.158 \Delta %IO_{t-1} - 0.147 \Delta \ln Q_t^* - 0.214 \Delta %IO_{t-1}$

Panel C – Autocorrelation-corrected Change-Granger Causation Result

Attract?: $\Delta %IO_t = 0.024 + 0.010 \Delta \ln Q_t^* - 0.091 \Delta %IO_{t-1}$

Monitor?: $\Delta \ln Q_t^* = -0.022 - 0.216 \Delta %IO_{t-1} - 0.158 \Delta \ln Q_t^* - 0.176 \Delta %IO_{t-1}$

Panel D – Combination Conditional and Autocorrelation-corrected Change-Granger Causation Result

Attract?: $\Delta %IO_t = 0.048 + 0.011 \Delta \ln Q_t^* - 0.059 \Delta %IO_{t-1} - 0.074 \Delta %IO_{t-1}$

Monitor?: $\Delta \ln Q_t^* = -0.038 - 0.147 \Delta %IO_{t-1} - 0.135 \Delta \ln Q_t^* - 0.131 \Delta %IO_{t-1}$

Note: Regression estimates of the causal relationship between Tobin’s $q$ and the percent of shares outstanding held by institutional investors. Below, $Q_t^*$ is the residual from the regression of Tobin’s $q$, as computed using the current “best practices” in academic research (as described in the text; these methods approximate those of Lewellen & Badrinath, 1997), on the control variables used in Table 2 – normalized capital expenditures, profitability, capitalization and leverage. Obviously, institutional ownership is excluded from this unreported, first stage regression. Percentage Institutional Ownership is the number of shares held by institutional investors divided by total shares outstanding at year’s end. Each pair of equations is estimated jointly using Zellner’s JGLS methodology. The $\Delta$ operator indicates changes over the relevant period. Parenthetical values are $t$-statistics.

contemporaneous regressions – normalized capital expenditures, profitability, capitalization and leverage. Residuals focus the analysis on the impact of institutions after accommodating other explanatory factors; obviously, institutional ownership is excluded from this first stage regression. Estimates are calculated using joint generalized least squares (JGLS; i.e. Zellner’s (1962) seemingly unrelated regressions approach). JGLS allows better estimation of the parameter coefficients by incorporating cross-correlations between the error terms of each pair of equations; JGLS is a systems-of-equations approach that accommodates the endogeneity problem.

Lagged changes in abnormal $q$ are associated with subsequent increases in institutional ownership ($\gamma_4$ is positive in Eq. (2)). I interpret this result as quality
improvements attracting institutional investment. Lagged changes in institutional ownership are associated with subsequent declines in quality ($\gamma_M$ is negative in Eq. (3)). I interpret this result as institutions owning firms that experience quality and valuation declines. This signifies that institutions are ineffective as monitors of corporate management.

$$\Delta IO_{it} = \alpha_A + \gamma_A \Delta q_{i,t-1} + u_{Ait} \quad (2)$$

$$\Delta q_{it} = \alpha_M + \gamma_M \Delta IO_{i,t-1} + u_{Mit} \quad (3)$$

The change-Granger approach to causation offers advantages over a traditional Granger-causation test. It better accommodates two known errors-in-variables problems with this type of data. First, calculated $q$ is a noisy values correlated with an immeasurable “true quality.” The mismeasurement is due to the computation method and is likely long-lived and relatively stable, so differencing the data will diminish the error. Second, the level of institutional ownership is also noisy. Because Spectrum relies on SEC 13(f) filing, my percent institutional ownership variable excludes: (i) small institutions not required to file; (ii) the tiniest holdings by large filing institutions; and (iii) foreign and other exempt institutions. Further, with the data aggregated from literally thousands of sources, systematic and random recording errors will arise. The differencing approach to causation will mitigate the effect of most of these errors. By reducing both errors, the power of my test increases. Further, Perfect and Wiles (1994) find changes in $q$ are less susceptible to the idiosyncrasies of how $q$ is computed than are levels of $q$.

3.4. Robustness

The causal relation result is robust. First, traditional Granger-causation tests (using levels rather than changes) also support the absence of institutional monitoring. Second, the results hold for a conditional version of the unconditional regressions given in Eqs (2) and (3); the conditional test adds lagged levels of the left-hand side variable.

$$\Delta IO_{it} = \alpha_A + \gamma_A \Delta q_{i,t-1} + \lambda_A IO_{i,t-1} + u_{Ait} \quad (4)$$

$$\Delta q_{it} = \alpha_M + \gamma_M \Delta IO_{i,t-1} + \lambda_M q_{i,t-1} + u_{Mit} \quad (5)$$

The conditional version assures that significant values for $\gamma_A$ and $\gamma_M$ in the unconditional regressions are not simply reflecting a spurious association between the lagged independent variable and lagged values of the left-hand side variable.
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(which are known to be related from Table 2); these results are presented in Panel B of Table 3. The sign and significance of the conditional results are unchanged – quality still attracts institutions, and institutions still preside over a subsequent value decline.

Further, the time-series behavior of Tobin’s q and the level of institutional ownership are not responsible for the causation results. First, the relation between q and institutional investment is not a spurious association of two upward-trending variables; indeed, the long bull market did not inflate q – assets-in-place also rose. Further, Dickie-Fuller tau-statistics unambiguously reject the null hypothesis of a unit root for both series. Second, ARMA effects do not change the association between q and institutional ownership. Box and Jenkins (1976) heuristic procedures using correlograms of both a subset of individual firms and aggregate values do not suggest any significant ARIMA components. Overfitting tests also reject the presence of ARMA components. However, the time series is short, so statistical power is low. Because the AR(1) model was the best recommended of the overfitted models considered and because AR(1) is particularly problematic for my interpretation of the change-Granger tests, I re-examine those causation tests in a way that accommodates first-order autoregression. Here, the change-Granger tests are conditional on lagged changes in the left-hand side variable.

\[ \Delta IO_{it} = \alpha_A + \gamma_A \Delta q_{it-1} + \lambda_A \Delta IO_{i,t-1} + u_{Ait} \]  

\[ \Delta q_{it} = \alpha_M + \gamma_M \Delta IO_{i,t-1} + \lambda_M \Delta q_{i,t-1} + u_{Mit} \]  

Autocorrelation will result in significant values of \( \lambda_A \) and \( \lambda_M \). The results presented in Panel C of Table 3 do find autocorrelation, but the sign and significance of the \( \gamma \) parameters remains unchanged. Reversion (or persistence) of \( q \) is not driving the result; again, the attraction and non-monitoring results hold.

