Corporate Governance and Corporate Control:

Evidence from Trading

by

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Dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in the Department of Business Administration
in the Graduate School of Duke University
2009

Abstract
(Finance)

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Abstract

In Chapter 1, I document a negative (positive) relationship between changes in large (small) blockholders' ownership and abnormal returns. The evidence in this paper suggests that an increase in the relatively large blockholders' ownership raises the consumption of private benefits while an increase in the relatively small blockholders' ownership constrains large blockholders from expropriating minority shareholders. Moreover, I find an inversely U-shaped relationship between changes in the largest blockholders' ownership and firm value. As large blockholders' ownership and control increase, the negative effect of firm value driven by expropriating minority shareholders starts to exceed the incentive benefits of monitoring by the largest blockholder. I also show that the negative relationship between changes in institutional investors' control and abnormal returns declines as analysts' following increases.

In Chapter 2, I study the role of trading as a governance mechanism. I hypothesize that governance through trading plays a significant monitoring role in practice and that engaging in "voice" and "exit" can be substitutes. I show that abnormal turnover following earnings announcements is significantly higher for firms with large institutional blockholders than for those with small individual shareholders. For firms with majority institutional ownership, I demonstrate that abnormal trading is higher for firms with multiple blockholders than for those with a single large blockholder and that abnormal trading increases with the number of institutional investors and declines with the percent of stocks owned by the largest institutional investor. Moreover, this excess trading is driven by mutual fund investors, which are non-interventionist and thus are more likely to engage in "exit" than "voice". I also show that for firms with large institutional blockholders, abnormal trading following public announcements increases with liquidity.

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1

Monitoring the Monitor! Private Benefits of Control and Firm Value

1.1 Introduction

Large blockholders can extract private benefits of control from companies they run and thus expropriate minority shareholders (Williamson (1985), Jensen (1986), Grossman and Hart (1988), Barclay and Holderness (1989, 1992), Boycko, Shleifer, and Vishny (1993), Zingales (1994, 1995), among many others). This effect should reduce firm value. From a corporate governance perspective, however, concentration of ownership is optimal because it provides an incentive to monitor. In Shleifer and Vishny (1986), Admati, Pfleiderer, and Zechner (1994), Maug(1998), Kahn and Winton (1998) and Mello and Repullo (2004), a larger block is unambiguously more desirable as it reduces the free-rider problem and maximizes incentives to intervene. Strengthening corporate governance enhances firm value since it re-

duces agency problems (Coase (1937); Jensen and Meckling (1976); and Fama and Jensen (1983a,b)). The effect of ownership concentration on firm value is therefore unclear. Understanding the relationship between the concentration of institutional ownership and firm value is the main goal of this paper.

I show that changes in the one or two largest institutional investors' ownership (relatively large blockholders) are negatively correlated with contemporaneous abnormal returns. Keeping the initial ownership constant, an increase in ownership of the relatively large blockholders is associated with negative abnormal returns, while a decline in ownership is associated with positive abnormal returns. I also show that changes in ownership of the bottom eight of the largest ten institutional investors as well as all institutional investors excluding the largest two (relatively small blockholders) are positively correlated with abnormal returns.

The extraction of private benefits by large blockholders predicts that increases in the relatively large blockholders' ownership should lead to a decline in firm value. On the other hand, an increase in the large blockhodlers' ownership should raise incentives to monitor, thus, increasing firm value. The first main result of this paper indicates a negative relationship between changes in the relatively large blockholders' ownership and abnormal returns. This suggests that the negative effect of the expropriation of minority shareholders dominated the benefits associated with higher monitoring. The second result shows that an increase (de-

crease) in the relatively small blockholders' ownership is associated with positive (negative) abnormal returns. This suggests that relatively small blockholders can monitor larger blockholders by constraining them from extracting private benefits, thus "Monitoring the Monitors."

Furthermore, I illustrate that an increase in large blockholders' ownership as compared to an increase in small blockholders' ownership in year t is associated with lower sales growth, lower capital expenditure, lower R&D, lower advertising expenditure, and higher income before extraordinary items in year t+1. Capital flow has been shows to be sensitive to short-term performance. Hence, institutional investors, who are concerned about their capital flow, could pressure the firms they control to focus on short-term profits by reducing long-term investments and expenditures. The results are consistent with the idea that changes in control affect firm operations and value.

The various results in this paper are all consistent with the claim that large blockholders consume private benefits of control, which reduce firm value. However, the results are all indirect since private benefits of control are difficult if not impossible to measure. Dyck and Zingales (2002) state "By their very nature private benefits of control are difficult to observe and even more difficult to quantify in a reliable way. A controlling party can appropriate value for himself only when this value is not verifiable (i.e., provable in court). If it were, it would be

relatively easy for non-controlling shareholders to stop him from appropriating it. Thus, private benefits of control are intrinsically difficult to measure."

An alternative explanation is that concentration of ownership is optimal when firms under-perform in order to facilitate restructuring. Large blockholders might buy more shares when the firm performs poorly in order to protect their already large stakes and provide the right environment for restructuring. While ownership concentration could be optimal for restructuring, it is still costly. One example of such costs is the fact that ownership concentration reduces liquidity. Thus, when restructuring is done, large blockholders would reduce their holdings back to normal. I show that there is no return reversal during the two years following the increase in ownership concentration. If ownership concentration is optimal for restructuring, then we should observe an improvement in firm performance during the years that follow the increase in concentration. An argument that could be made is that restructuring takes time, thus considering the two years after the change in ownership is not sufficient. I show that the increase in the largest two blockholders' ownership is short-lived. The large blockholders start reversing their ownerships' increase within one year. If restructuring requires more than two years, then we should not observe this ownership concentration reversal within one year from the initial change. Furthermore, I document that returns explain the difference in the following year's sales growth, capex growth, and R&D growth

between firms with a current increase and a current decrease in ownership concentration. The results are inconsistent with the idea that ownership concentration is optimal for restructuring. However, if ownership concentration, as an optimal mechanism to facilitate restructuring, is driving the results, the findings would still be very interesting.

Consistent with the claim that too much control by the largest blockholders reduces firm value due to the extraction of private benefits of control, I show that an increase (decrease) in the relatively large institutional blockhodlers' ownership is associated with negative (positive) abnormal returns, when the initial ownership by these large institutional blockholders is already large. On the other hand, when the initial ownership for the relatively large blockholders is low, a change in their ownership is positively correlated with abnormal returns. Therefore, another finding of this paper is that the relative size of the relatively large blockholders matters. They need to have enough control to extract private benefits of control, which drives down firm value. At low levels of control, an increase in large blockholders ownership improves the incentives to monitor and thus improves firm value. However, as control increases, the costs associated with the extraction of private benefits of control dominate the benefits associated with more monitoring, driving firm value down.

Morck, Shleifer, and Vishny (1988) find an inverse U-shaped relationship be-

tween managerial equity ownership and firm valuation for a sample of U.S. firms. Stulz (1988) formalizes this relationship by developing a model that predicts a concave relationship between managerial ownership and firm value. As managerial ownership and control increases, the negative effect on firm value associated with the entrenchment of manager-owners starts to exceed the incentive benefits of managerial ownership. Considering large blockholders' ownership rather than managerial ownership, I find a similar inverse U-shaped relationship between large blockholders ownership and firm valuation. I argue that as large blockholders' ownership and control increase, the negative effect of firm value driven by the extraction of private benefits of control and expropriating minority shareholders starts to exceed the incentive benefits of monitoring by large blockholders.

As new simple measures of outside control, I consider the ratio of the largest two institutional blockholders' ownership to the bottom eight of the top ten blockholders' ownership as well as the ratio of the largest two blockholders' ownership to the ownership of all other institutional investors. I find that changes in control are negatively correlated with abnormal return. For firms with an increase in control that falls in the highest decile, average abnormal returns are -15% (-23%), while it is 14% (28%) for firms with the highest decline in control (lowest decile), using the two measures of control respectively.

Doidge, Karolyi, Lins, Miller, and Stulz (2009) and Stulz (1999) argue that list-

ing on a U.S. exchange can impose indirect constraints on the extraction of private benefits by increasing the scrutiny of "gatekeepers" such as Analysts and the media. Baker, Nofsinger, and Weaver (2002) and Lang, Lings, and Miller (2003) show that firms have more analyst and media coverage and forecast accuracy improves after cross-listing on a U.S. exchange. Consistent with the claim that analysts' following imposes restrictions on expropriating minority shareholders, I show that the negative relationship between changes in the institutional investors' control measures and abnormal returns declines as analysts' following increases. The relationship between changes in control and abnormal returns, however, continues to be negative even for high levels of analysts' following.

The paper is organized as follows: I briefly review the relevant literature in Section 2. Section 3 describes the data, examines the effect of changes in ownership on firm value by size of institutional investors, shows the effect of ownership changes on future operations, and finds an inverse U-shaped relationship between large blockholders' ownership and firm valuation. section 4 provides two new simple measures of outside control, analyzes the relationship between change in control and firm value, and examines how analysts' scrutiny reduces the effect of change in control on firm value by constraining the consumption of private benefits. The last section summarizes the findings.

1.2 Literature Review

Shleifer and Vishny (1997) provide an excellent survey of various corporate governance issues discussed in this paper. I select a few papers from the survey as well as some recent papers to describe in this section.

Many papers document considerable amount of evidence that show the prevalence of managerial behavior, which does not serve the interests of investors, especially shareholders. Jensen (1986) argues that managers overinvest rather than return free cash-flows to investors. Several studies show that bidder returns on the announcement of acquisitions are often negative (Roll (1986) survey the evidence). Lewellen, Loderer, and Rosenfeld (1985) find that bidder returns are more likely to be negative when managers hold little equity, suggesting that agency problems can be reduced with incentives. Other studies focus directly on managers threatened by the loss of private benefits of control and thus resisting value-increasing takeovers (DeAngelo and Rice (1983), Walkling and Long (1984), and Jarrell and Poulsen (1988)).

There is also evidence that control affects firm value. Barclay and Holderness (1989, 1992) find that, in the United States, large blocks of equity trade at a substantial premium to the posttrade price of minority shares. Their evidence suggests that owners of such large equity blocks receive special benefits. Other

studies find that the price of shares with identical cash-flow rights but higher voting rights trade at a premium (Lease, McConnell, and Mikkelson (1983, 1984), DeAngelo and DeAngelo (1985), and Zingales (1995)).

Other evidence of the cost associated with the extraction of private benefits of control comes for international studies. Many studies show that the voting premium is higher in countries with poor protection of minority shareholders (Levy (1982), Rydqvist (1987), Boycko, Shleifer, and Vishny (1993), Zingales (1994), and Barca (1995)). Some studies find evidence of higher valuation of firms in countries with better protection of minority shareholders and lower valuation when managers have high levels of control rights (La Porta, Lopez-De-Silanes, Shleifer, and Vishny (2002), Lemmon and Lins (2003)). Other studies consider the cross-listing decision on a U.S. stock exchange. Doidge (2004) find that non-U.S. firms that cross-list on U.S. exchanges have voting premiums that are 43% lower than non-U.S. firms that do not cross-list. Doidge argues that the evidence supports the bonding hypothesis that cross-listing in the U.S. improves the protection of minority shareholders and decrease the private benefits of control. Doide, Karolyi, Lins, Miller, and Stulz (2009) study a sample of 4,000 firms from 31 countries and find support for the hypothesis that when private benefits are high, controlling shareholders are less likely to choose to cross-list in the United States because such listing would constrain them from the consumption of private benefits.

The evidence in the literature supports the idea that large blockholders such as managers do extract private benefits of control and that the expropriation of minority shareholders is costly and negatively affects firm valuation. I contribute to this literature by showing that in a sample of U.S. firms, an increase in ownership of relatively large institutional blockholders reduces firm value. Furthermore, I show that an increase in the ownership of smaller institutional blockholders is beneficial, which suggests that smaller blockholders can play a monitoring role by constraining larger blockholders from consuming private benefits. I also create simple measures of outside control and show a negative relationship between changes in outside control and firm value.

A different literature argues that a single outside blockholder is optimal for governance since such ownership structure reduces the free-rider problem and, hence, maximizes incentives to intervene. Porter (1992) argues that push toward diversification has hurt U.S. firms because investors who own tiny position in many companies have little incentives to monitor and pressure management when improvements can be made. Admati, Pfleiderer, and Zechner (1994) develop a model to analyze the effect of large shareholders' activism on securities market equilibrium. In their setting, a free-rider problem arises because passive investors benefit from the large shareholder's monitoring activities without incurring the costs associated with monitoring. Shleifer and Vishny (1986) develop a model in

which the presence of a large shareholder provides a partial solution to this free-rider problem and thus leads to interventions that improve firm value. I show that at low levels of control, an increase in large blockholders ownership improves the incentives to monitor and thus improves firm value. However, as control increases, the costs associated with the extraction of private benefits of control dominate the benefits associated with more monitoring, driving firm value down. Thus, the relationship between a large blockholders ownership and firm value is inversely U-shaped.

1.3 Changes in Ownership and Firm Value

1.3.1 Data Description

The data consists of institutional investors' holdings from Thomson Reuters Mutual Fund and Investment Company Common Stock Holdings Databases. The Thomson holdings data covers entire investment companies, starting in 1980. The investment companies, which include banks, insurance companies, parents of mutual funds, pension funds, university endowments, and numerous other groups of professional investment advisors, are often called 13f institutions, referring to the form that they are required to file with the SEC every quarter. Institutional ownership is defined as the ratio of the number of shares held by institutional investors to the number of shares outstanding. The largest blockholders' owner-

ship is the percentage of shares held by the largest institutional investor for the particular firm. Similarly, the largest 2 blockholders' ownership, the bottom 8 of the top 10 blockholders' ownership, and all institutional investors excluding the top 2 blockholders' ownership are defined. Changes in ownership for each group of institutional investors are measured as the ratio of their ownership in the end of the current calendar year and their ownership in the end of the previous calendar year. The institutional ownership data is then merged with monthly stock returns and market capitalization from the Center for Research in Security Prices (CRSP). Annual Book-to-market data are gathered from Compustat Industrial Annual data, where the book-to-market ratio is the natural logarithm of the ratio of the book-value of assets to the market-value of assets. The market value of assets is defined as book value of assets plus market capitalization minus total common equity minus deferred taxes. The sample of firms with complete data (institutional ownership at the beginning and end of January through December year, returns for January through December, market capitalization at the beginning of January, book-to-market ratio at the end of the fiscal year before January, and at least five institutional investors) covers the 1981-2007 period and ranges from a minimum of 690 in 1981 to a maximum of 3,156 in 1998, for a total of 57,837 firm-years.

1.3.2 Effect of changes in Ownership by Blockholders' Size

I use the same methodology as in Nofsinger and Sias (1999). I start by using a sorting procedure designed to create 10 portfolios that have similar institutional ownership at the beginning of each year and large differences in the change in institutional ownership over the year. This sorting procedure is repeated for various groups of institutional investors: all institutional investors, the largest blockholder, the largest two blockholders, the bottom 8 of the top 10 blockholders, and all institutional investors excluding the top 2 blockholders. At the beginning of each January, all firms are sorted into 10 portfolios based on the fraction of shares held by the particular group of institutional investor. Firms within each initial group-ownership-sorted portfolio are further sorted into 10 portfolios based on the change in the fraction of shares held by the group of institutional investors over the following year (for the first year, the change in ownership for the largest blockholder, as an example, is measured as the fraction of shares held by the largest institutional investor on December 31, 1981 divided by the fraction on December 31, 1980), resulting in 100 initial group ownership, change in group-ownership-sorted portfolios each year. Firms in the decile of stocks experiencing the largest increase in group ownership within each initial group-ownership decile are then reaggregated across the initial-group-ownership-sorted deciles to form an initial group ownership stratified portfolio that exhibits a large increase in group own-

ership. Similarly, stocks within each of the other group-ownership change deciles are reaggregated over the initial group-ownership deciles to form a total of 10 initial group-ownership stratified, change in group ownership portfolios. For the remainder of this subsection, I focus my attention on firm years with at least 10% institutional ownership. This restriction reduces the sample from a total of 57,837 to 49,384 firm-years. I will remove this restriction when I consider the relative size of the largest blockholders.

Table 1 describes the distributions of initial group ownership and changes in ownership during the following year. For the full sample of 49,384 firm-years, the average initial institutional ownership is approximately 47%. The largest blockholder owns 8% of the firm on average, while the second largest blockholder owns 4.7%. The bottom 8 of the top 10 investors hold 17%, while all institutional investors excluding the largest two blockholders hold 32.7% of the firm. Changes in ownership has a wide range. Institutional investors sell as much as 27% of the firm (1^{st} percentile of the distribution), while they buy as much as 34% of the firm (99^{th} percentile of the distribution). Table 1 shows various percentiles for both initial ownership and changes in ownership for the various groups of institutional investors. The initial institutional ownership and changes in institutional ownership vary significantly across and within groups. Understanding the effect of this heterogeneity on firm value is the main goal of this paper.

