

**THREE ESSAYS ON INSTITUTIONAL INVESTORS AND
CORPORATE GOVERNANCE**

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**THREE ESSAYS ON INSTITUTIONAL INVESTORS AND
CORPORATE GOVERNANCE**

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[To my daughters Raeeva and Umana]

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SUMMARY

The first essay analyzes mutual funds' proxy voting records on shareholder proposals. The results indicate that mutual funds support shareholder proposals and vote against management for proposals that are likely to increase shareholders' wealth and rights, in firms with weaker external monitoring mechanisms, in firms with entrenched management, and when funds have longer investment horizon. Mutual funds mostly take management sides on executive compensation related proposals, when they have higher ownership concentration, and when they belong to bigger fund families. The results further indicate that there is a positive reputational effect for the funds undertaking a monitoring role. Moreover, mutual funds reduce holdings when they disapprove of managements' policy, but before doing so they take on an activist role by supporting shareholder proposals. The second essay investigates institutional investors' trading behavior of acquiring firm stocks surrounding merger activities. We label investment companies and independent investment advisors as *active institutions* and banks, nonbank trusts and insurance companies as *passive institutions*. We find active institutions increase holdings of acquiring firm stocks for mergers with higher wealth implications. However, active institutions overreact to stock mergers at the announcement, which they appear to correct at the resolution quarter of the merger. The trading behavior of passive institutions suggests that these institutions disregard the market response of merger announcement in trading acquiring firm stocks at the announcement quarter. The passive institutions gradually update their beliefs and trade on the basis of merger wealth effect at the resolution quarter. The third essay examines relation between executive compensation structure with the existing level and changes of takeover defense mechanisms of firms. According to "managerial entrenchment hypothesis," higher managerial power from adoption of takeover defense mechanisms would lead to generating higher rents for

executives. “Efficient contracting hypothesis” argue that higher anti-takeover provisions would contribute in achieving efficient contracting by deferring compensation into the future due to the low possibility of hostile takeover. The results support managerial entrenchment hypothesis with regard to existing level of takeover defense mechanisms. With regard to changes in anti-takeover provisions, the existing level of managerial power influence the future pay structure.

CHAPTER 1

INTRODUCTION

Various corporate governance mechanisms have been established to reduce the agency conflict between management and shareholders. External monitoring mechanisms involve market for corporate control, legal and regulatory rules, proxy voting contests, managerial labor market. Internal monitoring mechanisms consist of board of directors, concentrated shareholdings by institutions or by block-holders, corporate charter, and debt policy. Jensen (1993) argues that external monitoring mechanism work in concert with the internal monitoring mechanisms to control agency costs between shareholder and managers. This dissertation examines two very important corporate governance mechanisms – monitoring by institutional investors and market for corporate control. Institutional investors now hold 66 percent of all U.S. publicly traded stocks. The mutual funds industry alone has grown dramatically in the last few decades. The total assets of mutual funds have soared from \$2 billion in 1950 to more than \$8 trillion in recent years.¹ This change of ownership structure of U.S. corporations, from individual ownership to ownership through intermediaries, has changed the dynamics of the agency problem. With this ownership substitution, the individual owners are at the mercy of institutions to assert their ownership rights. However, whether these institutions place their own interests over the interests of the shareholders they are supposed to serve is an intriguing question. The first part of the dissertation investigates the monitoring role played by institutions with regard to their proxy voting behavior. The second part of the dissertation analyzes how institutional investors respond to one of the most important investment decisions of corporations – mergers and acquisitions. The last part of the dissertation analyzes the extent to which market for corporate control undertakes

¹ John C. Bogle, “The battle for the Soul of Capitalism.”

monitoring role in reducing the agency problem in the context of executive compensation structure.

The analysis of mutual funds' proxy voting records on shareholder proposals is presented in chapter 2. Shareholder voting rights is an important corporate governance mechanism to reduce the agency problem. Usually institutional investors take part in proxy voting on behalf of individual investors who are the owners of their portfolio shares. The fiduciary responsibility of institutions obliged them to vote in the best interests of shareholders. However, there are concerns whether these institutions place their own interests over the interests of the shareholders they are supposed to serve. Especially, mutual funds, being the investment choice of most investors, are under greater scrutiny with regard to their proxy voting behavior. The massive ownership of mutual funds gives them an overwhelming power to guard shareholders' interests and reduce the agency problem by exercising their voting rights judiciously and by undertaking an activist role in the governance mechanism of the firm. However, the perception in the investment community is that mutual funds tend not to be in forefront of shareholder activism. Recent press article portray the concern investors have regarding mutual funds' monitoring role in guarding shareholders' interests.² We investigate mutual funds voting behavior on shareholder proposals and address the following three issues. First, we study the determinants of mutual funds' voting policies across firms. Next, we examine the incentive structure of mutual funds to undertake an activist role in their proxy voting behavior. Last, we investigate the trading behavior of mutual funds after the release of voting records to analyze whether mutual funds engage in "Wall Street Walk", that is sell off their shares when dissatisfied with firms' management. We analyze proxy

² On September 22, 2006 an article in Wall Street Journal reports how mutual vote in their proxies. The article reports the findings of a study done by corporate library that mutual funds vote in favor of management 92 percent of the time on management sponsored proposals and they favor shareholder proposals less than 30 percent of the time. Another article in Business Week on October 16, 2006 expresses concern why Fidelity being the world's largest mutual fund is not exercising their voting power to guard shareholders' interests.

voting records on shareholder proposals for the period July 1, 2003, to June 30, 2004. The data consist of the voting records of 433 mutual funds from 24 fund families. The final sample includes over 29,000 shareholder proposals covering 528 firms. Our results indicate that mutual funds undertake a monitoring role for proposals that are likely to increase shareholders' wealth and rights, in firms where they are likely to have higher influence, and in firms with a weaker external monitoring mechanism. Moreover, mutual funds' motivation to take on an activist role does not come from their ownership concentration, but rather from their long-term investment goal. The results further indicate that there is a positive reputational effect for the funds undertaking a monitoring role in their voting strategies. The trading behavior of mutual funds after the release of the voting records suggests that mutual funds reduce holdings when they disapprove the managements' policy, but before doing so they take on an activist role by supporting shareholders' proposals.

The third chapter investigates institutional investors' trading behavior of acquiring firm stocks surrounding merger activities for the period 1992 to 2001. By examining the trading behavior of institutions at merger announcement and at the final resolution of merger, we draw inferences on information environment of institutions and their ability to respond quickly and correctly with regard to new information released in the market upon merger announcement. We investigate how institutions process information released upon announcement of a merger and how they incorporate this new available information into their trading strategies. Furthermore, we examine whether they update their information set as more information arrives in the market and how they adjust their trading strategies. The paper also sheds light on whether there is heterogeneity among institutional investors with regard to skill and informational advantage surrounding merger activities. In a recent study, Almazan, Hartzell and Starks (2005) find differences in costs of monitoring across two categories of institutions in the context of executive compensation. The authors refer investment companies and

independent investment advisors as “potentially active” institutions and show that they face lower cost of monitoring than banks and insurance companies whom they refer to as “potentially passive” institutions. The authors state that “potentially active” institutions are more likely to have informational advantage and also likely to have competitive advantage with regard to employee skill, as compared to “potentially passive” institutions. We also group institutions into similar two categories and analyze their trading behavior in the context of merger announcement and its final resolution. Our results indicate that active institutions significantly increase their holdings of acquiring firm stocks for mergers with higher announcement period abnormal return and this increase is more pronounced for stock mergers than cash mergers. Active institutions display preference for stock proposals at the merger announcement on the basis of their prior beliefs and this is explained by the “*overreaction phenomenon*.” Finally, active institutions appear to correct their overreaction behavior by displaying their greater preference for cash proposals as compared to stock proposals at the quarter of eventual outcome. The trading behavior of passive institutions suggests that these institutions disregard the market response of merger announcement in trading acquiring firm stocks at the announcement quarter. The passive institutions gradually update their beliefs and utilize the information released at the announcement in rebalancing their portfolios at the final resolution.