Note further that these causation results hold when industry fixed-effects are included (the single intercept of an ordinary least squares regression is replaced with an intercept unique to each industry). Doing so absorbs industry-specific variations not captured by the independent variables (Mundlak, 1961). Hausman and Taylor (1981) state that the fixed-effects framework represents a common, unbiased method of controlling for omitted variables in a panel data set. Allowing by-industry variation reflects the plausible hypothesis of variation in firm valuation across industry sectors; it also accommodates industry-selection trends by institutions.

The foregoing results, across the three primary specifications, hold whether abnormal q or raw q is used; see Table 4 for estimates with raw q (recall abnormal q is the residual from regressing q on the control variables). This means the
Table 4. Causation Regressions for Ordinary $q$.

Panel A – Unconditional Change-Granger Causation Result
Attract?: $\Delta \%IO_t = 0.021 + 0.002 \Delta \ln Q_{t-1}$

Monitor?: $\Delta \ln Q_t = -0.053 -0.373 \Delta \%IO_{t-1}$

Panel B – Conditional Change-Granger Causation Result
Attract?: $\Delta \%IO_t = 0.047 + 0.003 \Delta \ln Q_{t-1} - 0.077 \%IO_{t-1}$

Monitor?: $\Delta \ln Q_t = 0.235 -0.139 \Delta \%IO_{t-1} - 0.240 \ln Q_{t-1}$

Panel C – Autocorrelation-corrected Change-Granger Causation Result
Attract?: $\Delta \%IO_t = 0.023 + 0.002 \Delta \ln Q_{t-1} - 0.088 \Delta \%IO_{t-1}$

Monitor?: $\Delta \ln Q_t^* = -0.060 -0.354 \Delta \%IO_{t-1} - 0.144 \ln Q_{t-1}^*$

Note: Regression estimates of the causal relationship between Tobin’s $q$ and the percent of shares outstanding held by institutional investors. Below, $Q_t \equiv$ Tobin’s $q$ and $\%IO \equiv$ percentage Institutional Ownership. Percentage Institutional Ownership is the number of shares held by institutional investors divided by total shares outstanding at year’s end. Each pair of equations is estimated jointly using Zellner’s JGLS methodology. The $\Delta$ operator indicates changes over the relevant period. Parenthetical values are $t$-statistics.

non-monitoring findings are more robust because they do not require incorporation of specific control variables.

Substantially similar implications may be drawn from a model that combines the features of the conditional and autocorrelation-corrected models – that is, both lagged changes and levels of the independent variable. See Panel D of Table 3.

Because the causal models rely heavily on changes in the variables of interest, it is possible that no-change observations ($\Delta z = 0$) may be influential and could drive inferences. Inspection of the firm-level time series of Tobin’s $q$ and percentage institutional ownership should mitigate concerns – both series are almost universally dynamic. As a robustness check, the conditional causal model is estimated without zero-change observations. Results are qualitatively identical to the full-sample results.

As noted in Section 3.1, annual data is preferable for analyzing monitoring, but quarterly analysis allows a richer characterization of the time-series relationship between institutional ownership and $q$. It also affords more data. Quarterly analysis (available upon request) supports the conclusion that that quality firms attract institutions but institutions do not monitor and firm value declines.

The contemporaneous relationship is also robust. In Table 2, the Classic model includes indicator variables for each year and industry in lieu of the Simple
Model’s single intercept. It is classic in the sense that most of the relevant literature uses such indicators. Allowing for intertemporal and by-industry variation reflects the plausible hypothesis of variation in firm quality across these dimensions; it also accommodates intertemporal and industry-selection trends by institutions (see Hirsh & Seaks, 1993; Morck et al., 1988). As would be expected, the model $R^2$ rises dramatically; the value, 27%, is similar to other studies. Parameter values and significance levels are similar to those in the Simple Model. Again, institutional ownership is negatively and significantly associated with firm quality.

Two additional models are included in Table 2 as further contemporaneous robustness checks. First, I estimate a Fixed Effects Model where an intercept unique to each firm replaces the single OLS intercept. As with the JGLS fixed effects approach, this absorbs firm-specific variations not captured by the independent variables. Institutional ownership is negatively and significantly associated with firm quality.9 Second, I conduct Time Series Aggregation regressions based loosely on the methods of Fama and MacBeth (1973). This approach addresses concerns about time-series vs. cross-sectional effects. While the Classic Model allows the intercept to vary by year, this approach allows all parameters to vary by year. Specifically, I compute a separate Simple Model cross-sectional regression each year. I then compute mean coefficient values and $t$-statistics using the time-series of the coefficient estimates. Since there are more observations later, variance changes over time; to control for this heteroskedasticity, I weight the mean results and $t$-statistics by number of observations. As before, the parameter estimates all retain their signs and all remain significant. These Time-Series Aggregation results are particularly incriminating against claims that the Classic Model results are due to simultaneous secular trends – increasing institutional ownership and increasing stock prices. In fact, Tobin’s $q$ has not enjoyed anything like a monotonic rise over the sample period. While the market has risen dramatically in this era (affecting $q$’s numerator), so too have total asset values (the denominator).

The contemporaneous results are robust to other methodological variations that accommodate different potential statistical problems. First, the parameter coefficients in the contemporaneous Simple Model retain their sign and significance when each control variable is excluded in turn, so, the relation between institutional ownership and quality is not due to spurious, or non-linear, correlation between the level of institutional ownership and a control variable. As noted, the relationship is robust to numerous alternate specifications of control variables. Third, influential observations or outliers are not responsible for the results. To test for robustness to extreme observations, I trim the extreme 10% of each year’s observations for Tobin’s $q$, institutional ownership and the control variables; these trimmed results are qualitatively the same as the results in Table 2.10 Fourth, my results are robust to including various measures of liquidity as additional control variables.
Consistent with the Amihud and Mendelson (1988) argument that illiquid stocks have lower valuations, Capozza and Seguin (1998) find that capital market liquidity significantly affects \( q \) in their single-industry sample. In my (all-industries) sample, liquidity does not affect my conclusions; the relation between institutional ownership and \( q \) stays negative despite the addition of liquidity variables like return variance, volume, inverse price or bid-ask spread. Fifth, non-parametric tests confirm the negative relation between institutional ownership and \( q \). Finally, note that the negative contemporaneous relation holds in the univariate case.