Table 2, panel A shows characteristics of the institutional ownership change portfolios for the full sample. Reported are the time-series average of the annual cross-sectional mean characteristics and associated Fama-MacBeth (1973) t-statistics in parentheses for each portfolio. The initial ownership is similar across the various portfolios, which indicates that the sorting procedure described above works. The F-statistic, which is based on the null hypothesis that the time-series averages of the cross-sectional means do not differ across the ownership change portfolios is 0.02. The change in ownership varies significantly across the various deciles. Institutional investors of firms that fall in the largest decrease decile sell an average of 14.4% of the firm while institutional investors of firms in the largest increase decile buy 19.6% of the firm. Beginning of year capitalizations are slightly different between portfolios, however, the change in capitalization is not monotonic from the lowest to the highest ownership change portfolio. On the other hand, beginning of year book-to-market are statistically equal for the various portfolios. Abnormal returns are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months contemporaneous to the ownership changes. The last row of Table 2, panel A, shows that there is a strong positive relationship between changes in ownership and firm value. The highest ownership decrease (increase) portfolio has an average abnormal return of -23.5% (30.3%). The annual difference in abnormal returns between the highest

decrease and the highest increase portfolio is more than 53%, which is both economically enormous and statistically significant.

Table 2, panel A is a replication of Nofsinger and Sias (1999) table I for a different sample period and using a different source of ownership data. I find similar results. They argue that the positive relationship between changes in institutional ownership and abnormal returns captures institutional investors' herding behavior. I defer from Nofsinger and Sias (1999) in that I consider how changes of ownership of various groups of institutional investors affect returns. As described below, there is a negative (positive) correlation between the changes in ownership of relatively large (small) blockholders and firm value. This difference between large and small blockholders reveals interesting findings and implications.

Table 2, panel B shows a significant negative relationship between changes in ownership of the largest blockholder and abnormal returns. For the largest blockholder, abnormal returns of the largest decrease portfolio are a statistically significant 5.4%. On the other hand, abnormal returns are -3.1% for the highest ownership increase portfolio. Similarly, Panel C reveals that abnormal returns are negatively associated with changes in ownership of the largest two blockholders. Abnormal returns are 5.1% (3.8%) for the highest ownership decrease (increase) portfolios. Panel D, on the other hand, shows a positive relationship between changes in the bottom 8 of the top 10 blockholders' ownership and abnormal re-

turns. Abnormal returns for the highest ownership decrease (increase) portfolios are -18.2% (13.2%). Furthermore, Panel E shows a strong positive relationship between changes in all institutional investors excluding the top 2 blockholders' ownership and firm value. Abnormal returns are -28.4% for the highest ownership decrease portfolio, while it is 36.7% for the highest ownership increase portfolio. Table 2 shows a significant negative (positive) relationship between changes in the relatively large (small) blockholders' ownership and firm value.

Table 3 shows the average coefficients across 27 annual regressions with Fama-MacBeth (1973) t-statistics in parentheses. The following regression is estimated annually

$$AR_i = \alpha_{i,1} + \alpha_{i,2}\Delta IO_{\text{i, rank=j to k}} + \alpha_{i,3}\Delta IO_{\text{i, rank=k+1 to N}} + \epsilon_i \qquad (1.1)$$

where abnormal returns, AR_i, are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months during the year, and the change in institutional group ownership, $\Delta\text{IO}_{\text{i, rank=j to k}}$, is the ratio of the end of year and beginning of year percentage of shares held by the particular group of institutional investors, for firm i. The group of institutional shareholders is based on the rank of their holdings (for example, rank=3 to 8 implies the bottom 8 of the largest 10 shareholders). Table 3 shows that the coefficients on $\Delta\text{IO}_{\text{i, all}}$ is positive an statistically significant. The coefficients on

$\Delta IO_{i,\ rank=1}$ and $\Delta IO_{i,\ rank=1\ to\ 2}$ are -0.542 and -0.420 with t-statistics of -5.55 and -4.69, respectively. On the other hand, the coefficients on $\Delta IO_{i,\ rank=3\ to\ 8}$ and $\Delta IO_{i,\ rank=3\ to\ N}$ are significantly positive. Table 3, column (6) and (7) show that even when I include both $\Delta IO_{i,\ rank=1\ to\ 2}$ and $\Delta IO_{i,\ rank=3\ to\ 8}$ or $\Delta IO_{i,\ rank=1\ to\ 2}$ and $\Delta IO_{i,\ rank=3\ to\ N}$, the coefficients remain negative for the relatively large blockholders' ownership change and positive for the relatively small institutional investors' ownership change.

An increase in control of the relatively large blockholders is associated with negative abnormal returns, which is consistent with the hypothesis that large institutional blockholders consume private benefits of control and expropriate minority shareholders. However, an increase in ownership of the relatively small institutional investors is associated with positive abnormal returns. Since an increase in the relatively small blockholders' ownership reduces the relative control of the relatively large blockholders, the results suggest that small blockholders constraint large blockholders from the consumption of private benefits.

1.3.3 Changes in Ownership and Future Operations

In this subsection, I study the effect of changes in the large (small) blockholders' ownership on future sales, expenses, and income. The following regression is

estimated annually,

$$Y_t = \alpha_1 \Delta \text{IO}_{\text{rank=1 to 2, t}} + \alpha_2 \Delta \text{IO}_{\text{rank=3 to 10, t}} + \alpha_3 \text{Size}_t + \text{Industry} + \epsilon \quad (1.2)$$

where $Y_t = \frac{\Delta \text{Sales}_{t+1}}{\text{Sales}_t}$ or $\frac{\Delta \text{capex}_{t+1}}{\text{Sales}_t}$; or $\frac{\Delta \text{R\&D}_{t+1}}{\text{Sales}_t}$, or $\frac{\Delta \text{Advertising Expense}_{t+1}}{\text{Sales}_t}$, or $\frac{\Delta \text{income before extraordinary items}_{t+1}}{\text{Sales}_t}$; $\text{IO}_{\text{rank=1 to 2, t}}$ is the percentage change in the largest two blockholders' ownership during year t; $\text{IO}_{\text{rank=3 to 10, t}}$ is the percentage change in the following largest eight blockholders' ownership during year t; Size_t is the natural logarithm of total assets at the beginning of year t; and Industry is a 3-digit SIC code (industry dummy). It is more difficult for large firms to increase their already larger sales by the same percentage as small firms. To control for this difference between large and small firms, I include size as a regressor. An industry dummy takes into account any other differences between industries. I repeat the same regressions where changes in sales, capex, R&D, Adv-expense, and income take places during year t+2. Average coefficients across annual regressions with Fama-MacBeth (1973) t-statistics in parentheses are provided.

Table 4, column 1 shows that smaller firms have significantly higher sales growth. The coefficient in the changes in the largest 2 blockholders' ownership is -0.008 with a t-statistic of -2.77, while the coefficient in the change of the following 8 blockholders' ownership is a positive 0.018 with a t-statistic of 3.74. Thus,

changes in the relatively large (small) blockholders' ownership is associated with negative (positive) sales growth. Columns 2 through 5 show that an increase in the relatively large blockholders' ownership as compared to an increase in small blockholders' ownership during year t is associated with higher growth in capital expenditure, R&D expenditure, and advertising expenditure, and a lower income growth during year t+1. Table 4 shows that changes in current ownership is significantly associated with changes in operations one year later. However, these relationships are no longer significant when I consider current changes in ownership and changes in the same accounting measures two years later. The evidence is consistent with the idea that changes in ownership affect firm operations and its value.

1.3.4 Restructuring as an Alternative Explanation

An alternative explanation is that concentration of ownership is optimal when firms under-perform in order to facilitate restructuring. Large blockholders might buy more shares when the firm performs poorly in order to protect their already large steaks and provide the right environment for restructuring. While ownership concentration could be optimal for restructuring, it is still costly (for example, ownership concentration reduces liquidity). Thus, when restructuring is done, large blockholders would reduce their holdings back to normal. I show that there

is no return reversal during the two years following the increase in ownership concentration. Table 2 shows that abnormal returns are similar across the 10 initial group-ownership stratified, change in group ownership portfolios during the one year and two years following the ownership change. If ownership concentration is optimal for restructuring, then we should observe an improvement in firm performance during the years that follow the increase in concentration.

An argument that could be made is that restructuring takes time, thus considering the two years after the change in ownership is not sufficient. I show that the increase in the largest two blockholders' ownership is short-lived. The large blockholders start reversing their ownerships' increase within one year. If restructuring requires more than two years, then we should not observe this ownership concentration reversal within one year from the initial change. Table 5 considers the effect of current ownership-changes on future ownership-changes. For each year t, I find the largest two blockholders for each firm and regress future changes in the large blockholders ownership on lag ownership changes as well as lag returns, size, and industry dummies. First, I follow the largest 2 blockholders each year allowing for the identity of the blockholders to change. Then, I select the largest 2 blockholders at time t and follow their ownership changes even if they are no longer the largest 2 blockholders at times t+i. Table 5 shows that ownership-changes begin to reverse the following year and continue the reversal for at least the next

3 years, when we allow the largest 2 blockholders to change. Following the same initially largest 2 blockholders shows that they do start reversing their ownership-change the following year and that this reversal continues for at most two-years. The evidence suggests that increases in the largest 2 blockholders' ownership is short-lived. These blockholders would only increase their holdings for one year and then start selling their shares.

Furthermore, I document that current returns explain the difference in future sales growth, capex growth, and R&D growth between firms with a current increase and a current decrease in ownership concentration. Table 6 shows the estimated coefficients of regressions similar to the ones estimated in Table 4. The only difference is the addition of annual returns as a regressor. Table 4 illustrates that year t returns' coefficients are positive and significant when year t+1 sales growth, capex growth, R&D growth, and growth in advertising expenditures are the left-hand side variables. Thus, prices do reflect future changes in these measures of firm performance. Table 4 shows that changes in large blockholders' ownership as compared to small investors' ownership is associated with lower sales growth, lower capex growth, and lower R&D growth. When returns are included as a regressor, the changes in ownership coefficients become both insignificant, which suggests that returns capture any difference in performance between firms with an increase in large blockholders' ownership and firms with an increase in small

blockholders' ownership. The coefficients on changes in ownerships remain similar to table 4 when growth in advertising expenditure or income before extraordinary items are the left-hand side variables.

1.3.5 Relative Size of Large Blockholders

In this section, I study the effect of the initial level of the relatively large blockholders' ownership on the relationship between changes in their ownership and firm value. I remove the earlier restriction that institutional ownership has to be larger than 10% and consider the full sample of 57,837 firm-years. I begin by sorting firms based on the initial ownership of each group of institutional investors: largest blockholder, largest 2 blockholders, the bottom 8 of the top 10 blockholders, and all institutional investors excluding the top 2 blockholders. Low (high) group-ownership represents firms for which the particular group of institutional investors' ownership fall in the lowest (highest) three deciles for each year. Medium group-ownership represents firms for which the group ownership falls in the middle four deciles for each year. For each initial ownership category, I use the same sorting procedure described above to create 5 portfolios that have similar group ownership at the beginning of each year and large differences in the change in group ownership over the year. For each institutional investors group and each initial group ownership category, I end up with 5 initial group-ownership strati-

fied, change in group ownership portfolios.

Table 7, panel A indicates that when the largest blockholder has low initial ownership, changes in her ownership during the following year is positively correlated to firm value. Abnormal returns are -5.0% for low initial ownership and the largest ownership decrease quintile, while abnormal returns are 5.9% for low initial ownership and the largest ownership increase portfolio. The relationship between changes in ownership and firm value becomes significantly negative when initial ownership is medium or high. The results imply an inverse U-shaped relationship between changes in the largest blockholders' ownership and firm value. The evidence suggests that as large blockholders' ownership and control increases, the negative effect on firm value driven by the extraction of private benefits of control and expropriating minority shareholders starts to exceed the incentive benefits of monitoring by the largest blockholder. A similar relationship between managerial equity ownership and firm valuation has been found by Morck, Shleifer, and Vishny (1988). Stulz (1988) formalizes this relationship by developing a model that predicts a concave relationship between managerial ownership and firm value. As managerial ownership and control increases, the negative effect on firm value associated with the entrenchment of manager-owners starts to exceed the incentive benefits of managerial ownership.

Table 7, panel B repeats the same analysis for the largest 2 blockholders' owner-

ship. The same inverse U-shaped relationship between changes in their ownership and firm valuation is predicted. However, when I consider the bottom 8 of the top 10 blockholders or all institutional investors excluding the top 2 blockholders (relatively small blockholders) as shown in panel C and panel D, the relationship between changes in these groups ownership and firm value is always positive for all levels of initial ownership. However, this positive relationship is strongest when the relatively small blockholders' initial ownership is low. At low levels of initial ownership, relatively small blockholders are less capable of monitoring and constraining large blockholders from consuming private benefits. Thus, the marginal benefit of an increase in the relatively small blockholders' ownership is higher at lower levels of initial ownership.

I estimate the following annual regression for the three initial group ownership categories (low, medium, and high)

$$AR_i = \alpha_{i,1} + \alpha_{i,2}\Delta IO_{\text{i, rank=j to k}} + \epsilon_i. \tag{1.3}$$

Table 8 shows that for low initial ownership of the largest one or two blockholders, the change in ownership's coefficients are significantly positively. On the other hand, such coefficients become significantly negative when initial ownership is medium and even more negative when initial ownership is high. The regression results support the claim that the relationship between changes in the relatively

large blockholders' ownership and firm valuation is inversely U-shaped.

1.4 Control Ratios

1.4.1 Control Change and Firm Value

To better capture the relationship between changes in outsiders' control and firm value, I create two simple measures of control: the initial percentage of shares owned by the largest two blockholders divided by the initial percentage of shares owned by the bottom eight of the top ten institutional investors (CR_1) and the initial percentage of shares owned by the largest two blockholders divided by the initial percentage of shares owned by all other institutional investors (CR_2), for each firm-year. Consider a situation where the largest two blockholders only own 2% of a firm while all other institutional investors own a small fraction of a percent. In this case, the control ratio would be very large despite the fact that there is no real control. To avoid such situations, I eliminate firm-years in which either the denominator or the nominator of the control ratios is below 5% of firm value.

Table 9 describes the distribution of the initial control ratios and the changes in control during the following year. Panel A provides various percentiles, the mean, and the standard deviation of the first initial control ratio (CR_1) and the change in CR_1 during the year. CR_1 has a mean of 0.90 and a standard deviation of 0.66. Its 1^{st} percentile is 0.37, which means that the percentage of shares held

by the largest 2 blockholders is approximately one third the percentage of shares owned by the bottom 8 of the top 10 blockholders. On the other hand, the 99^{th} percentile is 3.40, which implies that the largest 2 blockholders own more than 3 times the shares owned by the next 8 largest blockholders. Change in control is the difference between the control ratio in the end of the year and the control ratio in the beginning of the year. There are clearly large differences between control-changes across firms. Panel B, provides the same statistics for CR_2 and changes in CR_2.

I use the same sorting procedure described above to create 10 initial control stratified, change in control portfolios. The idea is to create 10 portfolios that have similar control at the beginning of each year and large differences in the change in control over the year. Table 10 provides various characteristics of these change in control portfolios. It shows that CR_1 and CR_2 remain similar while large differences in control change across portfolios are achieved. Initial capitalization and book-to-market are similar for the various portfolios. Abnormal returns are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months during the year in which control changes. Panel A illustrates a strong negative relationship between change in control and firm value. Abnormal returns are 15.0% for the largest control-decrease portfolio, while abnormal returns are -14.7% for the largest control-increase portfolio. Using

CR_2 as a measure of control, panel B indicates that abnormal returns are 28.2% (-23.1%) for the large decrease (increase) portfolio. The evidence suggests that an increase (decrease) in outsiders' control is received as negative (positive) news, which is consistent with the claim that an increase (decrease) in control leads to higher (lower) consumption of private benefits.

My two measures of control capture the relative ownership or the relative control of the largest two blockholders to relatively smaller institutional investors. However, true control of the firm should also capture total institutional ownership. Even if the control ratio is high but total institutional ownership is low, then true control is low. I tried to reduce this effect by restricting both the nominator and the denominator of my ratios to more than 5% of firm value. True control has two dimensions: aggregate institutional control and relative control. Aggregate control increases with institutional investors' aggregate ownership and relative control increases with the largest blockholders' ownership. To farther capture true control, I analyze the relationship between changes in the control ratio and firm value, based on both the level of institutional ownership as well as the level of initial control.

Table 11 shows the relationship between changes in control and firm value, based on the initial level of institutional ownership and control. Each December (1981-2006), firms are sorted based on initial institutional investors ownership

(top 10 institutional investors for panel A and all institutional investors for panel B) and the corresponding initial Control ratio. Low (high) initial group ownership represents the lowest (highest) three group ownership deciles. Low (high) initial control are defined the same way, while medium initial control represents the middle four control deciles. Firms are sorted into 5 initial control stratified, control change portfolios. Panel A shows that when the largest 10 institutional investors' ownership is low, thus institutional investors' control is low, the negative relationship between changes in relative control and firm value strengthens with the level of initial relative control. On the other hand, when the largest 10 institutional investors' ownership is high (high control), the negative relationship between changes in the control ratio and firm value is the same across the various levels of initial control. Panel B shows a similar result when initial ownership is defined as total institutional investors' ownership and the control ratio is measured as the top 2 blockholders' ownership divided by all other institutional investors' ownership. Overall, for all levels of initial ownership or control, an increase (decrease) in the control ratios is bad (good) news. However, the marginal cost of an increase in relative control is highest when initial institutional ownership is low or aggregate institutional control is low. When aggregate control is low, the marginal cost of a change in relative control increases with the initial level of relative control. However, when aggregate control is high, the marginal cost of a change in

relative control is similar no matter what is the initial level of relative control.