The fourth chapter examines relation between executive compensation structure with the existing level and changes of takeover defense mechanisms of firms. Market for corporate control is considered to be an external monitoring mechanism to discipline managers and reduce the agency problem. In this paper we examine the extent to which market for corporate control undertake monitoring role in overseeing one of the most important and debatable corporate decisions – executive compensation. We investigate the following questions: Whether executive compensation structure depends on level of external monitoring mechanism represented by takeover vulnerability of the firm. In

particular, we examine whether managerial power in firms with high level of anti-takeover provisions (ATP) contribute in establishing higher compensation for executives. Next, we examine whether changes in takeover vulnerability cause any subsequent changes in executive compensation structure. How executive compensation structure is adjusted with increase and decrease in managerial power resulting from changes in anti-takeover provisions of the firm. We test two competing hypothesis relating anti-takeover provisions with executive compensation structure. According to “managerial entrenchment hypothesis,” higher managerial power from adoption of takeover defense mechanisms would lead to generating higher rents for executives. “Efficient contracting hypothesis” argue that higher anti-takeover provisions would contribute in achieving efficient contracting by deferring compensation into the future due to the low possibility of hostile takeover. The results support managerial entrenchment hypothesis with regard to existing level of takeover defense mechanisms. With regard to changes in anti-takeover provisions, the existing level of managerial power influence the future pay structure. Increase in takeover vulnerability of firms already strong in shareholder rights lead to decrease in compensation and increase in pay-for-performance sensitivity, supporting managerial entrenchment hypothesis. Whereas, increase in takeover vulnerability of firms already strong in managerial power lead to increase in compensation, supporting efficient contracting hypothesis. We argue that managerial power and not the takeover defense mechanism itself contribute in establishing compensation schemes following changes in anti-takeover provisions in firms which are already high in managerial power.

CHAPTER 2

DETERMINANTS AND CONSEQUENCES OF PROXY VOTING BY MUTUAL FUNDS ON SHAREHOLDER PROPOSALS

2.1. Introduction

An important corporate governance mechanism is the voting rights of shareholders. This allows shareholders to assert their ownership rights and reduce conflict of interests between management and shareholders. Shareholders not attending a company's annual meeting may choose to vote their shares by proxy by allowing someone else to cast votes on their behalf. Institutional investors take the responsibility to vote on behalf of individual investors, who are the owners of their portfolio shares.³ This gives the institutions the responsibility to cast votes in the direction that would maximize their shareholders' wealth and rights. However, without the requirement of the disclosure policy on how institutions vote on their proxies, shareholders are unable to assess whether the agents they hire vote consistent with their interests. Given that institutional investors hold approximately 66 percent of all U.S. publicly traded stocks, this issue has become increasingly more important in recent years. On January 23, 2003, the Securities and Exchange Commission (SEC) voted to adopt a new rule requiring mutual funds to disclose their proxy voting records on an annual basis.⁴ A Morningstar representative's comment was, "I hope that will put more pressure on funds to be more activist, at least in terms of how they vote their proxies."⁵

³ Voting behavior of institutions is studied by Brickley, Lease, Smith (1988), DeJong, Mertens and Roosenboom (2005), Gillan and Starks (2000), and Parino, Sias and Starks (2003), and Van Nuys (1993) among others.

⁴ Davis and Kim (2006) present an overview of the events that lead to the SEC regulation on proxy vote disclosure for mutual funds.

⁵ *The New York Times*, January 15, 2006.

This recent regulatory requirement for mutual funds to disclose their proxy votes allows us to investigate the monitoring role of mutual funds on shareholder proposals.⁶ We investigate the following three issues. First, we study the determinants of mutual funds' voting policies on shareholder proposals across firms. Next, we examine the incentive structure of mutual funds that could act as a motivational force for them to undertake an activist role in their proxy voting behavior. Last, we investigate the trading behavior of mutual funds and analyze whether mutual funds engage in "Wall Street Walk," that is, sell off their shares when dissatisfied with firms' management.

There are concerns that the voting behavior of mutual funds could be influenced by the potential or existing business relationship with the firms, arising from the conflict of interests between fund holders and fund management. Rothberg and Lilien (2005) provide an in-depth analysis of the proxy voting policies of the largest 10 fund families. They report that proxies are voted as a block across all the funds in a fund family and are voted in accordance with the policies that are laid out in the proxy voting disclosure. Their results do not support the notion that conflicts of interest cause a difference in voting behavior. The authors report that index funds vote against management more often than the more actively managed funds, although the difference is small and mostly driven by to the Vanguard Group of funds. Davis and Kim (2006) analyze the issue of conflicts of interest in more detail and show that the voting pattern across firms by the funds is determined by the voting policies of the respective fund families and is independent of client ties or ownership concentration. However, they find that fund companies with a

⁶ A debate surrounds around the effectiveness of shareholder activism through shareholder proposals. Karpoff (2001) provide a survey on shareholder activism and conclude that shareholder proposal is effective in changing the governance structure of firms; however it has negligible impact on share value and earnings. Other survey includes Black (1998), Gillan and Starks (1998), Gillan and Starks (2000), and Romano (2001). Despite the debate, shareholder proposals are getting increasing attention in recent years. Ertimur, Ferri and Stubben (2005) find that frequency of implementation of shareholder proposals has increased from 16% in 1997 to over 40% in 2003-2004 and likelihood of implementation increase with better governance structure of firm. Bebchuk, Cohen, and Ferrell (2004) find that six anti-takeover provisions have negative valuation consequences and they are also most common in shareholder resolution.

larger client base tend to adopt voting strategies that are more supportive of management compared to fund companies with a smaller client base. This supports the notion that the risk of alienating current and future clients is more for fund families with a larger client base and outweighs any benefits from a higher portfolio valuation or better reputation through shareholder activism.

This paper significantly extends the literature by further investigating the issue of mutual funds' voting policies and shedding light on what factors--other than business ties--contribute to their voting strategies across firms for different shareholder proposals. We examine whether mutual fund family voting is influenced by the family characteristics, characteristics and performance of the firm, governance structure of the firm, type of proposals, and ownership structure of the firm. We also investigate whether mutual funds engage in a differential monitoring role based on their investment horizon. We also extend the literature by examining the incentive structure of mutual funds that could act as a motivational force for them to undertake an activist role in their proxy voting behavior. Finally, we analyze the trading behavior of mutual funds and investigate whether mutual funds engage in "Wall Street Walk," that is, sell off their shares when dissatisfied with firms' management.⁷ Our data consist of the voting records of 433 mutual funds from 24 fund families. The final sample on shareholder proposals includes more than 29,000 observations covering 528 firms.