3.5. Economic Significance

The impact of institutional ownership is significant, both econometrically and economically: First, the semi-log specification means a 25% increase in the percent of a firm held by institutional investors is associated, \( ceteris paribus \), with a 17% decline in \( q \). In dollar terms, a 5% increase in the level of institutional ownership is associated with a $35 million decline in value for a firm with my sample’s mean of $768 million. Second, Tobin’s \( q \) is leptokurtic, so it assumes “off-peak” values for smaller changes in institutional ownership than if it were distributed normally. Third, to assure the effect of institutional ownership has market-wide significance, I re-estimate the three change-Granger models using capitalization-weighted least squares. This value weighting produces the same result as equal weighting – evidence of institutional attraction but no support for institutional monitoring. Also, value-weighting the contemporaneous Classic Model produces the same result as equal-weighting – the estimated coefficient for the level of institutional investment remains negative and strongly significant. Finally, I assure there are no non-linearities that affect economic significance.

3.6. Relation to Prior Research

Sections 1 and 2 note several distinctions from prior research. The change-Granger framework is a methodological advance for institutional monitoring research. The extensions in Sections 4 and 5 of analyzing institutional type and, more significantly, institutional characteristics represents a further enhancement over prior work. In order to gain insight into institutions’ on-going monitoring efforts, this study, by design, uses data that is comprehensive – across firms and time. This helps avoid misattribution, time-series problems and selection-biases that affected prior work.

Because McConnell and Servaes (1990) is the seminal work relating firm valuation and institutional owners for a broad sample of firms, I address it directly.
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Note first that McConnell and Servaes is only concerned with the contemporaneous relationship between institutional ownership and firm value – not the causal one.

Many researchers citing McConnell and Servaes (1990) choose to ignore the fact that McConnell and Servaes find a positive relation between Tobin’s $q$ and institutional ownership but no relation for 5% blockholders. Because most such blockholders could simply be larger institutional investors, this substantially weakens the institutional monitoring protagonists’ case. McConnell and Servaes are simply documenting a non-linearity in institutional ownership; interestingly the institutions one might expect to be effective monitors are not – while smaller institutions are.

McConnell and Servaes use poor-quality data. While they examine both 1976 and 1986 data, their results for institutional ownership in 1976 are less relevant since they document in their Note 3 that their data source, Value Line, limited coverage of institutions to only investment companies in 1976 but subsequently covered all institutional investors. Further, the footnote suggests some ambiguity on the part of Value Line as to what the data actually represents. Kole (1995) reports Value Line does not provide an ownership measure that is consistent across firms. Anderson and Lee (1997) also show Value Line is a relatively poor data source for ownership research. I use more comprehensive data than prior works which relied on limited time series (1 or 2 years) and cross-sections (500–1000 firms) of data. In contrast, I have an extensive time series and a broader intra-year sample.

McConnell and Servaes (1990) jointly test institutional and insider ownership data. While reasonable for examining the partial impact of the two groups or considering monitoring in general, joint tests do not address institutional monitoring directly. Insiders and institutions have different incentives to monitor; Van Nuys (1993) notes institutional investors’ opposition to antitakeover charter amendments increases as managerial holdings rise. I exclude potentially confounding insider ownership data.

While the results already documented are at odds with McConnell and Servaes, I am able to replicate results consistent with them. My evidence suggests their parameter estimates may be sample- and/or specification-dependent.

If I follow McConnell and Servaes and segregate 5% blockholders from other institutional owners as well as restrict my sample to NYSE-AmEx firms in 1986 and use their model specifications, I also find the association between Tobin’s $q$ and institutional ownership is positive. However, expanding the sample reverses the results – producing results consistent with my Table 2. This is true both with and without their set of control variables (regressions comparable to their models 2.4 and 1.7). See Models 1–4 of Table 5.

Also note that if one adds a profitability measure to their set of control variables, their result again reverses; see Model 5 of Table 5. This suggests an
### Table 5. Relation to Prior Research.

<table>
<thead>
<tr>
<th>Model</th>
<th>1</th>
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<th>3</th>
<th>4</th>
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<td>M&amp;S Base Controls + ROA</td>
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<td>–0.038 (–0.76)</td>
<td>0.454 (2.06)</td>
<td>–0.400 (–4.25)</td>
<td>–0.070 (–0.36)</td>
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<td>–1.513 (–9.60)</td>
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<td>249</td>
<td>4129</td>
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**Note:** Regression coefficient estimates of the association between Tobin’s q and the percent of shares outstanding held by institutional investors under the McConnell and Servaes (1990) specifications and sample restrictions. Control variables include their specifications of advertising expenditure, R&D expenditure and debt. In Model 5, ROA is return on assets. Institutional ownership is the number of shares held by institutional investors divided by total shares outstanding. In this table only, however, it excludes holdings by 5% blockholders, which are included separately. Parenthetical values are t-statistics.
omitted-variable bias. Profitability and firm quality are positively associated. It is also plausible that institutional owners are attracted by greater profitability; in my sample, I find a significant positive correlation between institutional ownership and return on assets as well as a significant positive correlation between return on assets and Tobin’s $q$. Others researchers include profitability measures; see Yermack (1996) and Chung and Jo (1996).

4. BY-TYPE VARIATION

Institutions are not a monolithic body. The incentives, culture and regulations governing banks, insurance companies, mutual funds, investment advisors, pensions and endowments vary widely. Here I discuss each in turn. The legislative and regulatory review is based in part on several mammoth law review articles – each over eighty pages long. As Black (1990) notes, the length is part of the message (also see Coffee, 1991; Roe, 1990). The range of regulatory and statutory barriers to institutional monitoring is large and the cumulative effect larger still.

4.1. The Influence of Institutional Type

Banks have long been limited from owning stock. The National Bank Act of 1863 precluded control of industrial corporations; in 1892, the Supreme Court ruled banks could not own any stock. The Glass-Steagall Act of 1933 separated banks from their underwriting subsidiaries. The Bank Holding Company Act of 1956 limits its namesake entities to holding less than 5% of a company’s voting stock. Bank trust departments are also constrained with respect to stock ownership. First, prudence standards encourage extreme diversification at the level of the individual trust. Trust law in the sample period is such that trustees are liable for money lost of each investment; winners cannot be netted against losers. Prudence requirements do affect investment selection; empirically, prudence-constrained investors prefer low market-to-book stocks (Del Guercio, 1996). Second, OCC regulations limit investments in a firm to 10% of the bank’s aggregate trust investments. Third, trust clients may select banks as investment managers for stability not excitement; a noisy, activist posture may be the antithesis of what trust clients want. Banks’ large debt portfolios could aid monitoring except firewalls separate lending and trust activity; any shared monitoring activity would be strictly informal. Further, prudence requirements might limit banks’ trust investments to the larger, more established corporations than the typical spectrum of lending customers, so co-monitoring opportunities would be reduced. Finally, banks’ corporate borrowers
are their key customers and may dislike activist monitors.\textsuperscript{15} I expect banks to be attracted to nominally prudent, low $q$ stocks and to be disinclined to monitor.