Table 12 shows the average estimated coefficients of the following annual regression

$$AR_i = \alpha_{i,1} + \alpha_{i,2}\Delta C_i + \alpha_{i,3} IO_i + \alpha_{i,4} IC_i + \alpha_{i,5}\Delta C_i * IO_i + \alpha_{i,6}\Delta C_i * IC_i + \epsilon_i \quad (1.4)$$

where ΔC_i is the control ratio at the end of the year divided by the control ratio at the beginning of the year; the initial ownership variable, IO_i, is the percentage of shares held by the particular group of institutional investors (the largest 10 investors in panel A and all institutional investors in panel B); and IC_i is the beginning of year control ratio (initial control). Table 12 shows that when the change in control coefficient is always negative and statistically significant, implying a negative relationship between change in control and firm value. Without including the interaction variables, the initial ownership and initial control coefficients are significantly negative. Ounce the interaction variables are included as regressors, the initial ownership coefficients becomes insignificant. The $\Delta C_i * IO_i$'s coefficient is also insignificant. The initial control coefficient becomes positively significant , while the change in control - initial control interaction variable is negative and statistically significant, implying that the negative relationship between changes in control and abnormal returns is stronger for higher levels of initial control.

1.4.2 Analysts' Following

Doidge, Karolyi, Lins, Miller, and Stulz (2009) and Stulz (1999) argue that listing on a U.S. exchange can impose indirect constraints on the extraction of private benefits by increasing the scrutiny of "gatekeepers" such as Analysts' and the media. Baker, Nofsinger, and Weaver (2002) and Lang, Lings, and Miller (2003) show that firms have more analyst and media coverage and forecast accuracy improves after cross-listing on a U.S. exchange. In this section, I hypothesis that Analysts' following does indeed constrain the consumption of private benefits and as a result reduces the negative relationship between changes in outside control and firm value.

I gather analysts' data from IBES. I proxy for analysts' scrutiny by the total number of analysts' earnings estimates during the year. Each year, I sort firms into 5 quintiles based on analysts' following. For each Analysts' following quintile, I form five initial control stratified, change in control portfolios. Table 13, panel A provides the results for the 5x5 analysts' following-change in control portfolios, where control is measured as the initial percentage of shares owned by the largest two blockholders divided by the initial percentage of shares owned by the bottom 8 of the top 10 institutional investors (CR_1). The last column shows abnormal returns' difference between the highest control-increase and highest control-decrease, for a given analysts' following category. For low analysts' following, abnormal re-

turns for the largest increase (decrease) in control portfolio are -12.6% (20.1%). The largest control-decrease portfolio has 33.3% higher returns than the largest control-increase portfolio. As analysts' following increases, the abnormal returns' difference between the two changes in control portfolios declines monotonically. When analysts' following is higher, the relationship between changes in control and firm value continue to be negative. However, the difference in returns between the highest control-decrease and highest control-increase drops to 8.1%. Panel B demonstrates that using the second measure of control provides similar results. The evidence suggests that analysts' following does constrain controlling shareholders from consuming private benefits. However, analysts' scrutiny is not sufficient to eliminate all consumption of private benefits of control.

I also estimate the following regression annually

$$AR_i = \alpha_{i,1} + \alpha_{i,2}\Delta C_i + \alpha_{i,3}IO_i + \alpha_{i,4}IC_i + \alpha_{i,5}AF_i + \alpha_{i,6}\Delta C_i * AF_i + \epsilon_i \quad (1.5)$$

where AF_i is the number of analysts' earnings estimates during the year for each firm i and all other variables are as described above. Table 14 shows the estimated coefficients. The coefficients on the interaction of both changes in control measures and analysts' following are positive and statistically significant. The regression results indicate that the negative relationship between changes in control and abnormal returns is weakened as analysts' following increases.

1.5 Conclusion

In chapter 1, I study how changes in relatively large and relatively small institutional blockholders' ownerships affect firm value. I find a negative (positive) relationship between changes in large (small) blockholders' ownership and abnormal returns. Furthermore, I illustrate that an increase in large blockholders' ownership as compared to an increase in small blockholders' ownership during year t is associated with lower sales growth, lower capital expenditure, lower R&D, lower advertising expenditure, and higher income before extraordinary items during year t+1. The results are consistent with the idea that changes in control affect firm operations and value. Large blockholders have been shown to extract private benefits of control from companies they run and thus expropriate minority shareholders (Williamson (1985), Jensen (1986), Grossman and Hart (1988), Barclay and Holderness (1989, 1992), Boycko, Shleifer, and Vishny (1993), Zingales (1994, 1995), among many others). Consistent with this literature, the evidence in this paper suggests that an increase in the relatively large blockholders' ownership raises the consumption of private benefits while an increase in the relatively small blockholders' ownership constrains large blockholders from expropriating minority shareholders.

A large block has been argued to be optimal as it reduces the free-rider prob-

lem and maximizes incentives to intervene (Shleifer and Vishny (1986), Admati, Pfleiderer, and Zechner (1994), Maug(1998), Kahn and Winton (1998) and Mello and Repullo (2004)). I find an inversely U-shaped relationship between changes in the largest blockholders' ownership and firm value. As large blockholders' ownership and control increase, the negative effect of firm value driven by the extraction of private benefits of control and expropriating minority shareholders starts to exceed the incentive benefits of monitoring by the largest blockholder.

I develop simple measures of outside control and find a strong negative relationship between changes in control and firm value. Moreover, analysts' scrutiny has been argued to impose indirect constraints on the extraction of private benefits (Stulz (1999), Baker, Nofsinger, and Weaver (2002), Lang, Lings, and Miller (2003) and Doidge, Karolyi, Lins, Miller, and Stulz (2009)). I find that the negative relationship between change in control and firm value declines monotonically as analysts' following increase. However, I show that even for the highest levels of analysts' scrutiny, this relationship continues to be negative, which suggests that analysts' scrutiny is not sufficient to eliminate the consumption of private benefits of control.

Table 1.1: Distribution of Initial Ownership and Change in Institutional Ownership by Size of Institutional Investors

The sample consists of annual data from 1981 to 2007. The final sample includes a total of 49,384 firm years for which institutional ownership is at least 10%. Panel A shows the distribution of the beginning of year percentage of shares owned and the change in ownership over the following year for the full sample. Various percentiles as well as means and standard deviations are provided. Panel B, C, D, and E show the data for various groups of institutional investors: largest blockholder, the largest 2 blockholders, the bottom 8 of the top 10 blockholders and all institutional investors excluding the top 2 blockholders, respectively.

Panel A: All Institutional Investors

Percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%	Mean	SD
Initial Ownership	0.1095	0.1421	0.1800	0.2838	0.4551	0.6378	0.7797	0.8488	0.9426	0.4690	0.2205
Δ Ownership	-0.2726	-0.1362	-0.0860	-0.0262	0.0181	0.0693	0.1394	0.1944	0.3402	0.0228	0.1062

Panel B: Largest Blockholder

Percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%	Mean	SD
Initial Ownership	0.0022	0.0142	0.0233	0.0425	0.0688	0.1004	0.1402	0.1744	0.3183	0.0800	0.0633
Δ Ownership	-0.1037	-0.0499	-0.0330	-0.0133	-0.0011	0.0131	0.0350	0.0527	0.1002	0.0000	0.0390

Panel C: Largest 2 Blockholders

Percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%	Mean	SD
Initial Ownership	0.0033	0.0231	0.0392	0.0714	0.1151	0.1660	0.2195	0.2585	0.3957	0.1265	0.0821
Δ Ownership	-0.1333	-0.0694	-0.0478	-0.0207	-0.0009	0.0207	0.0497	0.0715	0.1309	0.0000	0.0490

Panel D: Bottom 8 of the Top 10 Institutional Investors

Percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%	Mean	SD
Initial Ownership	0.0238	0.0493	0.0667	0.1072	0.1637	0.2250	0.2809	0.3148	0.3790	0.1702	0.0821
Δ Ownership	-0.1306	-0.0718	-0.0478	-0.0179	0.0059	0.0323	0.0653	0.0893	0.1479	0.0073	0.0504

Panel E: Excluding the Top 2 Blockholders

Percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%	Mean	SD
Initial Ownership	0.0243	0.0565	0.0829	0.1599	0.3082	0.4785	0.6048	0.6654	0.7620	0.3278	0.1945
Δ Ownership	-0.2332	-0.1185	-0.0756	-0.0255	0.0138	0.0607	0.1228	0.1734	0.3028	0.0193	0.0930

Table 1.2: Characteristics of Institutional Ownership Change Portfolios by Size of Institutional Investor

Each December (1981-2007), firms are sorted into 10 portfolios based on the fraction of shares held by group of institutional investors (largest blockholder, the largest 2 blockholders, the bottom 8 of the top 10 blockholders and all institutional investors excluding the top 2 blockholders, respectively). The firms in each initial institutional ownership decile are then further sorted into 10 portfolios based on the change in the fraction of shares held by the group of institutional investors over the following year (for a total of 100 initial institutional ownership, change in institutional ownership sorted portfolios). Firms are then reaggregated based on their change in ownership decile rank resulting in 10 initial ownership stratified, ownership change portfolios. Reported below are the time-series averages of the annual cross-sectional mean characteristics (and associated Fama-MacBeth (1973) t-statistics in parentheses) for each portfolio. Δ Ownership is the raw change in institutional ownership less the cross-sectional average change (each year). Abnormal returns are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months during the contemporaneous year. The F-statistic is based on the null hypothesis that the time-series averages of cross-sectional means do not differ across the ownership change portfolios.

Panel A: Full Sample

	Large Decrease	2	3	4	5	6	7	8	9	Large Increase	F-statistics
Initial % Ownership	0.4471	0.4435	0.4424	0.4412	0.4426	0.4426	0.4416	0.4416	0.4411	0.4397	0.02
Δ Ownership	-0.1435	-0.0594	-0.0271	-0.0069	0.0092	0.0250	0.0426	0.0654	0.1008	0.1964	417.08***
ln(Capital)	12.2547	12.6039	12.9506	13.0956	13.2319	13.1640	13.0738	12.8826	12.7350	12.5676	15.58***
ln(Book/Mkt.)	-0.4764	-0.4317	-0.4279	-0.4283	-0.4405	-0.4362	-0.4179	-0.4248	-0.4594	-0.4902	0.63
Abnormal Ret. (t=1 to 12)	-0.2349	-0.1297	-0.0803	-0.0440	-0.0261	-0.0017	0.0361	0.0675	0.1370	0.3026	81.64***
	(-11.26)	(-11.57)	(-9.48)	(-5.97)	(-3.64)	(-0.26)	(6.09)	(8.64)	(7.40)	(7.91)	
Abnormal Ret. (t=13 to 24)	0.0090	0.0172	0.0068	0.0058	0.0049	0.0013	-0.0178	0.0000	-0.0088	0.0013	0.80
	(0.42)	(1.28)	(0.92)	(0.99)	(0.52)	(0.18)	(-2.38)	(-0.00)	(-0.90)	(0.13)	
Abnormal Ret. (t=25 to 36)	0.0079	0.0016	0.0002	0.0076	0.0095	0.0101	-0.0025	-0.0127	0.0190	-0.0197	1.49
	(0.54)	(0.14)	(0.02)	(0.94)	(1.27)	(1.29)	(-0.33)	(-1.73)	(2.07)	(-1.83)	

Panel B: Largest Blockholder

	Large Decrease	2	3	4	5	6	7	8	9	Large Increase	F-statistics
Initial % Ownership	0.0908	0.0824	0.0823	0.0824	0.0832	0.0853	0.0874	0.0866	0.0842	0.0838	1.41
Δ Ownership	-0.0485	-0.0266	-0.0166	-0.0096	-0.0043	0.0004	0.0053	0.0118	0.0228	0.0616	1843.65***
ln(Capital)	13.0400	12.9820	12.9401	12.9740	12.8953	12.8484	12.8115	12.7694	12.7707	12.5659	3.35***
ln(Book/Mkt.)	-0.5120	-0.4631	-0.4408	-0.4420	-0.4067	-0.4064	-0.4137	-0.4191	-0.4575	-0.4729	1.33
Abnormal Ret. (t=1 to 12)	0.0536	0.0539	0.0294	0.0190	0.0027	-0.0192	-0.0156	-0.0169	-0.0306	-0.0314	9.82***
	(2.83)	(4.94)	(3.11)	(2.65)	(0.46)	(-2.48)	(-1.65)	(-2.33)	(-3.36)	(-2.54)	
Abnormal Ret. (t=13 to 24)	0.0132	0.0081	-0.0141	0.0011	0.0094	0.0081	-0.0024	-0.0023	0.0021	-0.0072	0.96
	(1.34)	(0.76)	(-2.29)	(0.13)	(1.22)	(0.90)	(-0.37)	(-0.31)	(0.20)	(-0.86)	
Abnormal Ret. (t=25 to 36)	0.0048	0.0000	-0.0059	-0.0051	0.0037	0.0144	0.0007	-0.0054	0.0093	0.0025	0.60
	(0.40)	(0.00)	(-0.70)	(-0.78)	(0.54)	(2.01)	(0.10)	(-0.85)	(1.03)	(0.24)	

Panel C: Largest 2 Blockholders

	Large Decrease	2	3	4	5	6	7	8	9	Large Increase	F-statistics
Initial % Ownership	0.1394	0.1324	0.1316	0.1320	0.1323	0.1346	0.1355	0.1355	0.1337	0.1327	0.38
Δ Ownership	-0.0655	-0.0368	-0.0238	-0.0144	-0.0067	0.0008	0.0088	0.0187	0.0337	0.0803	1814.43***
ln(Capital)	12.9455	12.9659	12.9966	13.0286	12.9155	12.9536	12.8016	12.7717	12.6619	12.5548	4.23***
ln(Book/Mkt.)	-0.4986	-0.4683	-0.4491	-0.4362	-0.4153	-0.4190	-0.4119	-0.4272	-0.4468	-0.4618	0.88
Abnormal Ret. (t=1 to 12)	0.0512	0.0401	0.0373	0.0115	0.0024	-0.0030	-0.0179	-0.0202	-0.0178	-0.0381	10.1***
	(3.15)	(4.41)	(4.10)	(1.74)	(0.40)	(-0.42)	(-2.57)	(-2.55)	(-2.31)	(-3.06)	
Abnormal Ret. (t=13 to 24)	0.0140	0.0074	-0.0016	-0.0030	0.0048	0.0041	-0.0080	0.0050	-0.0036	-0.0027	0.66
	(1.68)	(0.74)	(-0.21)	(-0.45)	(0.51)	(0.53)	(-1.32)	(0.68)	(-0.40)	(-0.36)	
Abnormal Ret. (t=25 to 36)	0.0026	0.0014	-0.0014	-0.0090	0.0077	0.0093	0.0012	0.0068	0.0089	-0.0062	0.47
	(0.24)	(0.17)	(-0.14)	(-1.22)	(0.65)	(1.27)	(0.16)	(0.78)	(1.02)	(-0.61)	

Panel D: Bottom 8 of the Top 10 Institutional Investors

	Large Decrease	2	3	4	5	6	7	8	9	Large Increase	F-statistics
Initial % Ownership	0.1642	0.1613	0.1605	0.1603	0.1603	0.1600	0.1597	0.1596	0.1595	0.1592	0.07
Δ Ownership	-0.0728	-0.0400	-0.0262	-0.0162	-0.0077	0.0010	0.0105	0.0226	0.0401	0.0833	1127.24***
ln(Capital)	12.1253	12.8490	13.1474	13.3015	13.2397	13.1529	13.0733	12.7925	12.6026	12.2804	25.14***
ln(Book/Mkt.)	-0.4433	-0.4564	-0.4567	-0.4547	-0.4425	-0.4477	-0.4342	-0.4284	-0.4319	-0.4377	0.12
Abnormal Ret. (t=1 to 12)	-0.1822	-0.0464	-0.0143	-0.0046	0.0045	0.0148	0.0177	0.0462	0.0657	0.1317	43.57***
	(-9.43)	(-3.87)	(-1.99)	(-0.76)	(0.76)	(2.18)	(2.66)	(7.66)	(4.61)	(5.59)	
Abnormal Ret. (t=13 to 24)	-0.0015	0.0116	0.0143	-0.0112	-0.0009	0.0050	0.0168	-0.0097	0.0070	-0.0166	1.45
	(-0.08)	(1.16)	(2.05)	(-1.98)	(-0.13)	(0.54)	(2.08)	(-1.71)	(0.76)	(-2.08)	
Abnormal Ret. (t=25 to 36)	0.0143	-0.0015	-0.0034	0.0036	0.0068	-0.0017	0.0057	0.0019	0.0068	-0.0094	0.52
	(1.08)	(-0.19)	(-0.42)	(0.41)	(0.65)	(-0.24)	(0.66)	(0.32)	(0.81)	(-0.84)	

Panel E: Excluding the Top 2 Blockholders

	Large Decrease	2	3	4	5	6	7	8	9	Large Increase	F-statistics
Initial % Ownership	0.3123	0.3096	0.3092	0.3072	0.3086	0.3079	0.3073	0.3079	0.3075	0.3063	0.02
Δ Ownership	-0.1374	-0.0711	-0.0441	-0.0266	-0.0124	0.0021	0.0181	0.0384	0.0695	0.1537	828.9***
ln(Capital)	12.1787	12.6068	12.9105	13.0664	13.2296	13.1776	13.0903	12.9405	12.7723	12.5826	17.74***
ln(Book/Mkt.)	-0.4689	-0.4468	-0.4281	-0.4257	-0.4319	-0.4302	-0.4307	-0.4156	-0.4505	-0.5038	0.74
Abnormal Ret. (t=1 to 12)	-0.2843	-0.1652	-0.0978	-0.0576	-0.0315	0.0051	0.0354	0.0739	0.1781	0.3667	101.54***
	(-13.55)	(-13.32)	(-8.99)	(-7.46)	(-4.49)	(0.90)	(6.22)	(10.49)	(9.22)	(8.37)	
Abnormal Ret. (t=13 to 24)	0.0009	0.0072	-0.0022	-0.0037	0.0084	0.0080	0.0029	0.0015	-0.0033	-0.0051	0.21
	(0.04)	(0.80)	(-0.26)	(-0.53)	(0.98)	(1.44)	(0.30)	(0.24)	(-0.33)	(-0.49)	
Abnormal Ret. (t=25 to 36)	0.0152	0.0012	-0.0091	0.0153	0.0017	0.0062	0.0007	-0.0042	0.0112	-0.0146	1.03
	(0.88)	(0.12)	(-1.16)	(2.00)	(0.16)	(1.12)	(0.09)	(-0.53)	(1.53)	(-1.40)	

Table 1.3: Changes in Institutional Group-Ownership and Firm Value (Regression Analysis).