Gordon and Pound (1993) examine the voting outcome on shareholder proposals.⁸ They find that proposals receive more votes when they propose a direct restoration of shareholders' voting rights; when long-run stock performance has been poor; when the corporation has in the past enacted a large number of takeover defenses; when the insider

⁷ This paper does not analyze the effect of vote trading on mutual fund voting behavior due to unavailability of data. Christoffersen, Geczy, Musto, and Reed (2005) document the causes and consequences of vote trading. They show that demand for borrowed shares increases on voting record date and vote trading corresponds to support for shareholder proposals and opposition to management proposals.

⁸ Gillan & Starks (2000) also examine voting outcome and show that both the voting outcome and stock market response of the proxy proposals depend on the proposal type and sponsor identity.

ownership is low and outside blockholder ownership is high; and when they are sponsored by large institutional investors or active dissidents. In light of this study, we examine whether mutual fund families' voting policies are influenced by the family characteristics, characteristics and performance of the firm, governance structure of the firm, type of proposals, and ownership structure of the firm.

Our results suggest that bigger fund families tend to take management's side on shareholder proposals. We find smaller firms receive more shareholder support from mutual funds.⁹ As the manager of Olstein Financial Alert said, "We want to focus on small companies, where we can have more influence."¹⁰ Mutual funds favor shareholder proposals in firms with better past performance, which contradicts the results of the voting outcome as documented by Gordon and Pound (1993). We argue that higher visibility and the likelihood of greater valuation consequences through improved governance provisions make the good performing firms more attractive for monitoring by mutual funds.

Mutual funds' voting policies are also influenced by the existing governance structure of the firm. Specifically, the existing anti-takeover provisions of the firms have a positive effect on funds' percentage support for shareholders' proposals, suggesting that mutual funds undertake a monitoring role in firms that have a higher resistance to market for corporate control and hence that are more likely to have entrenched management.¹¹ This suggests that in the absence of an external governance mechanism through a takeover market, an internal governance mechanism through voting provisions undertakes a substitute monitoring role in order to discipline managers. A higher level of internal monitoring mechanism through blockholder ownership leads to a higher

⁹ Amzaleg, Ben-Zion, and Rosenfeld (2005) also find that smaller firms receive greater shareholder support by mutual funds in Israel.

¹⁰ *The New York Times*, January 15, 2006.

¹¹ Another competing argument is that higher anti-takeover provisions increase bargaining power of target board. However, the literature suggests that managerial entrenchment dominates the enhanced bargaining effect (Becht, Bolton, and Roell (2002)).

percentage support for shareholder proposals by mutual funds. This implies that mutual funds undertake a complementary monitoring role in their voting decision with the level of internal monitoring mechanism through blockholder ownership. In addition, the possibility of management entrenchment through a higher level of managerial ownership leads to superior monitoring by mutual funds. However, the presence of higher voting rights of insiders in dual-class shares discourages mutual funds to vote against management, as their voting is unlikely to change the outcome of the proposal. The results further indicate that mutual funds engage in an active monitoring role by supporting shareholder proposals in firms with higher market dissatisfaction and higher possibilities of improving governance structure.

Literature suggests that because of the free-rider problem, only investors with a large stake in the firm have incentives to undertake monitoring activities, since their gain from monitoring is likely to surpass the associated monitoring cost.¹² We investigate whether mutual funds with large holdings engage in costly monitoring in enhancing the governance mechanism of firms. Our results on the effects of ownership on voting decision indicate that mutual funds take management's side more when they have a large ownership stake in a firm.¹³ This could be due to the causality problem that mutual funds are likely to have larger stakes in firms where they are supportive of management policies. However, we observe that mutual funds vote against management more when they have a longer investment horizon. This suggests that, since the turnover of portfolios of the mutual funds industry is typically higher compared to other institutional investors, their motivation to take an activist role does not come from the ownership structure, but rather from their long-term investment goal.

The voting behavior of mutual funds is also influenced by the types of proposals. The proposals related to the repeal of anti-takeover provisions, which have a direct

¹² Shleifer and Vishny (1986), Grossman and Hart (1980), Huddart (1993) and Gillan and Starks (2000),

¹³ Amzaleg, Ben-Zion, and Rosenfeld (2005) also find that firms with higher ownership concentration receive less shareholder support by mutual funds in Israel.

positive effect on shareholders' wealth and rights, receive higher support.¹⁴ Mutual funds predominantly seem to side with management on issues related to executive compensation. However, for poorly performing firms they penalize management by supporting shareholder sponsored executive compensation related proposals.

Next, we observe the incentive structure of mutual funds if they undertake a monitoring role in shareholders' resolution. Davis and Kim (2006) argue that if fund management's activism increases portfolio value through better governance provisions, this will eventually lead to a better reputation and higher revenues.¹⁵ An intriguing question arises: Would mutual funds experience a direct reputational effect for supporting shareholder proposals? In particular, we investigate whether mutual funds' release of the voting records of shareholder proposals affects the funds' future asset flow. If mutual fund activism improves the funds' reputation, then higher support for shareholder proposals by the funds would likely increase funds' asset flow after the release of voting records. This direct effect would act as a stronger incentive for funds to actively engage in shareholder activism and support shareholder proposals. Our results suggest that funds that take on an activist role in shareholder proposals by providing higher support experience a positive net asset flow in the following year of the voting record release date. Moreover, the effect is mostly driven by the repeal of anti-takeover-related proposals, which have direct positive shareholder wealth implications. This suggests that mutual funds would experience a strong and direct positive reputational effect for undertaking an activist role in their voting behavior, which would encourage them to exercise their voting rights much more prudently.

Finally, we investigate the trading behavior of mutual funds surrounding the proposal meeting date and voting record release date. The existing notion is that

¹⁴ Our proposals related to repeal of anti-takeover provisions are among the six anti-takeover provisions identified by Bebchuk, Cohen, and Ferrell (2004) which have negative valuation consequences.

¹⁵ The causal link between corporate governance and equity price is not fully established, however, there is growing empirical evidence that corporate governance can substantially increase shareholder value. See Becht, Bolton, and Roell (2002) for an overview of corporate governance.

institutional investors sell their shares when they are dissatisfied with management, which is called “Wall Street Walk” or “Vote with Their Feet.”¹⁶ In 2002 the SEC reported: “Funds have often followed the so-called “Wall Street Rule” according to which an investor should either vote as management recommends or, if dissatisfied with management, sell the stock” (Rothberg and Lilien (2005)). Analyzing the trading behavior of mutual funds surrounding the proposal meeting date and voting record release date allows us to investigate whether mutual funds display such behavior. Our results indicate that mutual funds that provide a higher percentage of support for shareholder proposals engage in reducing their holdings after their voting. This suggests that mutual funds that are discontent with firm management support shareholder proposals in order to improve the governance provisions of the firms; however, they also reduce their holdings after the voting process. One could argue that, if mutual funds intend to benefit from the better governance provisions that would be implemented if the voting outcome were a success, they should increase or at least maintain their holdings. The reduction of their portfolio holdings suggests that anticipating a negative outcome, mutual funds sell off their shares. Hence, mutual funds’ vote for shareholder rights before reducing their holdings suggests that when dissatisfied with management, mutual funds undertake a monitoring role before they engage in “Wall Street Walk.”