While not fiduciaries like most other institutions (Van Nuys, 1993), insurance companies also face serious restrictions on stock ownership. Both life and property insurers are substantially subject to New York rules (58 and 82\%, respectively); other states have comparable restrictions, so New York regulations are a norm. Position constraints limit insurers' monitoring ability. Life insurers are limited to 20\% of assets in stock with no more than 2\% in one stock; property insurers cannot control another company. Further, equity control of a corporation automatically subordinates (in bankruptcy) even nominally senior debt; since most insurance assets are debt, this discourages control. Finally, corporate insurees may dislike activist monitoring and take their insurance business to a less vociferous insurer (again, see Brickley, Lease & Smith, 1988, 1994; Van Nuys, 1993). How will insurers, forced to invest primarily in non-equities, invest their equity allocation? The conservatism of the bulk of the portfolio could carry over to stocks; alternatively, a very aggressive equity posture would adjust the portfolio risk to where it would be absent regulation. Given the growing market among constrained-to-debt investors for debt products with enhanced, equity-like features, I speculate that insurer's equity allocation will be aggressively invested in high $q$, growth companies. Because they have a longer investment horizon and are subject to fewer barriers than mutual funds and banks, I expect insurers to be attracted to higher $q$ companies and to be somewhat better monitors.

The 1934 Senate Pecora Report sought to separate investment-oriented mutual funds from management-oriented holding companies and included strongly worded language that Congress must “prevent the diversion of these (mutual funds) from their normal channels of diversified investment to the abnormal avenues of control of industry.” Pecora led to the Investment Company Act of 1940, which requires diversified mutual funds to limit 75\% of their portfolio to positions smaller than 5\% of assets. The Pecora Report asserts that concentrated financial control serves no productive function but rather perverts the use of the controlled companies and is detrimental to the public welfare. Tax law also limits mutual funds since failure to meet IRS provisions eliminates their ability to pass income through untaxed; half of the portfolio must be in positions of less than 5\% of the fund and 10\% of the owned firm. When an investment bank or its affiliate manages a mutual fund, 5\% ownership precludes the bank from doing business with the corporation. When Peter Lynch joined W. R. Grace’s board, Fidelity felt compelled to have all of its funds divest Grace in keeping with the spirit of the 1940 Act seeking complete separation of mutual fund management and corporate governance. Fund compensation arrangements, based largely on assets managed, create an anti-monitoring agency problem. Monitoring entails costs that
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affect performance; performance drives inflows (and thus assets); there are huge rewards to top performers (Chevalier & Ellison, 1999; Hendricks et al., 1993; Sirri & Tufano, 1993). Any monitoring costs could drop returns out of the top performers. Additionally, growth in 401(k) investing increases corporate influence over mutual funds. Open-ended mutual funds embrace investor liquidity by design – more than any other institution – so one expects small positions and little monitoring for the reasons noted in the introduction. Indeed, funds’ liquidity requirements may make corporate management loath to begin discourse with them. While there have been limited announcements of investment company activism (e.g. “Fidelity is freeing its funds to be assertive investors” [New York Times, 12/5/89]), the barriers to mutual fund monitoring are high. Are funds attracted to high market-to-book stocks? While there are multitudes of mutual fund investment styles, the industry has been accused of “style-drift.” There are strong incentives for mutual funds to drift toward high q growth stocks. Window-dressing and managerial labor market concerns induce investment in stocks that give the appearance of investment skill; these are high q stocks. I expect mutual funds to be attracted to high q companies but unable to effectively monitor because of the many regulatory and structural hurdles.

The investment advisor category primarily consists of registered investment advisor (RIA) fiduciaries who direct others’ investments. RIA clients include wealthy individuals, trusts, public and private pensions, endowments, etc. (To the extent the portfolios managed by RIAs reflect these investors, see the descriptions of the other categories.) Investment advisors are more likely to be hired for a specific investment style than other institutions; deviations are more quickly detected and punished (given the greater sophistication of their clients and those clients’ greater ability to hire pension consultants and other monitors). These pension consultants and a quarterly analysis horizon may lead to a myopic perspective for investment advisors; myopia discourages monitoring. The investment advisor category in Spectrum also includes investment banks that cannot conduct lucrative underwriting for firms where they control more than 5% of the stock. I expect investment advisors to have a greater range of investment styles (i.e. be attracted to a range of q); for the reasons outlined above and the reasons relating to RIA clients like pensions and endowments, I expect them to be ineffective as monitors.

For pensions, ERISA virtually requires diversification and subjects managers to the “prudent expert” standard. With respect to portfolio management, the prudent expert rule is essentially behavior dictated by modern finance texts. With respect to monitoring or exercising corporate governance, Roe (1990), Coffee (1991) and Black (1990) raise the prospect of requiring expertise of pension managers rather than a lower “sound business judgment” standard. Faced with this ill-defined standard, pension managers may demure from attempting management monitoring
(rather than face personal liability). There are also cultural barriers to monitoring; senior corporate managers probably dislike institutional monitoring and likely view unfavorably their pension-administering subordinates’ monitoring activities. To the extent that public pensions are not subject to this constraint, they will be more likely to monitor (public pensions are unique among all institutional owners in this respect). Department of Labor (DoL) regulations require voting of proxies in the interests of the pension plan beneficiaries (Albert, 1994); anomalously, DoL explicitly discourages pensions from initiating proxy proposals.

Endowments are unique in that they have an infinite horizon and the goal of preserving purchasing power is usually very explicit. Beneficiaries (universities and grant recipients) may expect a smooth or non-decreasing payout; further, many make payouts of 5% of assets (Kennedy, 1996). The focus on preserving purchasing power and smoothing payouts may encourage investing in value-oriented, low $q$ stocks. Endowments may be disinclined to monitor since they need the goodwill of wealthy individuals and corporate donors; such donors likely view shareholder activism unfavorably. Often universities have on-going links with companies (e.g. Rochester-Kodak & Emory-Coca-Cola) and are unlikely to be critical of management. Further, donors are likely well-represented in the endowments’ own governance structure. Gift terms may mandate holding a stock indefinitely, so both monitoring and selling poor performers are not possible. Finally, there may be little financial incentive for endowment managers to monitor; John Neff managed the University of Pennsylvania’s endowment _pro bono._

Indexing’s relationship to $q$ and monitoring is considered under pensions and endowments since these investors seem especially prone to index. The same points would apply to an index mutual fund or bank trust. As indexing grows, demand for index stocks becomes motivated by a powerful factor other than relative investment worth. So, index membership might reasonably be included as a factor attracting institutions. Index membership and monitoring are a more complex association. Both the high visibility of index members and the long-term orientation of index investment suggest more monitoring. Monitoring may seem the only way to enhance returns in an indexed portfolio. However, low expenses and transaction costs are a key motivation for indexing; with index mutual funds charging less than twenty basis points in expenses (and non-retail index pools cheaper), there is little room for costly monitoring. Indeed expense levels drive competition among index funds, so no monitoring seems the equilibrium outcome. If institutions are passively selecting stocks, their formulaic approach to investment also draws criticism; executives could view passive institutions as other than “real” shareholders who bought after research led to an informed position on a company’s plans and prospects. Indexers’ passivity makes them seem peripheral shareholders less entitled to a voice in corporate governance.
As with investment advisors, I expect pensions, endowments and foundations to have a greater range of investment styles (more dispersion in \( q \)). Although there are barriers to monitoring, pensions at least have two major factors encouraging monitoring. First, ERISA requires some activism. Second, public pension funds, uniquely among institutions, are not even indirectly answerable to corporate management.