The sample consists of annual data from 1981 to 2007. The sample includes a total of 49,384 firm years for which institutional ownership is at least 10%. The following regression is estimated annually

$$AR_i = \alpha_{i,1} + \alpha_{i,2}\Delta\text{IO}_{\text{i, rank=j to k}} + \alpha_{i,3}\Delta\text{IO}_{\text{i, rank=k+1 to N}} + \epsilon_i$$

where abnormal returns, AR_i, are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months during the year, and the change in institutional group ownership, $\Delta\text{IO}_{\text{i, rank=j to k}}$, is the difference between end of year and beginning of year percentage of shares held by the particular group of institutional investors, for firm i. The group of institutional shareholders is based on the rank of their holdings (for example, rank=3 to 8 implies the bottom 8 of the largest 10 shareholders). Average coefficients across the 27 annual regressions with Fama-MacBeth (1973) t-statistics in parentheses are provided.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ΔIO_{all}	1.3893						
	(12.34)						
$\Delta\text{IO}_{\text{rank=1}}$		-0.5421					
		(-5.55)					
$\Delta\text{IO}_{\text{rank=1 to 2}}$			-0.4199			-0.7994	-0.5539
			(-4.69)			(-8.46)	(-8.21)
$\Delta\text{IO}_{\text{rank=3 to 8}}$				1.6521		1.8108	
				(8.81)		(9.31)	
$\Delta\text{IO}_{\text{rank=3 to N}}$					2.0107		2.0221
					(15.55)		(15.65)
Constant	0.0043	0.0043	0.0043	0.0043	0.0043	0.0043	0.0043
	(1.01)	(1.01)	(1.01)	(1.01)	(1.01)	(1.01)	(1.01)

Table 1.4: Change in Ownership and Future Performance.

Each year from 1981 to 2006, I regress changes in sales, changes in capex, changes in R&D, changes in advertising expenses (Adv), and changes in income before extraordinary items (ibei) during year t+1 (t+2) on changes in the largest 2 blockholders' ownership ($\Delta IO_{\text{rank=1 to 2, t}}$) during year t, changes in the bottom 8 of the top 10 blockholders ownership ($\Delta IO_{\text{rank=3 to 10, t}}$) during year t, the beginning of year t's natural logarithm of total assets (Size), and an industry dummy. Average coefficients across the 26 annual regressions with Fama-MacBeth (1973) t-statistics in parentheses are provided.

	$\frac{\Delta \text{Sales}_{t+1}}{\text{Sales}_t}$	$\frac{\Delta \text{Capex}_{t+1}}{\text{Sales}_t}$	$\frac{\Delta \text{RaD}_{t+1}}{\text{Sales}_t}$	$\frac{\Delta \text{Ad-exp}_{t+1}}{\text{Sales}_t}$	$\frac{\Delta \text{IBEI}_{t+1}}{\text{Sales}_t}$	$\frac{\Delta \text{Sales}_{t+2}}{\text{Sales}_{t+1}}$	$\frac{\Delta \text{Capex}_{t+2}}{\text{Sales}_{t+1}}$	$\frac{\Delta \text{RaD}_{t+2}}{\text{Sales}_{t+1}}$	$\frac{\Delta \text{Ad-exp}_{t+2}}{\text{Sales}_{t+1}}$	$\frac{\Delta \text{IBEI}_{t+2}}{\text{Sales}_{t+1}}$
$\Delta IO_{\text{rank=1 to 2, t}}$	-0.008	-0.002	-0.006	-0.001	0.008	-0.002	-0.003	-0.001	-0.002	-0.002
	(-2.77)	(-1.22)	(-1.25)	(-1.19)	(2.03)	(-0.53)	(-1.43)	(-0.48)	(-2.58)	(-0.30)
$\Delta IO_{\text{rank=3 to 10, t}}$	0.018	0.007	0.007	0.003	-0.003	0.008	0.002	0.009	0.002	-0.007
	(3.74)	(2.57)	(1.75)	(2.44)	(-0.69)	(1.61)	(1.03)	(0.77)	(1.47)	(-0.81)
Size_t	-0.009	-0.001	-0.004	-0.0001	0.004	-0.010	-0.001	-0.002	-0.0005	0.004
	(-5.66)	(-2.74)	(-2.05)	(-0.36)	(3.30)	(-6.18)	(-1.74)	(-2.06)	(-1.90)	(2.21)
3-Digit SICC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.085	-0.027	0.033	0.005	-0.037	0.103	-0.008	0.002	0.004	-0.024
	(1.91)	(-1.55)	(1.46)	(1.59)	(-2.24)	(3.83)	(-0.61)	(0.12)	(0.84)	(-0.95)

Table 1.5: The Effect of Current Ownership-Changes in Future Ownership-Changes.

For each year t, I find the largest two blockholders for each firm and regress future changes in the large blockholders' ownership on lag ownership changes as well as lag returns, size, and industry dummies. First, I follow the largest 2 blockholders each year allowing for the identity of the blockholders to change. Then, I select the largest 2 blockholders at time t and follow their ownership changes even if they are no longer the largest 2 blockholders at times t+i. Average coefficients across the 26 annual regressions with Fama-MacBeth (1973) t-statistics in parentheses are provided.

	Allowing the Largest 2 Blockholders to Change			Following the Same Largest 2 blockholders		
	Δ Own.$_{t+1,t+2}$	Δ Own.$_{t+2,t+3}$	Δ Own.$_{t+3,t+4}$	Δ Own.$_{t+1,t+2}$	Δ Own.$_{t+2,t+3}$	Δ Own.$_{t+3,t+4}$
Δ Ownership$_{t,t+1}$	-0.201	-0.111	-0.096	-16.525	-5.466	-5.675
	(-14.43)	(-5.31)	(-6.21)	(-2.05)	(-2.13)	(-1.06)
Δ Ownership$_{t+1,t+2}$		-0.206	-0.104		-0.088	0.007
		(-15.76)	(-3.93)		(-2.90)	(0.08)
Δ Ownership$_{t+2,t+3}$			-0.199			-0.059
			(-14.850			(-3.78)
Returns$_{t,t+1}$	-0.025			-9.801		
	(-1.79)			(-1.30)		
Returns$_{t+1,t+2}$		-0.047			3.972	
		(-2.98)			(1.09)	
Returns$_{t+2,t+3}$			-0.052			5.133
			(-3.01)			(0.81)
%Ownership$_t$	-1.148	-0.934	-0.833	-44.265	16.354	3.244
	(-20.70)	(-14.67)	(-10.58)	(-1.62)	(1.11)	(0.11)
Size$_t$	-0.010	-0.007	-0.004	0.489	0.676	0.950
	(-3.18)	(-2.13)	(-1.28)	(0.57)	(1.30)	(0.85)
3-Digit SIC code	yes	yes	yes	yes	yes	yes
Constant	0.358	0.581	0.443	1.594	-19.739	-14.841
	(4.62)	(3.09)	(4.35)	(0.14)	(-1.21)	(-0.67)

Table 1.6: Lag Returns, Changes in Ownership, and Firm Performance

Each year from 1981 to 2006, I regress changes in sales, changes in capex, changes in R&D, changes in advertising expenses (Adv), and changes in income before extraordinary items (ibei) during year t+1 on changes in the largest 2 blockholders' ownership ($\Delta IO_{\text{rank=1 to 2, t}}$) during year t, changes in the bottom 8 of the top 10 blockholders ownership ($\Delta IO_{\text{rank=3 to 10, t}}$) during year t, returns during year t, the beginning of year t's natural logarithm of total assets (Size), and an industry dummy. Average coefficients across the 26 annual regressions with Fama-MacBeth (1973) t-statistics in parentheses are provided.

	$\frac{\Delta \text{Sales}_{t+1}}{\text{Sales}_t}$	$\frac{\Delta \text{Capex}_{t+1}}{\text{Sales}_t}$	$\frac{\Delta \text{RaD}_{t+1}}{\text{Sales}_t}$	$\frac{\Delta \text{Ad-exp}_{t+1}}{\text{Sales}_t}$	$\frac{\Delta \text{IBEI}_{t+1}}{\text{Sales}_t}$
$\Delta IO_{\text{rank=1 to 2, t}}$	-0.001	0.004	-0.017	0.000	0.014
	(-0.20)	(0.83)	(-1.54)	(-0.37)	(1.67)
$\Delta IO_{\text{rank=3 to 10, t}}$	0.000	-0.001	-0.015	0.002	0.000
	(-0.04)	(-0.19)	(-1.12)	(2.06)	(-0.02)
Returns_t	0.074	0.034	0.035	0.004	-0.014
	(9.84)	(5.07)	(2.14)	(5.60)	(-0.71)
Size_t	-0.009	0.001	-0.006	0.000	0.011
	(-6.02)	(0.32)	(-2.68)	(-0.05)	-2.96
3-Digit SICC	Yes	Yes	Yes	Yes	Yes
Constant	0.096	-0.029	0.066	0.002	-0.055
	(2.38)	(-0.71)	(1.82)	(0.72)	(-1.50)

Table 1.7: The Effect of Change in Ownership on Firm Value Based on the Level of Initial Ownership.

Each December (1981-2007), firms are sorted based on the fraction of shares owned by group of institutional investors (largest blockholder, the largest 2 blockholders, the bottom 8 of the top 10 blockholders and all institutional investors excluding the top 2 blockholders, respectively). Low (high) ownership represents the lowest (highest) three ownership deciles, while medium ownership represents the middle four deciles. In order to keep the level of initial ownership within each ownership change decile constant, for each ownership category, firms are sorted into 10 portfolios based on the fraction of shares held. The firms in each initial institutional ownership decile are then further sorted into 10 portfolios based on the change in the fraction of shares held by the group of institutional investors over the following year (for a total of 100 initial institutional ownership, change in institutional ownership sorted portfolios). Firms are then reaggregated based on their change in ownership decile rank resulting in 10 initial ownership stratified, ownership change portfolios. Reported below are the time-series average of the annual cross-sectional abnormal returns (and associated Fama-MacBeth (1973) t-statistics in parentheses) for each portfolio. Abnormal returns are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months during the contemporaneous year.

Panel A: Largest Blockholder

	Large Decrease	2	3	4	Large Increase	Inc-Dec
Low Ownership	-0.0504	-0.0236	-0.0017	0.0083	0.0587	0.109
	(-3.35)	(-3.37)	(-0.16)	(0.98)	(2.77)	(4.38)
Medium Ownership	0.0584	0.0230	-0.0068	-0.0035	-0.0212	-0.080
	(3.27)	(3.29)	(-0.82)	(-0.42)	(-2.06)	(-3.64)
High Ownership	0.0628	0.0394	0.0071	-0.0236	-0.0336	-0.096
	(3.80)	(3.96)	(0.69)	(-2.59)	(-2.65)	(-3.94)
H-L	0.113	0.063	0.009	-0.032	-0.092	
	(4.96)	(4.58)	(0.58)	(-3.52)	(-3.40)	

Panel B: Largest 2 Blockholders

	Large Decrease	2	3	4	Large Increase	Inc-Dec
Low	-0.0847	-0.0249	-0.0033	0.0223	0.0841	0.169
	(-5.58)	(-2.64)	(-0.32)	(2.00)	(3.38)	(6.12)
Medium	0.0320	0.0384	0.0021	-0.0018	-0.0142	-0.046
	(2.14)	(3.58)	(0.30)	(-0.22)	(-1.27)	(-2.15)
High	0.0564	0.0415	0.0069	-0.0246	-0.0441	-0.101
	(3.98)	(5.52)	(0.69)	(-2.64)	(-3.51)	(-4.61)
H-L	0.141	0.066	0.010	-0.047	-0.128	
	(6.54)	(5.28)	(0.67)	(-3.14)	(-4.48)	

Panel C: Bottom 8 of the Top 10 Institutional Investors

	Large Decrease	2	3	4	Large Increase	H-L
Low Ownership	-0.163	-0.050	-0.015	0.066	0.247	0.410
	(-10.69)	(-5.33)	(-1.88)	(4.94)	(6.46)	(8.93)
Medium Ownership	-0.112	0.002	0.026	0.017	0.055	0.166
	(-6.04)	(0.30)	(3.86)	(1.85)	(3.40)	(5.50)
High Ownership	-0.070	0.011	0.013	0.007	0.002	0.072
	(-4.86)	(1.23)	(1.56)	(0.58)	(0.13)	(2.94)
H-L	0.093	0.061	0.028	-0.059	-0.245	
	(5.33)	(4.51)	(2.08)	(-2.93)	(-5.56)	

Panel D: Excluding the Top 2 Blockholders

	Large Decrease	2	3	4	Large Increase	H-L
Low	-0.241	-0.096	-0.023	0.066	0.359	0.601
	(-14.58)	(-7.54)	(-2.62)	(6.85)	(7.71)	(10.29)
Medium	-0.234	-0.089	-0.016	0.059	0.264	0.499
	(-11.70)	(-8.83)	(-3.06)	(6.94)	(7.93)	(10.02)
High	-0.190	-0.062	0.002	0.045	0.152	0.342
	(-11.98)	(-7.66)	(0.31)	(5.05)	(8.32)	(11.08)
H-L	0.051	0.035	0.025	-0.020	-0.207	
	(4.13)	(2.73)	(2.21)	(-1.65)	(-5.39)	

Table 1.8: The Effect of Change in Ownership on Firm Value based on the Level of Initial Ownership (Regression Analysis)

The sample consists of annual data from 1981 to 2007. The sample includes a total of 57,837 firm years. The following regression is estimated annually

$$AR_i = \alpha_{i,1} + \alpha_{i,2}\Delta\text{IO}_{\text{i, rank=j to k}} + \epsilon_i$$

where abnormal returns, AR_i, are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months during the year, and the change in institutional group ownership, $\Delta\text{IO}_{\text{i, rank=j to k}}$, is the difference between end of year and beginning of year percentage of shares held by the particular group of institutional investors, for firm i. The group of institutional shareholders is based on the rank of their holdings (for example, rank=3 to 8 implies the bottom 8 of the largest 10 shareholders). Low (medium) group ownership represents the lowest (highest) three ownership deciles, while medium ownership represents the middle four deciles of all firms each year. Average coefficients across the 27 annual regressions with Fama-MacBeth (1973) t-statistics in parentheses are provided.

Panel A: Largest Blockholder

	Initial Group Ownership		
	Low	Medium	High
$\Delta\text{IO}_{\text{rank=1}}$	0.8606	-0.4497	-0.5647
	(3.27)	(-2.77)	(-4.89)
Constant	-0.0094	0.0114	0.0003
	(-1.17)	(2.47)	(0.04)

Panel B: Largest 2 Blockholders

	Initial Group Ownership		
	Low	Medium	High
$\Delta\text{IO}_{\text{rank=1 to 2}}$	1.1909	-0.3143	-0.5002
	(5.05)	(-2.04)	(-4.45)
Constant	-0.0141	0.0129	-0.0043
	(-1.47)	(2.77)	(-0.67)

Panel C: Bottom 8 of the Top 10

	Initial Group Ownership		
	Low	Medium	High
$\Delta\text{IO}_{\text{rank=3 to 8}}$	4.6664	2.0116	0.6845
	(11.55)	(7.59)	(4.18)
Constant	-0.0399	-0.0020	0.0141
	(-5.07)	(-0.40)	(1.62)

Panel D: Excluding Top 2

	Initial Group Ownership		
	Low	Medium	High
$\Delta\text{IO}_{\text{rank=3 to N}}$	3.0151	2.2294	1.4854
	(13.13)	(14.78)	(13.39)
Constant	-0.0238	-0.0104	0.0337
	(-2.88)	(-2.09)	(4.62)

Table 1.9: Distribution of the Control Ratio.