The rest of the paper is organized as follows. In Section 2.2, we describe our sample and data source. In Section 2.3, we present our analysis of determinants of mutual funds’ voting policies across firms. In Section 2.4, we examine the reputational effect of mutual funds for undertaking an activist role in their proxy voting decision. We investigate the trading behavior of mutual funds surrounding proposal meeting date and voting records release date in Section 2.5. Finally, we present our conclusion in Section 2.6.

¹⁶ Parrino, Sias, and Starks (2003) study institutions’ “voting with their feet” around forced CEO turnover.

2.2. Sample and Data

In this section we describe our sample and data. In Section 2.2.1, we discuss our sample and describe our data source. In Section 2.2.2, we analyze the voting pattern of the fund families. In Section 2.2.3, we discuss our categorization of proposals and present the voting pattern of sample fund families in these categories. In Section 2.2.4, we present the linkage between the voting behavior and the investment decision.

2.2.1. Data

On January 23, 2003, the Securities and Exchange Commission (SEC) voted to adopt a new rule requiring mutual funds to disclose their proxy voting records on an annual basis.¹⁷ The new voting disclosure rules adopted by the SEC require both mutual funds and investment advisers to disclose the policies and procedures they utilize with respect to voting portfolio securities. Mutual funds are also required to disclose their complete voting record on Form N-PX, which needs to be filed no later than August 31 of each year and needs to cover the most recent 12-month period ending on June 30 of the same year. The N-PX Form contains the following information: the name of the issuer of the portfolio security; the exchange ticker symbol and CUSIP number of the portfolio security; the shareholder meeting date; a brief identification of the matter voted on; whether the matter was proposed by the issuer or a shareholder; whether the fund voted on the matter and how the fund voted; and whether the fund voted for or against management.

We obtained the mutual funds' proxy voting records of shareholders' proposals for 24 fund families for the year 2004. Fund families and the corresponding funds are selected on the basis of total net assets. We compute the total net asset value of all funds in the year 2004. The size of a fund family is computed by aggregating the total net assets

¹⁷ Davis and Kim (2006) present an overview of the events that lead to the SEC regulation on proxy vote disclosure for mutual funds.

of all the funds in a fund family. We identify the top 24 fund families with respect to the aggregate total net assets to collect the shareholder proposals voting records. Among all the funds in a fund family, we identify the funds that have more than \$1 billion in assets in the year 2004. For each of the 24 fund families we select the top 10 funds with voting records that have more than \$1 billion in assets. Some families with voting records have fewer than 10 funds with over \$1 billion in assets. For fund families with more than 50 funds over \$1 billion in assets, the number of funds selected is proportional to the number within the \$1 billion cut-off sample.¹⁸ This results in a sample of 433 mutual funds. Of these, the total number of funds with voting records is 216. The remaining funds did not have any shareholder proposals or did not possess any voting stocks. For this sample of mutual funds we obtain voting records for the period July 1, 2003, to June 30, 2004, on 528 firms.

Fund-specific data are obtained from the CRSP mutual fund database, and mutual fund ownership data are obtained from Thomson Financial mutual funds holdings database. We match the Thomson Financial mutual funds holdings data with the CRSP mutual fund data by matching the fund names. Ownership data by each fund family is obtained from CDA-Spectrum 13f filings, which report the quarterly holdings of the institutions. We match the mutual fund family holdings data in Thomson Financial 13-f filings with our voting data by matching the fund family names.

Returns, shares outstanding, and market capitalization data are obtained from the CRSP database. Firms' earnings data are obtained from the COMPUSTAT database. We obtain ownership data for corporate 5 percent blockholders with no obvious management affiliation, and a percentage of outstanding stock beneficially owned by managers and/or directors from Compact Disclosure SEC data source. We also incorporate Gompers, Ishii, and Metrick (2003) and Bebchuk, Cohen, and Ferrell (2004) governance scores, which

¹⁸ Our sample is subject to sample selection bias with respect to family and funds size. We select the biggest fund families as they play larger role in the investment community. Also, we select only the biggest funds within a fund family, since funds within a family mostly vote in the same direction.

are obtained from their web sites. Table 2.1 provides the descriptive statistics of the sample firms. The table reports the number of observations, mean, median, standard deviation, 10th percentile, and 90th percentile values of the firm characteristics, as well as performance, governance, and ownership variables. The variables are defined in detail in Appendix A.

Table 2.1: Descriptive Statistics of Sample Firms

The table provides the descriptive statistics of sample firms. The table presents Number of Observations, Mean, Median, Standard Deviation, 10th Percentile, and 90th Percentile of the firm level variables. FIRM SIZE is the natural logarithm of market capitalization of firm in the previous quarter of the proposal. BOOK TO MKT is the book-to-market ratio of the firm in the previous quarter of the proposal. RETURN PAST 90 DAYS is the buy-and-hold abnormal return of the firm over 90 days prior to proposal meeting date. LONG RUN EXCESS RETURN is the buy-and- hold abnormal return of the firm over five years prior to and ending three months prior to proposal meeting date. MAJOR STOCK LISTING is a dummy variable, which takes the value one if the stock is listed in one of the major stock market. GIM is the Gompers-Ishii-Metrick governance score of the firm in the year of the proposal. BCF is the Bebchuk-Cohen-Ferrell governance measure of the firm in the year of the proposal. NUMBER OF PROPOSALS is the number of shareholder proposals for a particular firm. PERCENT SHARE HOLD is the percent of outstanding shares held by the fund family in the quarter of proposal. ALL INST HOLD is the percent of outstanding shares held by all institutional investors in the previous quarter of proposal. BLOCKHOLDER HOLD is the percent of outstanding shares held by non-management 5-percent blockholder in the previous quarter of the proposal. INSIDER HOLD is the percent of outstanding shares held by managers and/or directors in the previous quarter of the proposal.

Variables	Number of Observations	Mean	Median	Std Dev	10 th Percentile	90 th Percentile
FIRM SIZE	333	8.703	8.728	1.698	6.766	10.955
BOOK TO MKT	332	0.454	0.430	0.422	0.132	0.827
RETURN PAST 90 DAYS	353	0.018	0.007	0.178	-0.172	0.195
LONG RUN EXCESS RETURN	354	0.396	0.013	1.916	-0.768	1.477
MAJOR STOCK LISTING	437	0.689	1	0.463	0	1
GIM	309	9.660	10	2.402	7	13
BCF	319	2.505	3	1.30	1	4
NUMBER OF PROPOSALS	437	2.613	2	2.375	1	6
PERCENT SHARE HOLD	285	0.018	0.006	0.026	0.0005	0.061
ALL INST HOLD	357	0.671	0.717	0.209	0.389	0.889
BLOCKHOLDER HOLD	381	0.287	0.257	0.225	0.0	0.587
INSIDER HOLD	381	0.047	0.006	0.113	0.0001	0.143

Table 2.2 Descriptive Statistics of Voting Records of Sample Fund Families

This table presents descriptive statistics of voting records of our sample fund families, which are the top 24 fund families with respect to total net assets for the year 2004. For each of the fund families the table reports Total Number of Voting Records in the sample data. The Table reports how these 24 fund families voted on shareholder proposals that appeared in proxy statements for the period July 2003 till June 2004. For each of the fund families voting records are obtained from the SEC N-PX filings, for 10 or more funds that have over \$1 billion in assets. For each of the fund families' sample voting records, the table shows %Vote Cast "for," %Vote Cast "against," %Vote Cast "abstain," and %Vote Cast "Unknown."