Incentives for and barriers to monitoring across institutional type differ over a number of dimensions – prudence requirements, concentration regulations, management co-option, liquidity demands, etc. Developing clear-cut implications is difficult; however, some reasonable priors are possible. The well-documented impact of banks’ prudence requirements strongly suggests attraction to low \( q \) stocks. Pension and endowments, and possibly insurers, have lower liquidity needs and longer investment horizons that encourage monitoring. Mutual funds certainly have many reasons to be associated with non-monitoring but the strength of those reasons is difficult to gauge except to say that investment advisors are less susceptible to them. One plausible \textit{a priori} ranking of which institutional types will be associated with effective monitoring is banks (lowest), mutual funds, investment advisors, insurers, and pensions and endowments (highest).

### 4.2. Results for Institutional Types

Causation results do detect by-type differences in institutional behavior. They suggest mutual funds and independent investment advisors drive the no-monitoring relationship noted in Section 3. The specific procedure taken is to partition the percent of outstanding shares held by all institutions into percents of outstanding shares held by each of the five institutional types – banks, insurers, mutual funds, investment advisors and pensions/endowments. I then address the endogenous nature of the association between institutional ownership by different types of institutions and Tobin’s \( q \) by conducting JGLS regressions of the attraction and monitoring coefficients from Eqs (4) and (5). Separate pairs of this conditional version of the change-Granger tests are estimated for each of the five institutional types; results are in Table 6.

There is little empirical support for broad institutional monitoring – even after controlling for how different Tobin’s \( q \) may influence institutional investment. The attraction parameter estimates, \( \gamma_1 \), indicate that mutual funds, investment advisors and (surprisingly) banks are attracted to higher Tobin’s \( q \). There is no statistically significant association between lagged changes in \( q \) and current changes in holdings by insurers, pensions and endowments (this can be interpreted as insurers, pensions and endowments being least subject to style drift). The
Table 6. Causal Relations and Institutional Type.

<table>
<thead>
<tr>
<th></th>
<th>Parameter Estimate – Attraction</th>
<th>Parameter Estimate – Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banks</td>
<td>0.005 (4.35)</td>
<td>−0.041 (−0.65)</td>
</tr>
<tr>
<td>Insurers</td>
<td>−0.001 (−0.99)</td>
<td>0.009 (0.08)</td>
</tr>
<tr>
<td>Mutual Funds</td>
<td>0.005 (6.28)</td>
<td>−0.441 (−4.21)</td>
</tr>
<tr>
<td>Investment Advisors</td>
<td>0.005 (2.87)</td>
<td>−0.234 (−5.20)</td>
</tr>
<tr>
<td>Pensions &amp; Endowments</td>
<td>−0.0003 (−0.34)</td>
<td>0.287 (2.44)</td>
</tr>
</tbody>
</table>

Note: Regression coefficient estimates of the causal association between abnormal Tobin’s q and the percent of shares outstanding held by different types of institutional investors. Abnormal Tobin’s q is the residual from the regression of Tobin’s q on the control variables used in Table 2 – normalized capital expenditures, profitability, capitalization and leverage.

\[
\Delta IO_{it} = \alpha_A + \gamma_A \Delta q_{i,t-1} + \lambda_A IO_{i,t-1} + u_{At}
\]

\[
\Delta q_{it} = \alpha_M + \gamma_M \Delta IO_{i,t-1} + \lambda_M q_{i,t-1} + u_{Mt}
\]

The Attraction parameter estimate, \(\gamma_A\), is from a regression of changes in institutional ownership (by a specific type of institution) on lagged changes in abnormal Tobin’s q; the Monitoring parameter estimate, \(\gamma_M\), is from a regression of changes in abnormal Tobin’s q on lagged changes in institutional ownership (by a specific type of institution). Each Attraction-Monitoring pair is from a separate pair of multivariate regressions estimated using JGLS; each equation includes lagged levels of the dependent variable. Parenthetical values are t-statistics.

monitoring parameter estimates, \(\gamma_M\), are negative or indistinguishable from zero for most institutions – banks, insurers, mutual funds and independent investment advisors. This suggests most institutions do not monitor; however, pensions and endowments do Granger-cause increases in Tobin’s q. This suggests that pensions and endowments, hypothesized to be the institutional type most likely to monitor, do so.

In summary, the causation results suggest value-increasing monitoring is restricted to a subset of institutions – only pensions and endowments monitor; banks, insurers, mutual funds and investment advisors do not. Note further that an F-test on the contemporaneous regression results (available upon request) support the conclusion of by-type differences in institutional behavior. The finding in the causal regressions that pensions and endowments are effective monitors of corporate managers reverses the most surprising contemporaneous by-type result. The contemporaneous regressions’ indictment of pensions as non-monitors was surprising in light of well-documented activism by several pensions. This reversal in the causal test underscores the importance of separating the attraction and monitoring effects with a Granger-causation system of equations.
5. CHARACTERISTICS ENCOURAGING MONITORING

I next consider the institutional characteristics that encourage monitoring. By “characteristics,” I mean distinctions at the level of the institutional investor. Both the strong evidence that monitoring ability differs across institutional types and the laundry list of barriers to monitoring for institutions of all types collectively and each type individually motivate this inquiry into institutional characteristics. Some institutions may have sufficiently strong incentives to overcome these barriers and monitor; this focus on characteristics is an attempt to segregate the monitoring-prone institutions. By focusing on individual characteristics, I avoid some difficulties in developing hypotheses and drawing clean inferences.