The sample consists of annual data from 1981 to 2007. The final sample includes a total of 57,837 firm years. Panel A shows the distribution of the beginning of year control ratio and the change in the control ratio over the following year. In panel A, the control ratio is defined as the percentage of shares owned by the largest two blockholders divided by the percentage of shares owned by the bottom eight of the top ten institutional investors for each firm in each year. In Panel B, the control ratio is defined as the ratio of the percentage of shares owned by the largest two blockholders and the percentage of shares owned by all other institutional investors. Various percentile as well as mean and standard deviation are provided.

Panel A: The Largest 2 Blockholders' to the Bottom 8 of the Top 10 institutional Investors' Ownership as the Control Ratio

Percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%	Mean	SD
Initial Control Ratio	0.3676	0.4256	0.4693	0.5667	0.7335	1.0068	1.4357	1.8734	3.3978	0.8999	0.6562
Δ Control Ratio	-1.3711	-0.6017	-0.3866	-0.1641	-0.0099	0.1420	0.3559	0.5573	1.2567	-0.0150	0.4628

Panel B: The Largest 2 Blockholders' to Other Institutional Investors' Ownership as the Control Ratio

Percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%	Mean	SD
Initial Control Ratio	0.1211	0.1626	0.1955	0.2721	0.4135	0.6954	1.1599	1.5832	3.0004	0.6009	0.6666
Δ Control Ratio	-1.3213	-0.5274	-0.3029	-0.1108	-0.0102	0.0816	0.2534	0.4505	1.1766	-0.0206	0.4156

Table 1.10: Characteristics of the Control Ratio.

Each December (1981-2007), firms are sorted into 10 portfolios based on the control ratio. In panel A, the control ratio is defined as the percentage of shares owned by the largest two blockholders divided by the percentage of shares owned by the bottom eight of the top ten institutional investors for each firm in each year. In Panel B, the control ratio is defined as the ratio of the percentage of shares owned by the largest two blockholders and the percentage of shares owned by all other institutional investors. The firms in each initial control decile are then further sorted into 10 portfolios based on the change in control over the following year (for a total of 100 initial control, change in control sorted portfolios). Firms are then reaggregated based on their change in control decile rank resulting in 10 initial control stratified, control change portfolios. Reported below are the time-series average of the annual cross-sectional mean characteristics (and associated Fama-MacBeth (1973) t-statistics in parentheses) for each portfolio. Δ Ownership is the raw change in institutional ownership less the cross-sectional average change (each year). Abnormal returns are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months during the contemporaneous year. The F-statistic is based on the null hypothesis that the time-series averages of cross-sectional means do not differ across the ownership change portfolios.

Panel A: The Largest 2 Blockholders' to the Bottom 8 of the Top 10 institutional Investors' Ownership as the Control Ratio

	Large Decrease	2	3	4	5	6	7	8	9	Large Increase	F-statistics
Initial Control Ratio	1.0694	0.9175	0.8846	0.8771	0.8794	0.8738	0.8759	0.8871	0.8888	0.9239	31.76^{***}
Δ Control Ratio	-0.5031	-0.3101	-0.2247	-0.1561	-0.0979	-0.0351	0.0364	0.1219	0.2519	0.6994	766.65^{***}
ln(Capital)	12.9313	12.9511	12.9740	12.9528	13.0066	13.0312	12.9964	12.9091	12.6609	12.4163	4.77^{***}
ln(Book/Mkt.)	-0.4891	-0.4556	-0.4458	-0.4279	-0.4125	-0.4160	-0.4411	-0.4487	-0.4203	-0.4508	0.63
Abnormal Ret.	0.1495	0.0867	0.0486	0.0183	0.0090	-0.0025	-0.0307	-0.0286	-0.0635	-0.1473	52.51^{***}
	(7.20)	(6.33)	(4.48)	(2.58)	(1.48)	(-0.34)	(-5.30)	(-3.78)	(-7.07)	(-9.94)	

Panel B: The Largest 2 Blockholders' to Other Institutional Investors' Ownership as the Control Ratio

	Large Decrease	2	3	4	5	6	7	8	9	Large Increase	F-statistics
Initial Control Ratio	0.7632	0.6313	0.5894	0.5806	0.5860	0.5803	0.5774	0.5847	0.6058	0.6256	24.36^{***}
Δ Control Ratio	-0.4278	-0.2607	-0.1864	-0.1334	-0.0859	-0.0406	0.0133	0.0818	0.1866	0.5700	482.99^{***}
ln(Capital)	13.0429	13.0241	13.0662	13.0343	13.0566	13.0142	12.9147	12.7757	12.5613	12.3397	8.17^{***}
ln(Book/Mkt.)	-0.5032	-0.4728	-0.4518	-0.4265	-0.4310	-0.4137	-0.4129	-0.4118	-0.4083	-0.4739	1.27
Abnormal Ret.	0.2819	0.1614	0.0960	0.0424	-0.0012	-0.0240	-0.0494	-0.0905	-0.1363	-0.2311	93.88^{***}
	(8.03)	(8.42)	(10.68)	(6.46)	(-0.22)	(-3.87)	(-7.57)	(-11.97)	(-10.53)	(-13.31)	

Table 1.11: The Effect of Control-Change on Firm Value Based on the Level of Initial Ownership.

Each December (1981-2007), firms are sorted based on initial institutional investors' ownership (top 10 institutional investors for panel A and all institutional investors for panel B) and the corresponding initial Control ratio. Low (high) initial group ownership represents the lowest (highest) three group ownership deciles. Low (high) initial control are defined the same way, while medium initial control represents the middle four control deciles. Firms are sorted into 10 portfolios based on initial control. The firms in each initial control decile are then further sorted into 5 portfolios based on the change in control over the following year (for a total of 50 initial control, change in control sorted portfolios). Firms are then reaggregated based on their change in control quintile rank resulting in 5 initial control stratified, control change portfolios. Reported below are the time-series average of the annual cross-sectional abnormal returns (and associated Fama-MacBeth (1973) t-statistics in parentheses) for each portfolio. Abnormal returns are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months during the contemporaneous year.

Panel A: The Largest 2 Blockholders' to the Bottom 8 of the Top 10 institutional Investors' Ownership as the Control Ratio

Low Initial Ownership

	Change in Control					
	Large Decrease	2	3	4	Large Increase	Inc-Dec
Low Initial Control	0.1628	0.0305	0.0255	0.0033	-0.0906	-0.2534
	(3.90)	(1.03)	(0.97)	(0.12)	(-5.08)	(-4.78)
Medium initial Control	0.2227	0.1005	0.0196	-0.0194	-0.1302	-0.3529
	(7.64)	(5.00)	(1.05)	(-1.13)	(-7.89)	(-10.67)
High Initial Control	0.3482	0.0630	-0.0069	-0.1034	-0.1769	-0.5251
	(6.90)	(3.79)	(-0.53)	(-6.96)	(-14.27)	(-9.08)
H-L	0.185	0.032	-0.032	-0.107	-0.086	
	(3.17)	(0.99)	(-1.10)	(-3.79)	(-4.90)	

High Initial Ownership

	Change in Control					
	Large Decrease	2	3	4	Large Increase	Inc-Dec
Low	0.0419	0.0196	0.0025	-0.0351	-0.0970	-0.1389
	(5.02)	(1.80)	(0.28)	(-3.62)	(-7.37)	(-8.48)
Medium	0.0386	0.0298	0.0100	-0.0070	-0.0959	-0.1346
	(3.00)	(2.46)	(0.75)	(-0.66)	(-6.51)	(-6.29)
High	0.0373	-0.0024	0.0090	0.0069	-0.0884	-0.1257
	(1.89)	(-0.13)	(0.43)	(0.42)	(-5.03)	(-4.88)
H-L	-0.005	-0.022	0.006	0.042	0.009	
	(-0.21)	(-0.92)	(0.28)	(2.64)	(0.42)	

Panel B: The Largest 2 Blockholders' to Other Institutional Investors' Ownership as the Control Ratio

Low Initial Ownership

	Change in Control					
	Large Decrease	2	3	4	Large Increase	Inc-Dec
Low Initial Control	0.1669	0.0232	0.0070	-0.0132	-0.1180	-0.2848
	(2.74)	(0.59)	(0.27)	(-0.37)	(-5.04)	(-4.16)
Medium initial Control	0.3105	0.0957	0.0339	-0.0508	-0.1620	-0.4726
	(7.11)	(4.68)	(1.67)	(-3.40)	(-9.75)	(-9.67)
High Initial Control	0.4134	0.0840	-0.0268	-0.1201	-0.2147	-0.6282
	(7.89)	(5.15)	(-1.80)	(-7.88)	(-13.62)	(-9.97)
H-L	0.247	0.061	-0.034	-0.107	-0.097	
	(4.66)	(1.41)	(-1.13)	(-2.79)	(-3.99)	

High Initial Ownership

	Change in Control					
	Large Decrease	2	3	4	Large Increase	Inc-Dec
Low	0.1208	0.0496	0.0060	-0.0565	-0.1560	-0.2769
	(7.75)	(5.74)	(0.69)	(-6.06)	(-9.90)	(-10.32)
Medium	0.1778	0.0761	-0.0164	-0.0947	-0.2376	-0.4154
	(7.49)	(5.63)	(-2.03)	(-10.72)	(-11.93)	(-11.05)
High	0.1394	0.0865	-0.0063	-0.0449	-0.1790	-0.3184
	(3.86)	(1.90)	(-0.25)	(-1.71)	(-7.87)	(-7.32)
H-L	0.019	0.037	-0.012	0.012	-0.023	
	(0.43)	(0.82)	(-0.50)	(0.46)	(-0.85)	

Table 1.12: Change in Control and Firm Value (Regression Analysis).

The sample consists of annual data from 1981 to 2007. The sample includes a total of 57,837 firm years. The following regression is estimated annually

$$AR_i = \alpha_{i,1} + \alpha_{i,2}\Delta C_i + \alpha_{i,3}IO_i + \alpha_{i,4}IC_i + \alpha_{i,5}\Delta C_i * IO_i + \alpha_{i,6}\Delta C_i * IC_i + \epsilon_i$$

where abnormal returns, AR_i, are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months during the year for firm i; ΔC_i is the control ratio at the end of the year divided by the control ratio at the beginning of the year; the initial ownership variable, IO_i, is the percentage of shares held by the particular group of institutional investors (the largest 10 investors in panel A and all institutional investors in panel B); and IC_i is the beginning of year control ratio (initial control). CR_1 is defined as the percentage of shares owned by the largest two blockholders divided by the percentage of shares owned by the bottom eight of the top ten institutional investors for each firm in each year. CR_2 is the ratio of the percentage of shares owned by the largest two blockholders to the percentage of shares owned by all other institutional investors. Average coefficients across the 27 annual regressions with Fama-MacBeth (1973) t-statistics in parentheses are provided.

	(1)	(2)	(3)		(4)	(5)	(6)
Δ CR_1	-0.159	-0.164	-0.092	Δ CR_2	-0.158	-0.231	-0.147
	(-9.83)	(-10.11)	(-4.38)		(-12.84)	(-13.89)	(-5.23)
Initial Own. (IO)		-0.103	-0.080	IO		-0.071	-0.036
		(-2.21)	(-0.91)			(-2.69)	(-0.64)
Initial Control (IC)		-0.011	0.075	IC		-0.029	0.113
		(-2.15)	(3.77)			(-5.85)	(4.89)
Δ CR_1 *IO			-0.003	Δ CR_2 *IO			-0.032
			(-0.04)				(-0.65)
Δ CR_1 *IC			-0.099	Δ CR_2 *IC			-0.159
			(-4.51)				(-6.52)
Constant	0.172	0.224	0.151	Constant	0.174	0.305	0.221
	(8.68)	(7.99)	(5.24)		(11.75)	(9.81)	(6.01)

Table 1.13: Change in Control and Analysts' Following.

Each December (1981-2007), firms are sorted into 5x5 portfolios based on change in control and the degree of analysts' following. In panel A, the control ratio is defined as the percentage of shares owned by the largest two blockholders divided by the percentage of shares owned by the bottom eight of the top ten institutional investors for each firm in each year. In Panel B, the control ratio is defined as the ratio of the percentage of shares owned by the largest two blockholders and the percentage of shares owned by all other institutional investors. Firms are sorted into 10 portfolios based on initial control. Each initial control decile are then further sorted into 5 portfolios based on the change in control over the following year (for a total of 50 initial control, change in control sorted portfolios). Firms are then reaggregated based on their change in control quintiles rank resulting in 5 initial control stratified, control change portfolios. Firms are also sorted into 5 portfolios based on analysts' followings. Analysts' followings is measured by the total number of earnings estimates. Reported below are the time-series average of the annual cross-sectional mean abnormal returns (and associated Fama-MacBeth (1973) t-statistics in parentheses) for each of the 5x5 change in control and analysts' followings portfolios. Abnormal returns are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months during the contemporaneous year.

Panel A: The Largest 2 Blockholders' to the Bottom 8 of the Top 10 institutional Investors' Ownership as the Control Ratio

	Change in Control					
	Large Decrease	2	3	4	Large Increase	Inc-Dec
Low Analysts'	0.2076	0.0668	-0.0039	-0.0287	-0.1257	-0.3334
Following	(7.78)	(4.10)	(-0.31)	(-2.18)	(-7.73)	(-8.57)
2	0.1365	0.0213	-0.0006	-0.0438	-0.1219	-0.2585
	(5.76)	(1.85)	(-0.04)	(-4.05)	(-7.36)	(-8.05)
3	0.0937	0.0238	-0.0063	-0.0374	-0.1093	-0.2030
	(4.92)	(1.97)	(-0.58)	(-3.59)	(-8.67)	(-8.05)
4	0.0826	0.0194	0.0178	-0.0144	-0.0799	-0.1624
	(6.06)	(1.88)	(2.28)	(-1.48)	(-4.65)	(-7.29)
High Analysts'	0.0280	0.0466	0.0018	-0.0079	-0.0531	-0.0810
Following	(2.26)	(2.15)	(0.18)	(-1.03)	(-5.05)	(-5.71)
H-L	-0.180	-0.020	0.006	0.021	0.073	
	(-7.33)	(-0.84)	(0.39)	(1.31)	(3.56)	

Panel B: The Largest 2 Blockholders' to Other Institutional Investors' Ownership as the Control Ratio

	Large Decrease	2	3	4	Large Increase	Inc-Dec
Low Analysts'	0.3247	0.0836	-0.0258	-0.0560	-0.1762	-0.501
Following	(10.26)	(5.08)	(-1.87)	(-3.86)	(-10.47)	(-10.97)
2	0.2798	0.0618	-0.0065	-0.0876	-0.2001	-0.480
	(8.17)	(5.88)	(-0.57)	(-7.51)	(-11.20)	(-9.96)
3	0.2149	0.0727	-0.0218	-0.0878	-0.1960	-0.411
	(7.98)	(5.92)	(-2.77)	(-8.42)	(-10.70)	(-9.48)
4	0.1772	0.0598	0.0088	-0.0567	-0.1784	-0.356
	(6.97)	(4.75)	(1.18)	(-5.13)	(-10.77)	(-9.51)
High Analysts'	0.1113	0.0442	-0.0031	-0.0590	-0.1284	-0.240
Following	(4.11)	(3.80)	(-0.40)	(-7.19)	(-9.58)	(-7.16)
H-L	-0.213	-0.039	0.023	-0.003	0.048	
	(-6.82)	(-2.17)	(1.61)	(-0.16)	(2.91)	

Table 1.14: Analysts' Following (Regression Analysis).

The sample consists of annual data from 1981 to 2007. The sample includes a total of 57,837 firm years. The following regression is estimated annually

$$AR_i = \alpha_{i,1} + \alpha_{i,2}\Delta C_i + \alpha_{i,3}IO_i + \alpha_{i,4}IC_i + \alpha_{i,5}AF_i + \alpha_{i,6}\Delta C_i * AF_i + \epsilon_i$$

where abnormal returns, AR_i, are computed by compounding monthly capitalization decile and book-to-market decile adjusted returns for the 12 months during the year for firm i; ΔC_i is the control ratio at the end of the year divided by the control ratio at the beginning of the year; the initial ownership variable, IO_i, is the percentage of shares held by the particular group of institutional investors (the largest 10 investors in panel A and all institutional investors in panel B); IC_i is the beginning of year control ratio (initial control); and AF_i is the number of analysts' earnings estimates during the year for each firm i. CR_1 is defined as the percentage of shares owned by the largest two blockholders divided by the percentage of shares owned by the bottom eight of the top ten institutional investors for each firm in each year. CR_2 is the ratio of the percentage of shares owned by the largest two blockholders to the percentage of shares owned by all other institutional investors. Average coefficients across the 27 annual regressions with Fama-MacBeth (1973) t-statistics in parentheses are provided.