Management Name	Total Number of Voting Records in Sample	% Vote Cast "for"	% Vote Cast "against"	% Vote Cast "abstain"	% Vote Cast "unknown"
Fidelity Management Research	3844	0.167	0.705	0.123	0.005
Dreyfus Corporation	971	0.192	0.784	0.025	0.000
Capital Research & Management Co.	2245	0.181	0.774	0.009	0.036
Deutsche Asset Management	2456	0.321	0.677	0.002	0.000
Vanguard Group Investment Co.	3350	0.192	0.484	0.324	0.000
Franklin Advisers Inc.	1290	0.197	0.759	0.031	0.013
Federated Investment Management Co	623	0.061	0.934	0.005	0.000
AIM Advisors Inc.	1368	0.185	0.645	0.167	0.002
Smith Barney Asset Management	1004	0.276	0.713	0.009	0.002
Putnam Investment Mgmt LLC	1456	0.158	0.830	0.011	0.001
Alliance Capital Management Corp.	290	0.241	0.710	0.048	0.000
Prudential Securities Incorporated	1055	0.269	0.572	0.159	0.000
Allianz Dresdner Asset Mgmt	448	0.467	0.513	0.020	0.000
Merrill Lynch Investment Managers	817	0.206	0.785	0.010	0.000
Oppenheimer Funds	1027	0.155	0.472	0.373	0.000
MFS Investment Management	1587	0.129	0.858	0.013	0.000
Columbia Management Group Inc.	402	0.356	0.582	0.060	0.002
Goldman Sachs Asset Management	78	0.244	0.756	0.000	0.000
Morgan Stanley Investment Advisors	1213	0.153	0.838	0.007	0.003
American Express Financial Advisors	869	0.119	0.873	0.005	0.003
ING Investments LLC	460	0.161	0.817	0.022	0.000
Banc One Investment Advisors	453	0.302	0.671	0.026	0.000
JPMorgan Fleming Asset Management	970	0.340	0.660	0.000	0.000
T Rowe Price Associates Inc.	1445	0.241	0.754	0.001	0.005
Total Number of Proposals	29795	0.221	0.715	0.060	0.003

2.2.2. Voting Pattern

Table 2.2 presents the percentage of votes cast as "for," "against," "abstain," and "unknown" on our sample shareholders' proposals by the 24 fund families for the period July 2003 to June 2004. For all the fund families reported, the percentage of votes cast "against" shareholder proposals is higher than the percentage of votes cast "for" or "abstain." We observe that in the aggregate level there is no distinct pattern in voting behavior with respect to the fund family size. For our analysis, we consider votes cast

“for” as votes against management and votes cast “against” or “abstain” as support toward management. We also perform analysis considering votes cast “for” or “abstain” as support of the proposals, and the results remain the same.¹⁹ For our sample, management required a vote “against” the proposals 99 percent of the time. As robustness checks we perform an analysis excluding proposals that management required a vote “for” the proposals and the results remain the same.

2.2.3. Types of Proposals

Our sample data includes 75 types of proposals, which are reported in Appendix B. We group these proposals into seven broad categories following the existing literature.²⁰ The ANTITAKEOVER category consists of proposals that are related to the repeal of anti-takeover provisions and includes *Repeal Poison Pill*, *Declassify Board*, *Eliminate Golden Parachutes*, *Eliminate Supermajority Provision*, and *Opt-out of State Anti-takeover Law*. The VOTING ISSUES category consists of proposals concerning changes in voting rules and includes *Cumulative Voting*, *Confidential Voting*, *One-share-one vote*, and *Other Voting Relate Issues*. The SHAREHOLDER WEALTH AND RIGHTS category includes proposals that are likely to increase shareholders’ rights and/or wealth and that are not in the anti-takeover or voting provision category. We include 21 types of proposals in this category, including *Expense Stock Options*, *Separate CEO and Chair of the Board*, *Insider Notice of Stock and Option Trade*, and *Establish an Office for Stockholder Communications*.²¹ The next category is EXECUTIVE COMPENSATION, which consists of proposals that are related to executive

¹⁹ Through the paper we use phrases “votes against management” and “support of shareholder proposals” alternatively. Rothberg and Lillien (2005) consider votes cast “abstain” as votes against management. Fund families also mention in their proxy voting statement that abstain voting policy is an indication that mutual funds are not supporting management.

²⁰ Gillan & Starks (2000), Rothberg & Lilien (2005), Gompers, Ishii & Metrick (2003).

²¹ The wealth implication of all the proposals in this category is not documented in the academic literature. We include proposals in this category on the basis of the perception of the proposals by the popular press and activist community.

compensation and includes proposals such as *Limit Awards to Executives*, *Disclosure of Compensation*, *Performance Based Stock Options*, and *Submit Executive Compensation to Vote*. The DIRECTOR RELATED category consists of proposals related to the board and includes issues such as *Majority Independent Board*, *Board Size*, and *Director Compensation*. The AUDIT category includes proposals related to the audit committee, and the OTHERS category includes all social and ethical related proposals.

Table 2.3 reports the percentage of votes cast “for” the shareholder proposals by the 24 fund families for the seven categories of proposals. The table shows that all 24 fund families display a higher percentage support for the shareholder proposals for the ANTITAKEOVER category compared to all other categories. Proposals in the category VOTING ISSUES and SHAREHOLDER WEALTH AND RIGHTS received the second and third highest percentage support for some of the fund families. Hence, mutual fund families’ support for these proposals highlights the fact that they undertake a monitoring role when shareholder proposals are considered as direct restoration of shareholder rights and wealth. The results further document that EXECUTIVE COMPENSATION receives the second lowest percentage support from most of the fund families. The percentage support for the DIRECTOR RELATED and AUDIT categories varies across the fund families. The low percentage support on executive compensation issues raises a concern as to whether mutual funds are having effective oversight over the firms’ management compensation issues and whether their voting behavior is based on its fiduciary obligations to its clients.²² Davis and Kim (2006) consider all the proposal categories

²² An article in Wall Street Journal on March 28, 2006 reports findings of a study, done by American Federation of State, County and Municipal Employees labor union in Washington, and Corporate Library, documenting that large mutual fund companies mostly favor management on executive compensation issues. The study report that large fund families generally oppose shareholders’ proposals seeking to restrict executive pay and provide support only 27.6% of the time. The study did not provide a concrete reason for such voting behavior. One reason pointed out is that fund companies believe that executive pay is fair and aligned with shareholders’ interests. The other reason provided is conflict of interests of mutual funds due to existing or potential business ties with its portfolio firms.

Table 2.3: Percentage of Vote in Support for Different Shareholder Proposals

The table reports percentage of votes cast “for” the shareholder proposals by the 24 fund families. The sample proposals are categorized into six types: ANTITAKEOVER are proposals related to the elimination of anti-takeover measures; VOTING ISSUES are proposals related to voting rules; SHAREHOLDER WEALTH AND RIGHTS are proposals related to shareholder wealth and rights; EXECUTIVE COMPENSATION are proposals related to executive compensation; DIRECTOR RELATED are proposals related to director independence, compensation, or board size; AUDIT are the proposals related to audit committee; OTHERS are general types of proposals. The details of these categories are presented in Appendix B.