5.1. The Influence of Institutional Characteristics

The characteristics affecting the likelihood of monitoring are based in part on the presumption of relatively fixed and non-trivial costs of monitoring. In some respects the fixed costs of monitoring are comparable to analysts’ information set-up costs (Merton, 1987). Monitoring costs include costs of information gathering, filing proxies, meeting with firm management, etc. Whether or not an institutional investor undertakes monitoring depends on cost-benefit analysis where the institutional owner’s benefit – (probability of monitoring success) × (percent ownership) × (corporate benefit) – must exceed its cost. Given the costs of monitoring a particular firm are largely fixed, one can see the central importance of the fractional ownership of the firm by an institution.

If monitoring entails set-up costs to begin gathering firm-specific information or begin building a relationship with corporate management, then the expected holding period of the investment will affect propensity to monitor. Institutions with longer expected holding periods would amortize this start-up cost over the longer horizon. This effect is akin to the Amihud and Mendelson (1986) liquidity-clientele effect where long-term investors amortize an initial illiquidity cost.

The size of the portfolio affects monitoring other ways. First, corporate managers may be more responsive to monitoring pressure of a large institutional investor than a small one. In addition to the greater credibility and prestige of a big institution, larger institutions have a more plausible implicit threat of increasing their stake. Second, larger institutions may experience economies of scale in monitoring. Economies might arise from prior or contemporaneous monitoring experience, experience with similar companies and more monitoring skills already available cheaply in-house.
As noted, institutions suffer from free-rider incentive problems where each relies upon other institutions to undertake monitoring. The largest institutional owner has the strongest incentives to monitor and to avoid free-riding. If sufficiently large relative to other institutions, it has a natural leadership position. So examining the stake size of the largest institutional owner looks at institutional monitoring with potentially less free-riding. Additionally, examining the difference between the two largest institutions captures the strength of the incentive to avoid free-riding.

Given potential free-rider problems I also consider another subset of institutions less likely to succumb. Rather than focus on a particular institutions’ investment relative to the firm I consider the particular institutions’ investment relative to its own portfolio. Specifically, I expect institutions with a large percent of their portfolio invested in a stock to be most inclined to monitor. In addition to the percent of the portfolio allocated to a stock, the dollar size of the position is important since a larger portfolio can afford a larger monitoring staff than a small one. A $100 million position may merit monitoring whether an entire portfolio or only a small component.

Corporate management’s responsiveness strongly affects the probability of successful monitoring. Certain institutional characteristics discussed above will have a double impact since they affect corporate responsiveness by raising the institution’s likelihood of influence. Characteristics affecting corporate responsiveness include larger share of the firm held, longer expected holding period and portfolio size. Larger institutions also carry an implicit threat of increasing their stake. Further, institutions known for monitoring-style or relational investing may find corporate management more responsive to their advances.

Note that some of the pro- and anti-monitoring influences discussed in Section 2.1 are either ignored or subsumed into other factors. The by-type distinctions are ignored here; given sufficiently large investments, institutions will overcome most hurdles to monitoring. Institutional myopia is covered by the expected holding period. Institutional proclivity for diversification and liquidity are considered in the size measures.

5.2. Calculations and Results for Institutional Characteristics

Analyzing institutional characteristics’ impact on a firm is a difficult iterative process requiring calculating company characteristics, accumulating portfolio properties with respect to the characteristics, computing cross-sectional breakpoints, then accumulating values for each company held by portfolios with certain characteristics. Table 7 presents JGLS regression estimates of the attraction and monitoring coefficients from the causation Eqs (4) and (5). Separate pairs
**Table 7.** Causal Relations and Institutional Characteristics.

<table>
<thead>
<tr>
<th>Short Name</th>
<th>Variable of Interest</th>
<th>Parameter Estimate – Attraction</th>
<th>Parameter Estimate – Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fraction of firm</td>
<td>Percent of the firm held by institutional owners with ≥3% of the firm</td>
<td>−0.005 (−1.69)</td>
<td>−0.067 (−1.93)</td>
</tr>
<tr>
<td>Big portfolios</td>
<td>Percent of the firm held by institutional owners with ≥5% of the firm</td>
<td>−0.005 (−1.71)</td>
<td>−0.041 (−1.16)</td>
</tr>
<tr>
<td>Big positions</td>
<td>Percent of the firm held by institutional owners in the top 10% when institutional portfolios are size ranked annually</td>
<td>−0.001 (−0.96)</td>
<td>0.223 (3.15)</td>
</tr>
<tr>
<td>Big positions</td>
<td>Percent of the firm held by institutional owners with $100 million positions in the firm (sample restricted to ensure possible)</td>
<td>−0.001 (−1.01)</td>
<td>0.156 (3.40)</td>
</tr>
<tr>
<td>Largest shareholder</td>
<td>Percent of the firm held by largest institutional owner</td>
<td>−0.001 (−0.55)</td>
<td>−0.105 (−2.25)</td>
</tr>
<tr>
<td>Largest – Second</td>
<td>Difference in percent of the firm held by the two largest institutional shareholders</td>
<td>−0.0001 (−0.16)</td>
<td>−0.1174 (−2.45)</td>
</tr>
<tr>
<td>Long horizon</td>
<td>Percent of the firm held by institutional owners with turnover in the bottom 10%</td>
<td>0.003 (1.60)</td>
<td>−0.052 (−1.85)</td>
</tr>
<tr>
<td>Percent of the portfolio</td>
<td>Percent of the firm held by “focused” institutional owners with ≥3% of the institutional portfolio invested in the firm</td>
<td>0.001 (0.53)</td>
<td>0.286 (4.62)</td>
</tr>
</tbody>
</table>

**Note:** Regression coefficient estimates of the conditional causal association between abnormal Tobin’s $q$ and the percent of shares outstanding held by institutional investors with the indicated characteristics. Abnormal Tobin’s $q$ is the residual from the regression of Tobin’s $q$ on the control variables used in Table 2 – normalized capital expenditures, profitability, capitalization and leverage.

\[
\Delta IO_{it} = \alpha_A + \gamma_A \Delta q_{it-1} + \lambda_A IO_{it-1} + u_{Ait}
\]

\[
\Delta q_{it} = \alpha_M + \gamma_M \Delta IO_{it-1} + \lambda_M q_{it-1} + u_{Mit}
\]

The Attraction parameter estimate, $\gamma_A$, is from a regression of changes in institutional ownership (by institutions with specific characteristics) on lagged changes in abnormal Tobin’s $q$; the Monitoring parameter estimate, $\gamma_M$, is from a regression of changes in abnormal Tobin’s $q$ on lagged changes in institutional ownership (by institutions with specific characteristics). Each Attraction-Monitoring pair is from a separate pair of multivariate regressions estimated using JGLS; each equation includes lagged levels of the dependent variable. Parenthetical values are $t$-statistics.
of this conditional version of the change-Granger tests are estimated for each institutional characteristic. Unlike with different types of institutions, there is little reason to expect differential attraction by institutions with these different characteristics. In the discussion that follows, I ignore the attraction coefficients. They are all indistinguishable from zero.