	(1)	(2)		(3)	(4)
Δ CR_1	-0.177	-0.260	Δ CR_2	-0.202	-0.208
	(-11.94)	(-13.22)		(-9.15)	(-9.55)
Initial Own. (IO)		-0.067	IO		-0.097
		(-2.18)			(-2.13)
Initial Control (IC)		-0.030	IC		-0.013
		(-5.71)			(-2.26)
Analysts' Following (AF)	-0.163	-0.307	AF	-0.499	-0.533
	(-1.53)	(-2.38)		(-4.49)	(-4.83)
Δ CR_1*AF	0.177	0.313	Δ CR_2*AF	0.492	0.498
	(2.17)	(2.91)		(4.73)	(4.94)
Constant	0.192	0.333	Constant	0.215	0.270
	(11.82)	(10.61)		(8.98)	(8.84)

2

Governance through Trading: Evidence from Trading Activity around Earnings Announcements

2.1 Introduction

Corporate governance plays a significant role in reducing agency costs arising from the separation of ownership and control and enhancing firm value by insuring that managers exert effort and act in shareholder's interest. Traditional theories argue that large institutional blockholders have strong incentives to monitor managers while small individual investors are passive. Institutional investors can provide active monitoring that is difficult for smaller, more passive or less-informed investors[1]. This view of monitoring is based on the idea of direct intervention, or

[1] 'Examples include Black (1992), Kaplan and Minton (1994), Wahal (1996), Kahn and Winton (1998), Del Guercio and Hawkins (1998), Gillan and Starks (2000), Noe (2002), Woidtke (2002), Almazan and Suarez (2003), Hartzell and Starks (2003), and Cremers and Nair (2005).

engaging in "voice".

In various models of governance (e.g. Shleifer and Vishny (1986), Admati, Pfleiderer, and Zechner (1994), Maug (1998), Kahn and Winton (1998) and Mello and Repullo (2004)), the presence of a single large blockholder is optimal for governance since splitting ownership amongst multiple shareholders leads to a free-rider problem. Edmans and Manso (2008) demonstrate that even though a multiple blockholder structure might reduce the effectiveness of direct intervention ("voice"), it strengthens governance through trading ("exit"). Since most firms are held by multiple blockholders, I hypothesize that governance through trading plays a significant monitoring role in practice and that engaging in "voice" and "exit" can be substitutes.

Edmans and Manso (2008) argue that multiple blockholders act competitively in their trading behavior, impounding more information into the price and thus moving it toward its fundamental value. This induces higher managerial effort, especially if the manager is concerned about higher prices. Prior papers focus on the "Wall Street Rule", rather than additional purchases. Through the "Wall Street Rule" of "voting with their feet", institutional investors would sell to liquidity traders to punish the manager for shirking. Edmans and Manso argue that blockholders will both buy and sell, thus govern through trading, but continue to use the term "exit" to describe the blockholder's governance through her trading

(in either direction), to be consistent with the literature. In this paper, I define governance through trading as in Edmans and Manso (2008). By competing for trading profits, institutional investors both buy and sell. Buying pushes prices up and thus compensates the manager for high effort and selling pushes prices down and thus punishes the manager for shirking. I use both the terms governance through trading and engaging in "exit" interchangeably.

Consistent with the hypothesis that institutional investors do indeed govern through trading, I show that large institutional blockholders trade abnormally more and react more to firm performance than small individual investors following public announcements. Abnormal trading following earnings announcements is significantly higher for firms with majority institutional ownership and large institutional blockholders than for firms with minority institutional ownership and small individual investors. Moreover, abnormal trading is a positive function of the magnitude of earnings surprises for stocks with majority institutional ownership; while there is no such relationship for stocks with minority institutional ownership.

I test the hypothesis that institutional investors substitute between governance through "voice" and governance through trading. Traditional theories argue that governance through "voice" is strongest under a single large blockholder. Edmans and Manso (2008) demonstrate analytically that multiple blockholders reduce the

effectiveness of "voice", but strengthen governance through trading since multiple blockholders trade aggressively to compete for profits, as in a Cournot oligopoly. I show that for firms with majority institutional ownership, abnormal trading is significantly higher for those firms with multiple blockholders than for those with one dominant blockholder. Furthermore, I show that the higher the number of blockholders for a firm with majority institutional ownership, the larger its abnormal trading around earnings announcements. In addition, the higher the percentage of shares owned by the largest blockholder, the lower the firm's abnormal trading.

Qiu (2006) shows that the presence of large public pension fund shareholders reduces M&A activities that lower firm values, while mutual fund ownership is positively associated with future bad M&A activity. Cremers and Nair (2006) argue that public pension funds are known to be aggressive shareholder activists, and are generally more free from conflicts of interest and corporate pressure than other institutional shareholders. Del Guercio and Hawkins (1999) find that companies receiving public pension fund proposals subsequently experience a higher frequency of governance events such as shareholder lawsuits as well as responsive corporate policies such as asset sales, restructurings, and layoffs. On the other hand, Palmiter (2002) explains that mutual funds face many structural and legal impediments to activism and as a result they are less vocal than pension funds. Ellerman (1998) argues that mutual funds are passive shareholders. He states

that "Mutual funds hold a diversified portfolio of shares with only a small percentage from any given publicly traded company. Mutual funds exercise no direct corporate governance over companies. They are the model of the passive institutional owner that lives by the "Wall Street Rule" of voting with one's feet. Exit is preferred to voice." Edmands and Manso (2008) argue that "if blockholders are passive and non-interventionist, as is the case for most mutual funds, a large number is optimal" for governance.

Assuming that institutional investors substitute between "exit" and "voice" and that mutual funds are more passive when it comes to governance through "voice" compared to other institutional investors such as pension funds, I hypothesize that mutual funds govern more through trading than other institutional investors. I show that this is exactly the case. As in the Thomson Financial Spectrum 13F Institutional Holdings Database, I categorize institution holding into 5 categories: 1) Banks and bank trust departments, 2) Insurance companies, 3) Investment companies (mutual fund families), 4) Investment advisors, and 5) Endowments, public and corporate pension funds, and philanthropic foundations. I find that firms with mutual fund families as the largest investor group have the highest abnormal trading following public announcements. Abnormal trading is second highest for firms with independent advisors, who invest a significant portion of their assets in mutual funds, as the largest investor group. Firms with

Banks, insurance companies, endowments, and public and corporate pension funds as the largest investor groups have significantly lower abnormal trading following public announcements. The evidence suggests that mutual funds, who are non-interventionist, seem to prefer governance through trading than "voice". On the other hand, other types of institutional investors such as pension funds, who have been shown to govern through "voice" seem not to govern much through trading. The results support the hypothesis that governance through "voice" and through "exit" or trading are substitutes.

Many papers argue that market liquidity impairs corporate governance ("voice") by reducing the cost of "exit" (e.g., Bhide (1993), and Coffee (1993)). On the other hand, Maug (1998) concludes that institutional investors' governance through "voice" strengthens with liquidity since a more liquid stock market makes it easier to camouflage share purchases and therefore increases the benefits from monitoring. Other papers demonstrate that shareholders threat of exit is more effective in liquid markets (e.g., Edmans (2008), Admati and Pfleiderer (2008), Palmiter (2002)). Consistent with these papers, I hypothesize that governance through trading increases with liquidity. The large blockholders' threat of disciplinary exit is more credible when markets are liquid since large trades are easier to execute. I show that for firms with large institutional blockholders, abnormal trading following public announcements increases with liquidity.

The rest of the paper is organized as follows. Section 2 describes the data. In section 3, I show that institutional investors govern significantly more though trading than individual investors. Section 4 shows that multiple blockholders engage in governance through trading more than a single large blockholder and that governance through trading increases with the number of institutional investors and decreases with the percentage of shares owned by the largest institutional shareholder. Section 5 demonstrates that mutual funds, who are non-interventionists, govern more through trading than other types of institutional investors. Section 6 illustrates that governance through trading increases with liquidity. In section 7, various robustness checks are performed. Finally, section 8 concludes.

2.2 Data Description

The main sample period consists of quarterly earnings announcements from 1984 through 2006. For each earnings announcement, an event window extents from day -10 through +10 relative to the earnings report date (day 0). Each quarter consists of 63 (252/4) business days. I use 21 days to get the average daily turnover during the event window and 42 business days to calculate the average daily non-report period turnover for each firm i, where turnover is defined as the ratio of trading volume to shares outstanding. Then for each day in the [-10,10] window, abnormal turnover for firm i is measured as the difference between turnover and

the average daily non-report period turnover.

Consensus earnings forecasts, realized earnings, and earnings report dates are collected from IBES. These earnings data are subsequently matched with trading volume, price, and number of shares outstanding from the Center for Research in Security Prices (CRSP). I define the earnings surprise as (actual earnings-consensus forecast earnings)/price(-11), where price(-11) is the share price eleven days before the earnings announcement (day 0) and consensus forecast is the median analyst forecast during the last month before announcement. As in Conrad, Cornell, and Landsman (2002), I reduce the impact of outliers by deleting observations for which the earnings shock is greater than (less than) 0.5 (-0.5). To minimize the effect of market frictions (see, e.g., Ball, Kothari, and Shanken (1993)), observations with price (-11) in the pre-announcement window of less than $5.00 are deleted. To remove the impact of stock splits or stock dividends in the event window, I delete observations where the number of shares outstanding 11 days prior to the earnings announcement differs from shares outstanding on the announcement date.

The data is then merged with measures of predisclosure information asymmetry, institutional ownership, and liquidity as described below. After introducing these measures, the sample consists of 72,679 firm-quarterly events.

2.3 Institutional Ownership and Governance through Trading

Institutional investors can provide active monitoring that is difficult for smaller, more passive or less-informed investors. I first hypothesize that institutional investors govern more through trading than individual investors. I study how institutional investors and individual investors trade following public announcement, when earnings are realized and thus managers' performance is revealed.

From Thomson Reuters Financial Database, I calculate the percentage of institutional investors holdings of each stock in each quarter. Majority (minority) institutional ownership is defined as those firms with more (less) than 50% of institutional ownership. Figure 1 shows the cumulative abnormal turnover around the [-10,10] announcement window for firms with majority institutional ownership and those with minority institutional ownership. The graph illustrates that firms with majority institutional ownership have much higher abnormal turnover around earnings announcements.

Institutional ownership has been shown to have a time trend. To insure that this time trend is not driving my results, I consider firms in the highest versus the lowest three-deciles of institutional ownership in each quarter. The left handside graph in figure 2 shows that abnormal turnover is much higher for firms that fall in the largest three deciles than lowest three deciles of institutional ownership in

each quarter. Figure 2 is very similar to figure 1. Moreover, to support the claim that institutional owners are typically large blockholders, I consider companies with the largest five institutional investors holding more than 20% of shares versus those firms with the largest five institutional investors holding less than 20% of shares. The right handside graph in figure 2 shows that abnormal trading is much higher for those firms with the largest five institutional investors holding more than 20% of equity.

Table 1 provides mean daily turnovers during the non-report period and mean daily abnormal turnovers for various announcement periods for the entire sample, and for high and low institutional ownership stocks. The full sample row finds that turnover almost doubles during the [0,1] announcement period, and increases by 40% and 22% during the [0,5] and [0,10] periods relative to the non-report period. This result is consistent with previous work. For example, Beaver (1968) finds that trading increases by 33% during the week following announcements.

Table 1 also shows that outside event windows (non-report periods), firms with majority institutional ownership have more turnover than firms with minority institutional ownership. Abnormal turnover is defined as the difference in turnover during the announcement window and turnover during the non-report periods. Even after controlling for the higher turnover during the non-report periods, firms with majority institutional ownership have much higher abnormal turnover. For

example, during the [0,1] announcement period, abnormal turnover is 84.1% higher for majority than minority institutional ownership stocks.

To control for other factors, I estimate the following regressions for the [0,1] announcement period (regressions are clustered by months to correct for cross correlation and t-statistics are Huber/White robust t-stats),

$$AT_{it} = a_0 + a_1 IO_{it} + a_2 UE_{it} + a_3 UE_{it}^2 + a_4 Range_{it} + a_5 size_{it} + \epsilon_{it}, \qquad (2.1)$$

where AT_{it} is the daily abnormal turnover for firm i in day t ($t \in [0,1]$ event window); the institutional ownership indicator, IO_{it}, equals one when institutional investors own more than 50% of firm i during the previous quarter, and zero otherwise; the unexpected earnings, UE_{it}, is calculated as (actual earnings-consensus forecast earnings)/price(-11), where price(-11) is the share price eleven days before the earnings announcement (day 0) and consensus forecast is the median analyst forecast during the last month before announcement; UE_{it}^2 is the square of unexpected earnings. I proxy for predisclosure information asymmetry with two different variables. As in Atiase and Bamber (1994), I use the average monthly range across the most optimistic analyst EPS forecast and the most pessimistic analyst EPS forecast for each sample firm i, scaled by the absolute value of the mean forecast ($\text{Range}_{i,t}$) during quarter t. Several papers argue that small firms have higher predisclosure information asymmetry than large firms (e.g, Bamber

(1986), Kim and Verrecchia (1991)). I use size as a second measure of predisclosure information asymmetry. The variable size is measured as the natural logarithm of total assets.

Table 2 illustrates that abnormal trading is significantly higher for firm with majority institutional ownership than for those with minority institutional ownership. The coefficient on IO_{it} is 0.41 with a significant robust t-statistic. This implies that firms with majority institutional ownership have 0.41% higher daily turnover around the [0,1] announcement period, which is equivalent to 103% annual abnormal turnover.

I also estimate the following regression for both firms with majority and minority institutional ownership

$$AT_{it} = a_0 + a_1 UE_{it} + a_2 UE_{it}^2 + a_3 Range_{it} + a_4 size_{it} + \epsilon_{it}, \tag{2.2}$$

Column (2) and (3) in table 2 show equation (2)'s estimated coefficients for majority and minority institutional ownership stocks, respectively. Column (2) shows that the magnitude of the earnings surprise's coefficient is 8.82 with a t-statistic of 2.80 for firms with majority institutional investors. On the other hand, column (3) illustrates that the magnitude of the earnings surprise's coefficient is only 1.19 with a t-statistic of 1.18 for firms with minority institutional investors. Thinking of earnings surprises are a measure of firm performance, the results suggests that

institutional investors react more to performance than individual investors. This is consistent with the idea that institutional investors are more likely to govern through trading.

The Range and size coefficients are significantly positive and negative, respectively, which is consistent with previous work. Higher predisclosure information asymmetry leads to more abnormal trading around earnings announcements.

The evidence so far is consistent with traditional theories which suggest that large institutional blockholders have strong incentives to monitor managers while small individual investors are passive. The results are consistent with the hypothesis that institutional investors engage in governance through trading. The next two sections provide evidence that institutional investors do substitute between governance through "voice" and governance through "exit".

2.4 One Large vs. Multiple Blockholders

Traditional theories argue that governance through "voice" is strongest under a single large blockholder since this ownership structure reduces the free rider problem. Edmans and Manso (2008) demonstrate analytically that multiple blockholders reduce the effectiveness of "voice", but strengthen governance through trading since multiple blockholders trade aggressively to compete for profits, as in a Cournot oligopoly.

First I consider firms with significant institutional ownership and categorize them into firms with one large blockholder and firms with multiple blockholders. If a single blockholder owns more than half the total shares owned by institutional investors, than the firms is considered to have one large blockholder, otherwise it is considered to have multiple blockholders.

The left handside graph in Figure 3 requires a firm to have at least 50% institutional ownership during the particular quarter. The graph shows that firms with multiple blockholders have significantly higher cumulative abnormal turnover during the [-10,10] earnings announcement window than firms with one large blockholder. Cumulative abnormal turnover is more than 2% for firms with multiple blockholders, while it is only 0.7% for firms with one large blockholder. The right handside graph require a firm to have less institutional ownership (at least 30% institutional ownership) and shows similar results.

The evidence from the figure is consistent with the hypothesis that multiple blockholders are more likely to engage in governance through trading than one large blockholder. Furthermore, since governance through "voice" is strongest under a single large blockholder, the evidence suggests that institutional investors substitute between engaging in "voice" and engaging in "exit".

To further support the hypothesis that multiple blockholders govern through trading rather than engage in "voice", I estimate the following regression for firms

with majority institutional ownership (at least 50% and at least 30% institutional ownership) around the [0,1] announcement period

$$AT_{it} = a_0 + a_1 MB_{it} + a_2 NI_{it} + a_3 MO_{it} + a_4 UE_{it} + a_5 UE_{it}^2 + a_6 Range_{it} + a_7 size_{it} + \epsilon_{it}, \tag{2.3}$$

where AT_{it} is abnormal turnover; the multiple blockholders' indicator, B_{it} equals one when no single blockholder owns more than half the total institutional ownership and zero otherwise; NI_{it} is the number of institutional investors during the previous quarter for firm i; MO_{it} is the percentage owned by the largest institutional investor (maximum ownership); UE_{it} is the earnings surprise, $Range_{it}$ is the range across the most optimistic analyst EPS forecast and the most pessimistic analyst EPS forecast, scaled by the absolute value of the mean forecast; size_{it} is the natural logarithm of total assets.