Management Name	ANTITAKEOVER	VOTING ISSUES	SHAREHOLDER WEALTH AND RIGHTS	EXECUTIVE COMPENSATION	DIRECTOR RELATED	AUDIT	OTHERS
Fidelity Management Research	0.756	0.112	0.219	0.087	0.139	0.224	0.007
Dreyfus Corporation	0.770	0.056	0.172	0.067	0.111	0.250	0.031
Capital Research & Management Co.	0.680	0.509	0.244	0.022	0.119	0.100	0.053
Deutsche Asset Management	0.826	0.321	0.515	0.083	0.310	0.200	0.080
Vanguard Group Investment Co.	0.636	0.041	0.247	0.017	0.065	0.294	0.056
Franklin Advisers Inc.	0.559	0.433	0.282	0.182	0.385	0.333	0.025
Federated Investment Management Co	0.472	0.021	0.000	0.000	0.000	0.000	0.000
AIM Advisors Inc.	0.681	0.450	0.129	0.110	0.239	0.092	0.056
Smith Barney Asset Management	0.765	0.406	0.342	0.122	0.200	0.143	0.090
Putnam Investment Mgmt LLC	0.865	0.053	0.072	0.009	0.194	0.000	0.008
Alliance Capital Management Corp.	0.500	0.250	0.333	0.255	0.200	0.333	0.059
Prudential Securities Incorporated	0.786	0.424	0.316	0.150	0.377	0.747	0.010
Allianz Dresdner Asset Mgmt	0.648	0.333	0.512	0.131	0.417	0.250	0.083
Merrill Lynch Investment Managers	0.548	0.308	0.162	0.147	0.188	0.500	0.062
Oppenheimer Funds	0.637	0.067	0.167	0.064	0.179	0.000	0.017
MFS Investment Management	0.847	0.028	0.021	0.028	0.063	0.000	0.000
Columbia Management Group Inc.	0.735	0.056	0.549	0.229	0.472	0.250	0.133
Goldman Sachs Asset Management	0.800	0.000	0.357	0.283	0.500		0.135
Morgan Stanley Investment Advisors	0.467	0.100	0.288	0.074	0.283	0.250	0.027
American Express Financial Advisors	0.678	0.118	0.193	0.011	0.292	0.000	0.010
ING Investments LLC	0.708	0.227	0.049	0.006	0.105	0.000	0.024
Banc One Investment Advisors	0.538	0.600	0.376	0.234	0.179		0.180
JPMorgan Fleming Asset Management	0.833	0.571	0.400	0.158	0.300	1.000	0.200
T Rowe Price Associates Inc.	0.813	0.500	0.190	0.255	0.288	0.286	0.043
Mean Percentage Support	0.690	0.249	0.256	0.113	0.233	0.219	0.058

while investigating client ties and voting behavior relationship and find that business ties do not influence funds' voting decision. It is quite possible that fund voting behavior on executive compensation issues is influenced by client ties --we leave this for future research.

One of the interesting questions to explore is whether mutual funds vote in support of the shareholder proposals more if the sponsor of the proposal is an institutional investor. Since we do not have sponsor identity data for our sample shareholder proposals, we are unable to address this question directly. However, we shed some light on this issue by inferring from the study by Gillan and Starks (2000). The authors show that the proposals sponsored by institutions or coordinated groups tend to focus on mainly three categories of issues: proposals related to anti-takeover devices, proposals related to changes in voting rules, and proposals related to board independence. Table 2.3 shows that the percentage of votes "for" the shareholder proposals by mutual funds is higher for ANTITAKEOVER and VOTING ISSUES, suggesting that mutual funds favor shareholder proposals that are more likely to be sponsored by institutions, although we are unable to establish a direct link between them.

2.2.4. Variation in Voting Behavior with Investment Horizon

We investigate whether mutual funds with different investment horizons display different proxy voting behavior. We hypothesize that mutual funds with a longer investment horizon will tend to be more active in their monitoring role compared to other actively managed funds with a shorter investment horizon, since their gain from monitoring would be higher as a result of the longer horizon. Typically, value funds have a longer investment horizon, and hence we examine whether value funds are more vigilant in guarding shareholders' interests in their proxy voting behavior. Table 2.4 reports the distribution of voting records on shareholder proposals by mutual funds in different investment styles. All funds are categorized according to five different styles

based on Standard & Poor’s Style Code: Value, Growth, Blend, Balanced, and Others. For each category of style, the table reports the percentage of votes cast “for” the proposals, percentage of votes cast “against” the proposals, percentage of votes cast as “abstain,” and percentage of votes cast as “unknown.” The table shows that the percentage of votes cast “for” the shareholders’ proposals is higher for value funds compared to any other styles. The percentage of votes cast “against” show that value funds provide lower support to management compared to most other fund style categories. Only the blend funds display lower percentage support of management than value funds. This supports the notion that value funds are more involved in shareholders’ activism. A managing director at Tweedy Brown said, “The primary reason value investors are more often involved is that they tend to have longer holding periods than other types of actively managed mutual funds.”²³

Table 2.4: Shareholder Proposals Voting Records Based on Fund Style

The table reports the distribution of voting records on shareholder proposals by mutual funds in different investment styles. All funds are categorized according to five different styles based on Standard & Poor’s Style Code: Value, Growth, Blend, Balanced, and Others. For each category of style the table reports percentage of votes cast “for” the proposals, percentage of votes cast “against” the proposals, percentage of votes cast “abstain,” and percentage of votes cast “unknown.”

Fund Style	Number of Funds	% Vote Cast “for”	% Vote Cast “against”	% Vote Cast “abstain”	% Vote Cast “unknown”
Value	39	0.214	0.728	0.055	0.003
Growth	61	0.173	0.760	0.066	0.000
Blend	41	0.199	0.703	0.093	0.004
Balanced	16	0.151	0.733	0.113	0.003
Others	71	0.192	0.740	0.053	0.014

²³ *The New York Times*, January 15, 2006.

We test the fund voting behavior with respect to investment horizon by using fund portfolio turnover ratio as another proxy for the investment horizon. The fund portfolio turnover ratio is computed by dividing the minimum of aggregate sales or aggregate purchase of securities by the average 12-month total net assets of the funds. We consider the average turnover ratio of funds over the five years prior to shareholder proposals as a proxy for the funds' investment horizon, where higher (lower) turnover ratio implies funds with a short (long) investment horizon. Funds are ranked in 10 deciles based on turnover ratio in ascending order, with decile 1 has the funds with least turnover ratio and decile 10 has the funds with most turnover ratio. We computed the average percentage votes cast "for" and "against" on shareholder proposals across these 10 deciles. Figure 2.1 shows the voting pattern for the 10 turnover deciles. Figure 2.1A shows the average percentage of votes cast "for" by the 10 turnover deciles. We observe that the higher the turnover decile, the lower the percentage of votes cast for shareholder proposals. This suggests that mutual funds with a shorter (longer) investment horizon tend to be less (more) supportive of shareholder proposals. Figure 2.1B shows the average percentage of votes cast "against" by the 10 turnover deciles. The figure shows that low turnover decile funds tend to oppose shareholder proposals less often compared to funds in high turnover deciles. This again suggests that mutual funds with a longer (shorter) investment horizon tend to be less (more) supportive of management and more (less) supportive of shareholders. The difference between the two extreme deciles 1 and 10 is presented in Table 2.5. The table shows the mean and median of the percentage votes cast "for" and "against," their differences, and statistical significance of the differences between the two extreme deciles. We observe that both the mean and median differences are statistically significant. The results reiterate the notion that mutual funds with a longer investment horizon tend to be more supportive of shareholder proposals compared to funds with a shorter investment horizon.