I first consider instances where individual institutions own significant stakes in the firm. I use two levels for significant. My primary focus for significance of fractional ownership of the firm is the 3% level; a secondary focus is the 5% regulatory breakpoint. Because my interest is in the effect of fractional ownership on a company, I compute the percent of each company held by institutional shareholders owning more than three percent of the firm. Table 7 shows these shareholders are ineffective as monitors; the \( \gamma_M \) monitoring coefficient is insignificantly different from zero. The results hold for the percent of the firm held by 5% shareholders.

I next consider size of the portfolio. Each year I compute the total portfolio value for every institutional investor in the sample. I then compute the percent of the firm owned by institutional shareholders drawn from among each year’s top portfolio-value decile. Regression estimates indicate these largest portfolios are effective monitors – lending credence to the prestige, credibility, plausible implicit threat and economies of scale stories.

In addition to large portfolios, I consider large positions in a single stock. I compute the percent of the firm owned by shareholders whose position in the firm is valued at more than $100 million. Regression estimates indicate these largest holdings are effective monitors – lending credence to the “deputy portfolio manager for monitoring” notion that a large position in a security may merit monitoring whether an entire portfolio or only a small component.

The largest institutional shareholder, counter-intuitively, does not appear to respond to its stronger incentives to monitor and to avoid free-riding. The estimated coefficient for these big institutional owners is negative and statistically significant under causal, contemporaneous and univariate specifications. The coefficients are also negative and statistically significant when the difference in ownership of the top two shareholders is used.

I next examine the expected holding period. Because some institutions may build a reputation as long-term investors, I base this measure of long-horizon investing on the expected, rather than actual, holding period for an institutional stake in a firm. Expected holding period is reasonably inferred from an institutional portfolio’s turnover level. Accordingly, I calculate portfolio turnover for each institutional investor. Because of the somewhat limited time-series, I compute turnover over the whole period. Any look-ahead bias introduced is not problematic since institutional management may be able to credibly signal to company management
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their intent to hold for the long-term (with standstill agreements or choices in regulatory disclosures). I then compute the percent of the firm held by institutional shareholders who are in the bottom turnover decile. They are not effective monitors; the monitoring coefficient $\gamma_M$ is statistically indistinguishable from zero.

Finally, I evaluate the effect of focused portfolios where a stock represents a significant fraction of the portfolio. I consider positions larger than 3% of the portfolio significant. For most institutional investment, a three percent allocation is large.\textsuperscript{18} I compute the percent of the firm held by institutional investors with more than 3% of their portfolio in a stock. Table 7 presents parameter estimates that indicate these institutional portfolios are effective monitors. The coefficient is positive and strongly statistically significant.

Ownership by the largest portfolios, by individual large dollar stakes and by focused portfolios is associated with significantly higher firm quality or increases in valuation. That focus matters suggests that institution-specific incentives are critically important. Focused institutional managers may have less opportunity to shirk monitoring. It is also suggestive that investment management talent can be spread too thin by over-diversification and that there may be an optimal portfolio size (Nanda et al., 1999). The causation results suggest analyzing large and most focused institutions in future research.

Institutional ownership of large fractions of the firm, the largest position and the largest position when big relative to other institutions is not associated with effective monitoring. There is little support for any notion of a lead institutional investor akin to the monitoring lead (outside) director prescribed by corporate governance experts. Too, long-horizon institutional investors are ineffective; this suggests that management’s complaint against transient shareholders are ill-informed.

6. CONCLUSION

The separation of ownership and control in large modern corporations enables agency problems to arise; dispersed ownership can allow firm management to shirk, take perqs, empire build or otherwise not maximize shareholder value (Berle & Means, 1932). Much analysis focuses on the role of managerial ownership in mitigating the problem (e.g. Jensen & Meckling, 1976; Stulz, 1988). The scale of large modern corporations, however, may restrict managerial ownership, so it is worthwhile to consider whether other investors’ monitoring encourages managers to act in shareholders’ interest. In particular, modern corporations require collection of funds from a large number of investors who may be atomistic and unable to collect the information necessary to exercise their control rights. Institutions like banks, insurance companies, mutual funds, investment advisors,
pensions and endowments are large, active, growing and important investors in the stock market. Several arguments suggest that institutions may perform important monitoring roles, but there are also many barriers to institutional monitoring.

In this article, I attempt to characterize the association between institutional ownership and value-enhancing institutional monitoring more comprehensively than in prior research. I find there is little empirical support for the hypothesis that institutions pervasively undertake monitoring which increases firm quality, performance and valuation. In fact, I find that increases in firm valuation attract institutional investment, but quality and valuation decline subsequent to the institutional investment.

However, some anecdotal evidence and academic studies do support institutional monitoring, so I refine the focus of the study. In this stage, I focus on institutional incentives to monitor. I first consider the differences in incentives for and barriers to monitoring across different types of institutions. When the issue is framed in its proper time-series causal structure, I find that pensions and endowments alone are effective monitors. Banks, mutual funds, insurers and investment advisors are not. Next, I consider the institutional characteristics that would provide strong incentives for specific institutions to monitor. Institutions with concentrated, or more focused, portfolios are effective monitors, along with the largest institutions and large-dollar investors. Surprisingly, institutions with large percentage ownership are not associated with monitoring.

The study offers insights for corporate governance and delegated investment management. The negative causal association between institutional ownership and firm quality suggests that institutions are not a panacea for corporate governance ills. Only institutions that can overcome disincentives to monitor are relevant to resolving the shareholder-manager agency problem. Further, the relevance of specific institutional incentives suggests agency problems at the institutions themselves. Results suggesting better relative monitoring ability for institutions with focused portfolios recommend re-evaluating institutional diversification regulations and policies.

NOTES

1. Admittedly, other factors may have played a role in conglomerates’ demise (e.g. lack of external capital market evaluation (Meyer, Milgrom & Roberts, 1992)). However, conglomerates and institutions share enough common features to make raising the point worthwhile.

2. Data availability precluded extending the sample period. Since much of the key corporate governance research relies on a similar time period, my results remain relevant.
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3. Both book and market values used in computing Tobin’s $q$ would be noisier since quarterly statements are subject to a lower level of scrutiny than audited annual statements. In addition, the annual CompuStat tape likely has fewer errors than the quarterly one since its wider use implies greater scrutiny. Longer-horizon price changes embody less noise (Damodaran, 1993; French & Roll, 1986). Analysis of quarterly data does lead to the same conclusions on monitoring as the annual data.