Table 3, column (1) shows that for firms with at least 50% institutional ownership, the coefficient for the multiple blockholders indicator is positive and highly significant. It implies that abnormal turnover following announcements is significantly higher for firms with multiple blockholders than for those with a single large blockholder. The magnitude of the higher trading is economically significant (0.60% daily or equivalently 151% annually). Column (2) shows that the larger the number of institutional investors the more trading takes place. The number

of institutional investors' coefficient is positive and highly significant. Column (3) demonstrate that abnormal trading is a negative function of the percentage of shares owned by the largest institutional investor. Again, this suggests that the presence of multiple blockholders is preferred for governance through trading or 'exit'. The remainder of the table repeats the analysis for firms with at least 30% rather than 50% institutional ownerships. The results are robust to how we define firms with majority institutional ownership.

In the next section, I study how various types of institutional investors vary in the extend to which they engage in governance through trading.

2.5 Types of Institutional Investors

Previous papers have argued that mutual funds are less likely to intervene (engage in "voice") due to structural and legal impediments (e.g. Ellerman (1998), Palmiter (2002), and Edmands and Manso (2008)). Other papers show that institutional investors such as public pension funds are more likely to engage in activism (e.g. Del Guercio and Hawkins (1999), Qiu (2006), and Cremers and Nair (2006)). I test the hypothesis that mutual funds, who seem to be non-interventionists, are more likely to engage in governance through trading than other types of institutional investors, who are more likely to engage in "voice".

As in the Thomson Financial Spectrum 13F Institutional Holdings Database,

I categorize institution holding into 5 categories: 1) Banks and bank trust departments, 2) Insurance companies, 3) Investment companies (mutual fund families), 4) Investment advisors, and 5) Endowments, public and corporate pension funds, and philanthropic foundations. According to the 13F Database classification, if a fund management company invests more than 50% of client assets in mutual subsidiaries, it is classified as an investment company. Fund management companies directly managing clients assets with less than 50% invested in mutual funds are categorized as investment advisors. Binay (2005), appendix A includes a clear description of the 13F Database classification.

If mutual funds are more likely to engage in governance through trading, investment companies should be ranked first in terms of how much they engage in "exit", then investment advisors, then other categories. I classify a firm event into a particular category if the institution type owns more than 10% of the firm's shares and owns more than half of the shares owned by all institutional investors.

Figure 4 illustrates that cumulative abnormal trading around the [-10,10] announcement period is the highest for firms with investment companies as the largest category of investors. Cumulative abnormal turnover reaches as much as 2.5%. It is the second highest for firms with independent advisors as the largest category of investors. Cumulative abnormal turnover around the [-10,10] window is around 1.4%. For all other types of institutions (banks, insurance companies,

endowments, public and corporate pension funds, and philanthropic foundations), cumulative abnormal turnover is at most 0.6%. The evidence support the claim that institutional investor who are less likely to engage in "voice" are more likely to engage in governance through trading. Governance through "voice" and governance through "exit" seem to be substitutes.

In the next section, I study how market liquidity affects governance through trading.

2.6 Liquidity

Market liquidity impairs corporate governance (voice) by reducing the cost of exit (e.g., Bhide (1993), and Coffee (1993)). On the other hand, shareholders threat of exit is more effective in liquid markets (e.g., Edmans (2008), Admati and Pfleiderer (2008), Palmiter (2002)). I hypothesize that governance through trading increases with liquidity. The large blockholders threat of disciplinary exit is more credible when markets are liquid since large trades are easier to execute. I show that for firms with large institutional blockholders, abnormal trading following public announcements increases with liquidity.

I proxy for liquidity using the bid-ask spread, which is defined as the difference between the closing ask-price and closing bid-price divided by the closing bid-price

$$BA_{it} = \frac{\text{ask price}_{it} - \text{bid price}_{it}}{\text{bid price}_{it}}.$$

For each event, I calculate the average daily bid-ask spread for the corresponding company during its non-report period. A firm belongs to high (low) bid-ask spread if its average non-report period bid-ask spread is above (below) the cross sectional mean of every firm's bid-ask spread during the particular quarter.

Figure 5 shows that abnormal trading is much higher for stocks with majority institutional ownership and high liquidity than stocks with majority institutional ownership and low liquidity. The cumulative abnormal turnover around the event period is more than double for such stocks. For stocks with minority institutional ownership, the difference between abnormal turnover for stocks with high liquidity and those with low liquidity is much smaller. Table 4 shows the estimated coefficients for the following regression

$$AT_{it} = a_0 + a_1 IO_{it} + a_2 LI_{it} + a_3 (IO_{it} * LI_{it}) + a_4 UE_{it} + a_5 UE_{it}^2 + a_6 Range_{it} + a_7 size_{it} + \epsilon_{it}, \tag{2.4}$$

where IO_{it} is the institutional ownership indicator; LI_{it}, is a liquidity indicator that equals one for high liquidity stocks and zero otherwise; $IO_{it} * LI_{it}$ is an interaction variable; and all other variables are as defined above.

Column (1) in Table 4 illustrates that high liquidity increases abnormal trading significantly more for stocks with majority institutional ownership than for those with minority institutional ownership. The interaction variable, $IO_{it} * LI_{it}$,'s co-

efficient is 0.26 with a robust t-statistic of 9.79. This result also indicates that institutional investors' governance through trading increases with liquidity. Column (2) and (3) show the same thing by estimating separately the liquidity indicator coefficient for firms with majority and minority institutional ownership. The liquidity indicator coefficient is much higher for majority than minority institutional ownership.

The evidence in this section is consistent with the hypothesis that governance through trading increases with liquidity. Large blockholders' threat of disciplinary exit is more credible when markets are liquid since large trades are easier to execute. The next section provides some robustness checks.

2.7 Robustness Checks

The differences in trading between firms with majority institutional ownership and those with minority institutional ownership might be driven by some firm characteristics that is missing in the above regressions. Assuming that firm characteristics remain stable over time, institutional ownership affects abnormal trading if the same firm's abnormal trading changes as its institutional ownership changes. For each firm in my sample, I find the two quarters in which that firm had the highest (maximum) and lowest (minimum) institutional ownership during the entire sample period and drop all other quarters. Then, I compare abnormal trading around

earnings announcements during quarters with maximum institutional ownership versus those quarters with minimum institutional ownership. Both subsamples include the same firms; all what changes is institutional ownership. Figure 6 shows that abnormal trading significantly increases as we go from quarters with minimum firm-specific institutional ownership to quarters with maximum firm-specific institutional ownership. In results I do not report in this paper, this difference in abnormal trading is statistically significant. One possible critique of this reasoning is that firm characteristics might change as its institutional ownership changes. To deal with this issue, I add various other firm characteristics to the main regressions.

Size have been shown to have a time-trend. To control for the time-trend, I measure relative size as total assets for firm i divided by average total assets of all firms during the quarter. I also control for relative market capitalization, which is equal to the ratio of firm's market value of equity and the average market value of equity for all firms during the event day. Tkac (1999) suggests that the market value of equity reflects ongoing levels of firm-specific portfolio rebalancing.

Firms with majority institutional investors have on average more than double the number of analysts following than firms with majority individual ownership. It is therefore possible that the higher analysts following is driving my results. Dempsey (1989) argues that analysts focus their investigation efforts on the set

of securities with the highest expected net payoffs to private information search. Dempsey concludes that analysts following proxy for predisclosure information asymmetry and carries explanatory power beyond that associated with firm size. I control for any analysts following effect on abnormal trading. Analysts following is measured as the number of analysts forecasting earnings for firm i divided by the average number of analysts following all firms in the particular quarter.

Lee and Swaminathan (2000) find that firms with high (low) past turnover ratios exhibit many glamour (value) characteristics, and have consistently more negative (positive) earnings surprises over the next eight quarters. I control for the previous end of quarter book-to-market to account for any differences in abnormal trading between value and growth firms.

The last characteristic I control for is the direction of the price change associated with the earnings announcements. Empirical research documents that trading volume is higher following upticks than downticks. Karpoff (1987) argues that this relationship is due to institutional short sales constraints.

Table 5 shows the estimated coefficients on a regression of abnormal trading around earnings announcements on the institutional ownership indicator, earnings surprises, the magnitude of earnings surprises, analysts forecasts' range, and the control variables discussed above.

Table 5, column (1) shows that the coefficient on the relative size variable

is negative and highly significant. Controlling for any time trend associated with size, the coefficient on the institutional ownership indicator (IO) remains the same. The correlation between relative size and relative market capitalization is 0.79 in my sample. To avoid biases associated with multicollinearity, I drop relative size when including relative market capitalization as a regressor. Column (2) shows that the coefficient on market capitalization is negative and significant, while the IO coefficient remains positive and highly significant.

The correlation between analysts following and size is 0.57, which might cause some level of multicollinearity. Column (3) shows the estimated coefficient when size is dropped and the analysts' following regressor is included. The coefficient on analyst's following is 0.07 with a significant t-statistic of 9.44. The evidence suggests that firms with higher analysts' following have higher abnormal trading around announcements. Ounce I control for analysts following, the IO's coefficient drops from 0.35 to 0.25, but remains highly significant with a t-statistic of 11.58. Column (4) includes both size and analysts following. This leads to much higher coefficients on both variables, while the IO coefficient remains similar. The significant increase in the size and to the analysts following coefficients suggests some level of multicollinearity.

Table 5, column (5) includes size, book-to-market and a return indicator that equals one for upticks and zero otherwise. Column (6) drops size and includes the

analysts' following variable. In both estimated regressions, the book-to-market coefficient is negative and significant, which suggests that abnormal trading is higher for growth than value stocks. The returns indicator variable is positive and significant, which is consistent with previous findings.

The coefficient on the institutional ownership indicator remains statistically and economically significant after controlling for all the effects described above. This evidence suggests that my previous findings are robust.

2.8 Conclusion

In this paper, I show that institutional investors govern through trading. Following earnings announcement, they trade abnormally more than individual investors. In addition, institutional trading is a positive function of the magnitude of the earning surprise, which suggests that they trade more when they learn something new about managers' performance. On the other hand, individual investors do not react to such signal.

I discuss two types of governance mechanism: engaging in "voice" and engaging in "exit". As in Edmans and Manso (2008), I argue that blockholders will both buy and sell, thus govern through trading, but continue to use the term "exit" to describe the blockholder's governance through her trading (in either direction), to be consistent with the literature. Prior work has argued that a single blockholder

is more effective than multiple blockholders in engaging in "voice" since such structure reduces the free rider problem. I show that firms with multiple blockholders are governed more through trading than firms with one single blockholder. The evidence suggests that governance through "voice" and through trading can be substitutes.

Previous work has argued that mutual funds are non-interventionist, while some types of institutional investors such as public pensions funds are more involved in activism. I illustrate that mutual fund investors engage in governance through trading much more than other types of institutional investors. The results again support the claim that governance through "voice" and "exit" are substitutes.

Consistent with previous governance models, I hypothesize that the large blockholders' threat of disciplinary exit is more credible when markets are liquid since large trades are easier to execute and I show that governance through trading increases with liquidity.

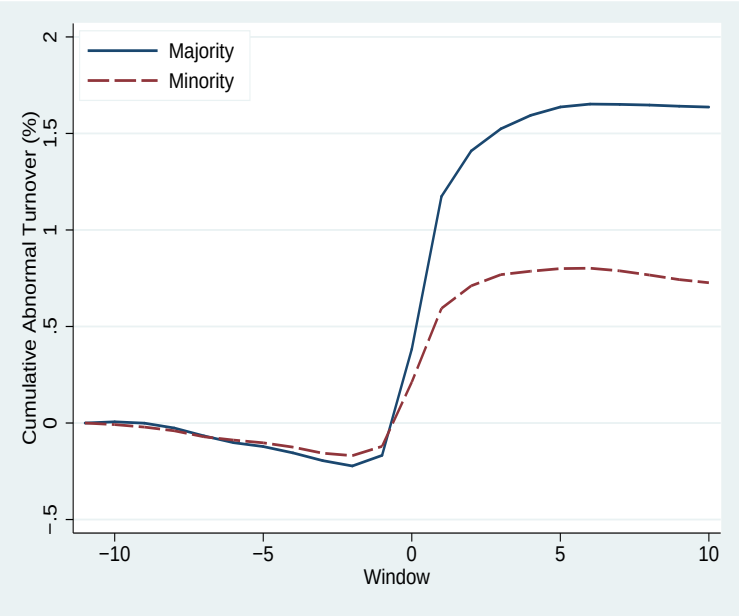

FIGURE 2.1: **Institutional Ownership and Trading**

The main sample period consists of quarterly earnings announcements from 1984 through 2006. For each earnings announcement, an event window extents from day -10 through +10 relative to the earnings report date (day 0). Since each quarter consists of 63 business day, I use 42 business days to calculate the average daily non-report period turnover for each firm i, where turnover is defined as the ratio of trading volume to shares outstanding. Then for each day in the [-10,10] window, abnormal turnover for firm i is measured as the difference between turnover and the non-report period turnover. Majority (Minority) Institutional Ownership represents firms with more (less) than 50% of institutional ownership during the previous calender quarter.

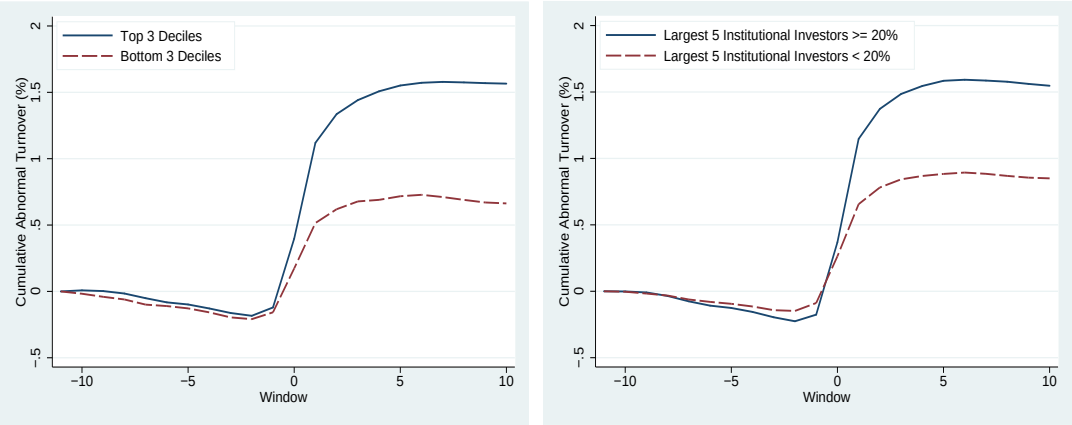

FIGURE 2.2: **Institutional Ownership, Block-Holders, and Trading**

The main sample period consists of quarterly earnings announcements from 1984 through 2006. For each earnings announcement, an event window extents from day -10 through +10 relative to the earnings report date (day 0). Since each quarter consists of 63 business day, I use 42 business days to calculate the average daily the non-report period turnover for each firm i, where turnover is defined as the ratio of trading volume to shares outstanding. Then for each day in the [-10,10] window, abnormal turnover for firm i is measured as the difference between turnover and the non-report period turnover. The left handside graph shows abnormal trading for firms in the highest versus the lowest three-deciles of institutional ownership in each quarter. The right handside graph shows abnormal trading for companies with the largest five institutional investors holding more than 20% of shares versus those firms with the largest five institutional investors holding less than 20% of shares.

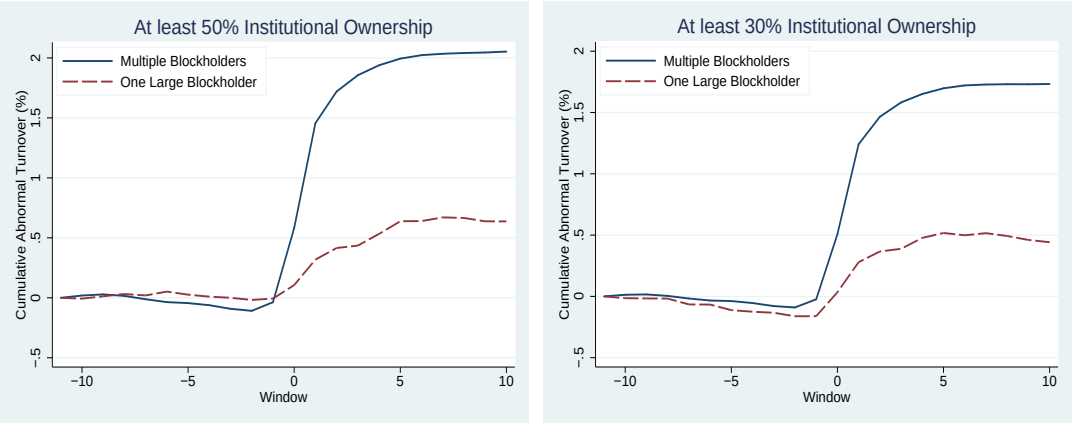

FIGURE 2.3: **Cumulative Abnormal Turnover for One Large vs. Multiple Institutional Blockholders**

The main sample period consists of quarterly earnings announcements from 1984 through 2006. Abnormal turnover is calculated as the difference between turnover during each day in the event window and the average turnover during the non-event period. Quarterly equity holdings of institutional investors are obtained from the Thomson Financial Spectrum 13F Institutional Holdings Database. For the left handside graph, I require a firm to have at least 50% institutional ownership during the particular quarter. Then, a firm is considered to have one large blockholder if a single institutional investor owns at least half of total institutional ownership; otherwise the firm is considered to have multiple blockholders. For the right handside graph, I only require firms to have 30% total institutional ownership.