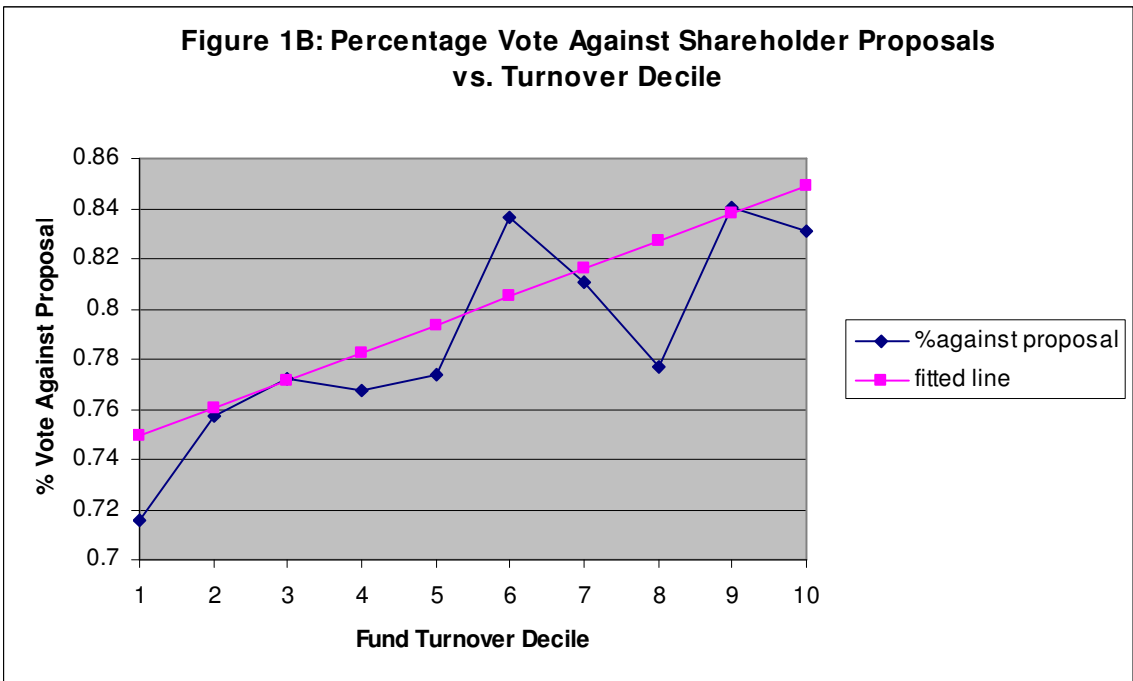
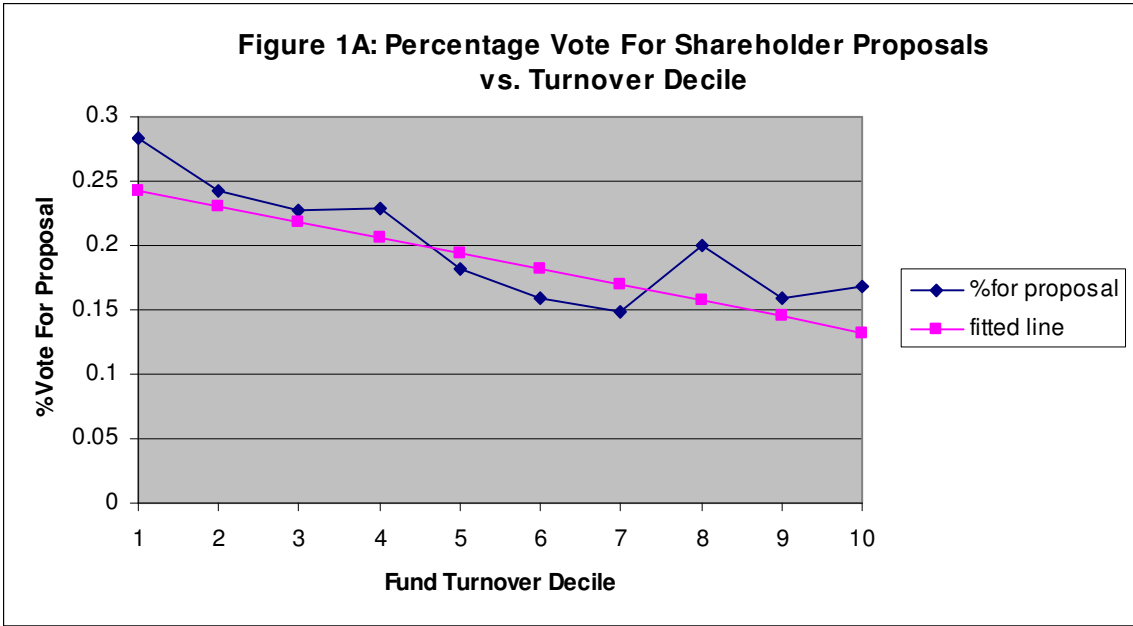


Figure 2.1: Fund Voting Behavior with Respect to Investment Horizon

The fund portfolio turnover ratio is a proxy for the investment horizon. The fund portfolio turnover ratio is computed by dividing the minimum of aggregate sales or aggregate purchase of securities by the average 12-month total net assets of the funds. Funds are ranked in 10 deciles based on turnover ratio in ascending order, with Decile 1 the least turnover funds (long investment horizon) and Decile 10 the most turnover funds (short investment horizon). The average percentage votes cast “for” and “against” shareholders’ proposals by these 10 decile portfolio of funds is plotted. Percentage vote casts “for” shareholder proposals vs. fund turnover deciles is presented in Figure 1A. Percentage vote casts “against” shareholder proposals vs. fund turnover deciles is presented in Figure 1B.

Table 2.5: Shareholder Proposals Voting Records Based on Fund Turnover Decile

The table reports mean and median percentage of votes cast for and against shareholder proposals on fund turnover Deciles 1 and 10. Funds are ranked in 10 deciles based on turnover ratio in ascending order, with Decile 1 the least turnover funds and Decile 10 the most turnover funds. The table reports mean, median, number of observation, difference in mean and median, and p-value for the differences. Fund turnover ratio is computed by dividing the minimum of aggregate sales or aggregate purchase of securities by the average 12-month total net assets of the funds. The average turnover of the previous five years of shareholder proposals is considered to construct the deciles.

	Fund Turnover Decile		Difference Mean (Median)	p-value for difference (Wilcoxon-test for difference)
	Decile 10 Mean (Median) [N]	Decile 1 Mean (Median) [N]		
% Vote Cast “for”	0.168 (0.141) [27]	0.284 (0.312) [18]	-0.116 (-0.171)	0.001 (0.0008)
% Vote Cast “against”	0.831 (0.859) [27]	0.716 (0.687) [18]	0.115 (0.172)	0.001 (0.0008)

2.3. Determinants of Mutual Funds’ Voting Policies across Firms

The voting records of mutual funds suggest that their voting pattern varies across firms. For example, for a shareholder proposal on “repeal of poison pill,” a mutual fund could vote “for” the proposal for a particular firm, but vote “against” the proposal for another firm. This variation in voting pattern across firms is our rationale for investigating the determinants of the mutual fund voting behavior. Davis and Kim (2006) report that among the 10 largest fund families, Fidelity, Vanguard, Putnam, American Funds, Morgan Stanley, and Oppenheimer vote consistently across funds, whereas funds in the T. Rowe Price, AIM/Invesco, Janus, and Franklin families voted differently in certain instances (same company proposals). Rothberg and Lilien (2005) examine the proxy voting policies of the 10 largest fund families and report that funds vote according to their proxy policy guidelines, which are established by the higher management of the fund families. If a fund manager intends to vote contrary to the guidelines, the case would go to a committee or top management, which would oversee the matter. Since the

variation of voting pattern for a particular proposal across funds in a family is not a dominant feature, we analyze the voting behavior at the fund family level.