4. Hirsh and Seaks (1993) recommend the semi-log specification for Tobin’s $q$ in general; my own Box-Cox maximum likelihood analysis for this particular implementation of Tobin’s $q$ confirms their results.

5. Other research (Chung & Jo, 1996; McConnell & Servaes, 1990; Morck et al., 1988) relies on values for advertising and R&D expenses to proxy for intangible assets and future growth opportunities. This is an onerous restriction – jointly requiring them eliminates 78% of my data. The common approach of using industry averages to replace missing values ignores the accountants’ dictum that insignificant expenses may be aggregated. Ipso facto, firms reporting advertising and R&D expenses will have larger, more significant expenses of these types. Using book value of intangibles is similarly problematic.

That said, results described below are robust to the numerous alternative specifications for intangible growth prospects including advertising and R&D expenses (normalized by sales or assets), normalized R&D expenses without advertising, normalized depreciation, normalized book intangibles, earnings-to-price ratio and return variability. In all cases, the contemporaneous regression coefficient for institutional ownership is negative and significant at the 1% level.

6. Results described below are robust to the numerous alternative measures for firm size including net sales, total assets and capitalization. The contemporaneous regression coefficient for institutional ownership is always negative and significant at the 1% level over a range of linear, quadratic, cubic and logarithmic specifications for the different measures. Using the higher-order specifications ensures that, given the high correlation between institutional ownership and firm market capitalization, including an institutional variable is not simply capturing a non-linearity in size.

7. The Dickie-Fuller (1979) tau-statistics discussed are for a traditional simple Dickie-Fuller specification where changes are regressed on lagged levels of the dependent variable. Note too that Eqs (4) and (5) are essentially Dickie-Fuller specifications augmented with additional explanatory variables. Again, unit roots are rejected.

8. Overfitting models included AR(1), MA(1) and ARMA(1,1). Aggregate correlograms were constructed using mean values of autocorrelations and partial autocorrelations and mean values of the standard errors. Parameter significance was rejected using coefficient means and means of their standard errors. The empirical distribution of the $T$-ratios for MA(1) effects is similar to a $t$-distribution. More individual AR(1) effects were significant than expected under a $t$-distribution, but the aggregate $T$-ratios still reject AR(1) effects. Though rejected, AR(1) was most plausible in the aggregate correlograms and “won” comparisons among overfitted models based on the average Akaike Information Criterion and average Schwartz Bayesian Criterion.

9. The Fixed Effects Model in Table 2 is one of a class of error-components models (ECM). It uses a least-squares dummy variables (LSDV) approach with variation across firms. Two-way fixed effects allows variation across firms and across time. Random Effects are another type of ECM; again, one-way and two-way effects are possible. As a robustness check, I estimate one-way and two-way Fixed and Random Effects models.
I use LSDV and Fuller and Battese (1974) methods with Wansbeek and Kapteyn (1989) adjustments since some firm-years are missing from the data. All specifications include the Table 2 control variables. In all four ECMs, the association between institutional ownership and Tobin’s q is negative and significant.

10. Extreme observations are set equal to the nearest non-extreme value (Legendre, 1805). Other researchers have emphasized the importance of assuring observed values of ratios like Tobin’s q and the four control variables are reasonable; for example, McConnell and Servaes (1990) exclude any $q > 6$.

11. Each period, I divide firms into two above- and below-median groups based on institutional ownership and on Tobin’s q. That is, each observation is allocated to one of four ($2 \times 2$) categories. The classification variables are binomially distributed, so a $\chi^2$-test may be used to test for association between institutional ownership and $q$. The $\chi^2$-test rejects the null hypothesis of no association between institutional ownership and $q$ at the 1% level. Higher institutional investment is associated with lower $q$.

12. This is comparable to the impact of the key variable in other studies; e.g. Yermack (1996) finds that increasing board size from 15 to 16 directors is associated with a $25$ million decline in firm value for his average firm.

13. Several researchers find non-linearities in the variable of interest (Morck et al. (1988) impose breakpoints for non-linearities, McConnell and Servaes (1990) compute inflection points from linear and squared terms, and Cho (1998) uses a grid-search to find breakpoints). I compute inflection points from quadratic-in-institutions versions of the contemporaneous Simple Model and Classic Model of 0.69 and 0.74, respectively. Below these inflection points the relationship between institutional ownership and $q$ is negative. Economic significance of the main results is assured since less than 1% of firm-year observations are in the higher, positive region.


15. Brickley, Lease and Smith (1988, 1992) find the fraction of a firm’s shareholders supporting management antitakeover proxy proposals increases for firms with higher bank and insurance company holdings. Van Nuys’ (1993) evidence supports Brickley, Lease and Smith but cannot statistically distinguish between the votes of institutions with and without known business relations to the proxy target.

16. As an example of the nontriviality of monitoring costs, the lead dissident in the 1989 Honeywell proxy contest reports their out-of-pocket costs at $350,000. While small relative to their ultimate gain, it would seem large if the monitoring proved unsuccessful. See Van Nuys (1993). She notes that while institutional investors supported dissent, they did not initiate it (a large individual shareholder did). She posits that activism will be supported by institutions but not generally spearheaded by them; instead, she expects leadership from non-institutional shareholders who are not required to justify expenditures on unsuccessful monitoring.

17. This 3% is somewhat arbitrary, but activist monitoring exists at even lower levels (Van Nuys, 1993). I speculate that firm management in a diffusely-held corporation would generally be disparaging of monitoring attempts by shareholders with less than 1% of the firm. I also wanted to set this primary breakpoint below my secondary 5% breakpoint.
Because this 5% regulatory breakpoint is also arbitrary (though picked by regulators) and because some institutions might seek to influence management while remaining below the threshold for costly regulatory filing, I consider a lower level – picking the midpoint of the 1–5% range. It is plausible that a 3% owner can gain management’s attention.

Given this somewhat arbitrary choice, I do not examine other levels after going to the data. There are arguments for looking at 10% breakpoints (regulatory reasons again) and 20% breakpoints (GAAP reasons and the Holderness and Sheehan (1988) precedent). However, my primary interest is everyday, on-going monitoring further removed from these control-like positions.

18. In my sample, institutions have a mean 221 investments in different firms. Concentrated institutional investment is rare enough that it is marketed specially as with the Fidelity Fifty or Janus Twenty mutual funds. One activist monitor frequently mentioned in the popular and academic press, the LENS Fund, is highly concentrated. They normally hold only four stocks. The popular press (e.g. Stout, 1997) also highlights the association between concentration and high performance.

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