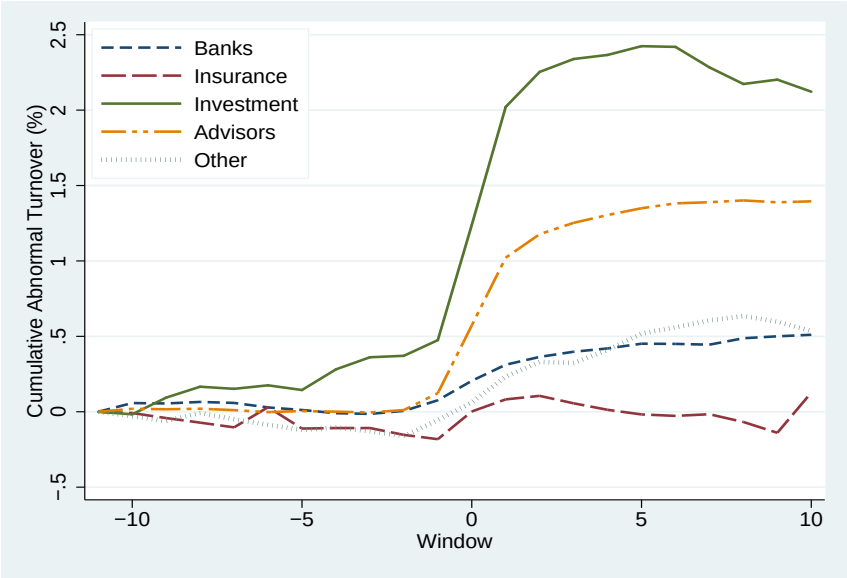

FIGURE 2.4: **Cumulative Abnormal Turnover by Type of Institutional owners**

The main sample period consists of quarterly earnings announcements from 1984 through 1997. Abnormal turnover is calculated as the difference between turnover during each day in the event window and the average turnover during the non-event period. Quarterly equity holdings of institutional investors are obtained from the Thomson Financial Spectrum 13F Institutional Holdings Database. The database classifies institutional into 5 categories: 1) Banks and bank trust departments, 2) Insurance companies, 3) Investment companies (mutual fund families), 4) Investment advisors, and 5) Endowments, public and corporate pension funds, and philanthropic foundations. The databases classification is not reliable from 1998 and beyond. A firm event is classified into a particular category if the institution type owns more than 10% of the firm's shares and owns more than half of the shares owned by all institutional investors.

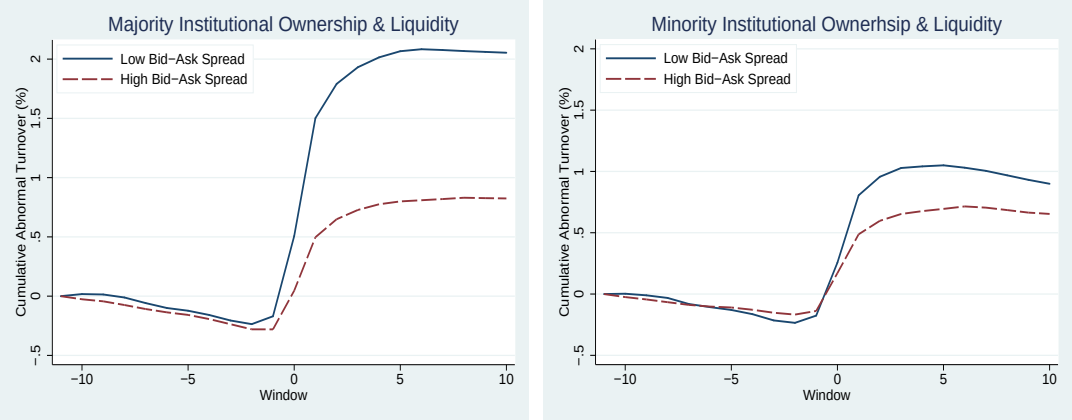

FIGURE 2.5: **Institutional Ownership, Liquidity, and Trading**

The main sample period consists of quarterly earnings announcements from 1984 through 2006. For each earnings announcement, an event window extents from day -10 through +10 relative to the earnings report date (day 0). Since each quarter consists of 63 business day, I use 42 business days to calculate the average daily the non-report period turnover for each firm i, where turnover is defined as the ratio of trading volume to shares outstanding. Then for each day in the [-10,10] window, abnormal turnover for firm i is measured as the difference between turnover and the non-report period turnover. High (Low) Institutional Ownership represents firms with majority (minority) institutional ownership during the previous calender quarter. For each event, I calculate the average daily bid-ask spread for the corresponding company during its non-report period. A firm belongs to high (low) bid-ask spread if its average non-report period bid-ask spread is above (below) the cross sectional mean of every firm's bid-ask spread during the particular quarter.

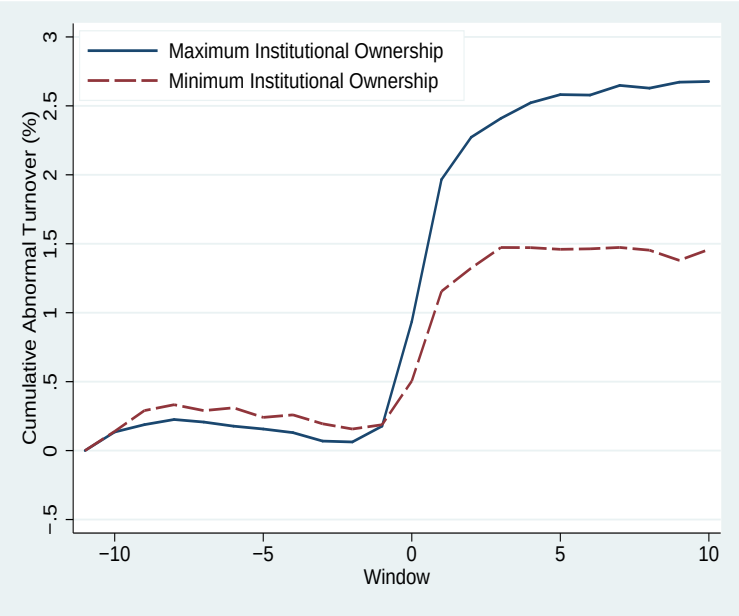

FIGURE 2.6: **Change in individual firm's Institutional Ownership and Trading**

The main sample period consists of quarterly earnings announcements from 1984 through 2006. For each earnings announcement, an event window extents from day -10 through +10 relative to the earnings report date (day 0). Since each quarter consists of 63 business day, I use 42 business days to calculate the average daily non-report period turnover for each firm i, where turnover is defined as the ratio of trading volume to shares outstanding. Then for each day in the [-10,10] window, abnormal turnover for firm i is measured as the difference between turnover and the non-report period turnover. For each individual firm, maximum (minimum) institutional ownership is defined as the quarter with the highest (lowest) institutional ownership during the firm's time series.

Table 2.1: Institutional Ownership and Trading

The main sample period consists of quarterly earnings announcements from 1984 through 2006. For each earnings announcement, an event window extents from day -10 through +10 relative to the earnings report date (day 0). Since each quarter consists of 63 business day, I use 42 business days to calculate the average daily non-report period turnover for each firm i, where turnover is defined as the ratio of trading volume to shares outstanding. Then for each day in the [-10,10] window, abnormal turnover for firm i is measured as the difference between turnover and the non-report period turnover. High (Low) Institutional Ownership represents firms with majority (minority) institutional ownership during the previous calender quarter.

	Turnover	Abnormal Turnover				Number of
	Non-Report Period	[-10,-1] Window	[0,1] Window	[0,5] Window	[0,10] Window	Events
All	0.59	0.00	0.52	0.23	0.13	72,679
High Institutional Ownership	0.70	-0.01	0.68	0.31	0.17	34,537
Low Institutional Ownership	0.49	0.00	0.37	0.17	0.09	38,142
% Increase	44.3%		84.1%	87.1%	95.3%	

Table 2.2: Institutional Ownership and Trading (Cont'd)

The sample period consists of 72,679 quarterly events during the 1984-2006 period. The following equation is estimated during the [0,1] announcement periods

$$AT_{it} = a_0 + a_1 IO_{it} + +a_2 UE_{it} + a_3 UE_{it}^2 + a_4 Range_{it} + a_5 size_{it} + \epsilon_{it}.$$

The average daily abnormal turnover, AT_{it} is defined as the difference between the daily turnover during the [0,1] announcement period and the non-report period, for firm i. The institutional Ownership Indicator, IO_{it}, equals one when institutional investors owned more than 50% of firm i during the previous quarter, and zero otherwise. The unexpected earnings, UE_{it}, is calculated as (actual earnings-consensus forecast earnings)/price(-11) for firm i at day t, where price(-11) is the share price eleven days before the earnings announcement (day 0) and consensus forecast is the median analyst forecast during the last month before announcement. Predisclosure information asymmetry is proxied by two variables: the average monthly range across the most optimistic analyst EPS forecast and the most pessimistic analyst EPS forecast for each sample firm i, scaled by the absolute value of the mean forecast (Range), and size. Regressions are clustered by months to correct for cross correlation. The numbers in parentheses are Huber/White robust t-stats. Results are robust to two-way clustering by month and firms.

	Full-Sample	Majority Institutional Ownership	Minority Institutional Ownership
Institutional Ownership	0.41		
Indicator	(19.63)		
Earnings	1.08	2.55	0.75
Surprise	(1.66)	(2.50)	(1.12)
Magnitude of	2.64	8.82	1.19
Earnings Surprise	(2.57)	(2.80)	(1.18)
Analysts	0.02	0.01	0.04
Forecasts' Range	(3.39)	(1.51)	(3.86)
Size	-0.09	-0.11	-0.07
	(-10.72)	(-11.24)	(-8.76)
Const	0.90	1.46	0.79
	(13.21)	(16.44)	(11.92)
R^2	0.0144	0.0094	0.0067
Number of Events	72,679	34,537	38,142

Table 2.3: One Large vs. Multiple Blockholders

Quarterly equity holdings of institutional investors are obtained from the Thomson Financial Spectrum 13F Institutional Holdings Database. The following equation is estimated during the [0,1] announcement periods

$$AT_{it} = a_0 + a_1 MB_{it} + a_2 NI_{it} + a_3 MO_{it} + a_4 UE_{it} + a_5 UE_{it}^2 + a_6 Range_{it} + a_7 size_{it} + \epsilon_{it}.$$

where The average daily abnormal turnover, AT_{it} is defined as the difference between the daily turnover during the [0,1] announcement period and the non-report period, for firm i. The multiple institutional blockholders' indicator, MB_{it}, equals one when each institutional investor owns less than half the total institutional ownership for firm i, and zero otherwise. NI_{it} is the number of institutional investors. MO_{it} is the percentage of shares owned by the largest institutional investor. UE_{it} is unexpected earnings. Predisclosure information asymmetry is proxied by two variables: the average monthly range across the most optimistic analyst EPS forecast and the most pessimistic analyst EPS forecast for each sample firm i, scaled by the absolute value of the mean forecast (Range), and size. Regressions are clustered by months to correct for cross correlation. The numbers in parentheses are Huber/White robust t-stats.

	At Least 50% Inst. Own.			At Least 30% Inst. Own.		
	(1)	(2)	(3)	(4)	(5)	(6)
Multiple Institutional	0.60			0.44		
Investors Indicator	(14.73)			(13.35)		
Number of Institutional		0.12			0.13	
Investors (in 100)		(12.66)			(12.89)	
% Ownership by the Largest			-0.90			-0.21
Institutional Investor			(-6.40)			(-2.24)
Earnings	2.31	1.91	2.26	2.36	2.07	2.42
Surprise	(2.06)	(1.68)	(2.00)	(1.96)	(1.71)	(2.01)
Magnitude of	7.21	7.42	7.31	4.55	4.92	4.70
Earnings Surprise	(2.16)	(2.21)	(2.19)	(1.28)	(1.38)	(1.33)
Analysts	0.02	0.02	0.02	0.02	0.03	0.02
Forecasts' Range	(1.81)	(2.41)	(1.89)	(2.70)	(3.22)	(2.75)
Size	-0.13	-0.20	-0.13	-0.09	-0.16	-0.09
	(-11.74)	(-16.17)	(-11.66)	(-8.69)	(-15.27)	(-8.59)
Const	1.01	1.95	1.73	0.78	1.53	1.23
	(13.06)	(16.53)	(15.35)	(9.95)	(15.74)	(12.01)
R^2	0.0113	0.0139	0.011	0.0072	0.0109	0.0064
Number of Events	34,537			54,283		

Table 2.4: Institutional Ownership and Liquidity

The sample period consists of 72,679 quarterly events during the 1984-2006 period. The following equation is estimated during the [0,1] announcement periods

$$AT_{it} = a_0 + a_1 IO_{it} + a_2 LI_{it} + a_3 (IO_{it} * LI_{it}) + a_4 UE_{it} + a_5 UE_{it}^2 + a_6 Range_{it} + a_7 size_{it} + \epsilon_{it}.$$

The average daily abnormal turnover, AT_{it} is defined as the difference between the daily turnover during the [0,1] announcement period and the non-report period, for firm i. The institutional Ownership Indicator, IO_{it}, equals one when institutional investors owned more than 50% of firm i during the previous quarter, and zero otherwise. The liquidity indicator, LI_{it}, equals one when firm i's average non-reporting period bid-ask spread falls bellow its cross sectional mean for the particular quarter, and zero otherwise. The unexpected earnings, UE_{it}, is calculated as (actual earnings-consensus forecast earnings)/price(-11) for firm i at day t, where price(-11) is the share price eleven days before the earnings announcement (day 0) and consensus forecast is the median analyst forecast during the last month before announcement. Predisclosure information asymmetry is proxied by two variables: the average monthly range across the most optimistic analyst EPS forecast and the most pessimistic analyst EPS forecast for each sample firm i, scaled by the absolute value of the mean forecast (Range), and size. The numbers in parentheses are Huber/White robust t-stats.

	Full-Sample	Majority Institutional Ownership	Minority Institutional Ownership
Institutional Ownership	0.17		
Indicator (IO)	(13.75)		
Liquidity	0.35	0.62	0.33
Indicator (LI)	(11.98)	(17.74)	(11.07)
IO*LI	0.26		
	(9.79)		
Earnings	0.52	1.11	0.41
Surprise	(0.72)	(1.12)	(0.58)
Magnitude of	3.22	7.45	2.14
Earnings Surprise	(2.62)	(2.54)	(2.08)
Analysts	0.02	0.02	0.03
Forecasts' Range	(3.71)	(2.48)	(3.27)
Size	-0.11	-0.14	-0.09
	(-11.55)	(-12.08)	(-9.08)
Const	0.87	1.19	0.75
	(12.85)	(14.91)	(10.87)
R^2	0.0279	0.0273	0.0142

Table 2.5: Robustness Checks

I estimate the same equation as in Table II with various control variables. Relative size is measured as total assets for firm i divided by average total assets for all firms during the given quarter. Relative market capitalization is defined as the market value of equity for firm i divided by the average market value of equity for all firms during the event day. Analysts following is the number of analysts forecasting earnings for firm i divided by the average number of analysts following all firms in the quarter. Book-to-Market is the ratio of book value to the market value of common equity. Returns indicator equals one for upticks and zero otherwise. The numbers in parentheses are Huber/White robust t-stats.

	(1)	(2)	(3)	(4)	(5)	(6)
Institutional Ownership	0.39	0.35	0.25	0.30	0.39	0.24
Indicator	(16.89)	(16.34)	(11.58)	(13.59)	(16.01)	(10.48)
Earnings	1.07	1.22	0.88	0.87	1.08	0.89
Surprise	(1.61)	(1.81)	(1.27)	(1.36)	(1.53)	(1.19)
Magnitude of	2.53	2.42	2.73	2.92	2.80	2.90
Earnings Surprise	(2.15)	(1.97)	(2.26)	(2.52)	(2.30)	(2.17)
Analysts	0.02	0.01	0.00	0.00	0.02	0.01
Forecasts' Range	(3.30)	(2.47)	(1.13)	(0.62)	(3.23)	(1.26)
Relative Size	-0.67			-1.09	-0.68	
	(-15.88)			(-15.38)	(-16.07)	
Relative Market		-0.06				
Capitalization		(-18.54)				
Analysts			0.07	0.25		0.07
Following			(9.44)	(14.30)		(8.72)
Book-to-					-0.17	-0.19
Market					(-3.88)	(-4.05)
Returns					0.05	0.04
Indicator					(2.50)	(2.15)
Const	0.95	0.21	0.27	1.16	0.95	0.27
	(16.72)	(10.97)	(15.25)	(16.00)	(16.91)	(17.36)
R^2	0.0190	0.0097	0.0083	0.0307	0.0197	0.0090

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