Davis and Kim (2006) show that mutual fund voting behavior is not influenced by the business ties with the firm. The authors state that “mutual funds may have to bite some feeding hands in order to appear even-handed; yet they also have incentives to create policies that lead to less hand-biting.” The question we address is what determines which hands they are going to bite and which hands they are going to let go. That is, we further investigate the issue of their voting policies and shed light on how mutual fund families’ voting pattern varies across firms for different shareholder proposals. In Section 2.3.1, we examine the variation of voting behavior in extreme portfolios based on firm characteristics, performance, and existing anti-takeover provisions. In Section 2.3.2, we present our empirical findings on determinants of mutual funds’ voting policies across firms. In our analysis we do not include the proposals related to environment, social, and ethical issues that are categorized as OTHERS in the paper, as the implications of these proposals to shareholder value are not clear. Additionally, we perform analysis (not shown in the table) only on proposals that are likely to have positive wealth implications such as repeal of anti-takeover proposals, voting-related proposals, and other shareholder wealth and rights related proposals; the results remain qualitatively the same.

2.3.1. Variation of Voting Behavior in Extreme Portfolios

A. Firm Characteristics and Performance

We first examine whether funds’ voting behavior varies in extreme portfolios based on firm characteristics and performance variables; the results appear in Table 2.6.²⁴ FIRM SIZE is the natural logarithm of market capitalization of a firm in the previous quarter of the proposal. We construct 10 portfolios based on size, where P1 represents

²⁴ Gordon and Pound (1993) analyze voting outcome of shareholder proposals with respect to firm characteristic and performance variables.

the portfolio with the smallest firms and P10 represents the portfolio with the largest firms. BOOK TO MKT is the book-to-market ratio of the firm in the previous quarter of the proposal. Similar to size, we construct 10 portfolios based on book-to-market ratio, where P1 represents portfolio of glamour stocks and P10 represents portfolio of value stocks. As a measure of historical long-run performance of the firm, we introduce HISTORICAL LONG RUN EXCESS RETURN, which is the buy-and-hold abnormal return of the firm over the five years prior to and ending three months prior to the proposal meeting date. P1 represents portfolio of worst performing firms and P10 represents portfolio of best performing firms. Table 2.6 shows the mean and median of the percentage support for shareholder proposals and the statistical significance of the differences between the two extreme portfolios. In Panel A, votes cast “for” or “abstain” are considered as votes against management and in Panel B only votes cast “for” are considered as votes against management. We observe that in both panels, the mean support for shareholder proposals on portfolios of small firms (P1) is higher than the mean support on portfolios of large firms (P10), and their difference is statistically significant. This suggests that on average small firms receive higher support for shareholder proposals as compared to large firms.²⁵ The mean difference in support between extreme portfolios based on book-to-market ratio indicates that mutual funds provide higher percentage support for shareholder proposals of glamour stocks.

On the basis of performance, we observe that the mean percentage support for the lowest performance portfolio (P1) is higher than that of the highest performance portfolios (P10), although the difference is significant only when both “for” or “abstain” votes are considered to be support of shareholder proposals. We further test the difference in voting behavior between the two extreme portfolios based on past performance on executive compensation issues.

²⁵ Amzaleg, Ben-Zion, and Rosenfeld (2005) find that smaller firms receive greater shareholder support by mutual funds in Israel. Gordon and Pond (1993) also find that smaller firms receive higher percentage of votes cast in favor of proposals.

Table 2.6: Percentage Support for Shareholder Proposals in Extreme Portfolios Based on Size, Book-to-Market and Performance

The table presents the mean and median percentage support for shareholder proposals for extreme portfolios of stocks based on size, book-to-market, and performance. The number of observations is presented in the bracket. FIRM SIZE is the natural logarithm of market capitalization of the firm in the previous quarter of the proposal. Ten size-based portfolios are formed, where P1 represents the portfolio with the smallest firms and P10 represents the portfolio with the largest firms. BOOK TO MKT is the book-to-market ratio of the firm in the previous quarter of the proposal. Ten portfolios based on book-to-market ratio are formed, where P1 represents the portfolio of glamour stocks and P10 represents the portfolio of value stocks. HISTORICAL LONG RUN EXCESS RETURN is buy-and-hold abnormal return of the firm over five years prior to and ending three months prior to the proposal. Performance based portfolios represent P1 the worst performing firms and P10 the best performing firms. For each portfolio of stocks, the table reports the mean and median of the percentage support for shareholder proposals by all the fund families in the sample and the statistical significance of the differences between the two extreme portfolios. In panel (A), votes cast “for” or “abstain” are considered as support of shareholder proposals. In panel (B), votes cast “for” are considered to be support of shareholder proposals.

	Votes Cast	Variable for Portfolio Construction	P1 Mean (Median) [N]	P10 Mean (Median) [N]	p-value for difference (Wilcoxon-test for difference)
Panel A	“for” or “abstain”	FIRM SIZE	0.480 (0.50) [36]	0.213 (0.138) [76]	0.0001 (0.38)
		BOOK TO MKT	0.521 (0.520) [42]	0.377 (0.268) [58]	0.05 (0.03)
		HISTORICAL LONG RUN EXCESS RETURN	0.524 (0.50) [50]	0.359 (0.20) [45]	0.03 (0.24)
Panel B	“for”	FIRM SIZE	0.393 (0.125) [36]	0.154 (0.019) [76]	0.0003 (0.18)
		BOOK TO MKT	0.451 (0.5) [42]	0.336 (0.146) [58]	0.14 (0.42)
		HISTORICAL LONG RUN EXCESS RETURN	0.423 (0.382) [50]	0.330 (0.141) [45]	0.25 (0.5)

On average, firms in the worst performing portfolio receive higher support (mean 0.235) on executive compensation issues than firms in the best performing portfolio (mean 0.073). The difference in mean between the worst and best performing portfolios is statistically significant (P-value 0.08). This suggests that mutual funds side with

shareholders more on executive compensation issues for the extreme underperforming firms, thereby penalizing management for poor performance.²⁶

B. Governance Mechanism

Cremers and Nair (2005) investigate how the market for corporate control, which is the external governance mechanism, interacts with shareholder activism, which is the internal governance mechanism. They show that external and internal governance mechanisms complement to each other, which results in long-term abnormal returns and profitability of firms. They use percentage of share ownership by public pension funds and by the largest blockholders as the proxy for the internal governance mechanism. As a proxy for the external governance mechanism they use the anti-takeover provisions (ATP) incorporated by the firms.²⁷ Higher anti-takeover provisions (ATP) imply higher resistance for market for corporate control. Hence, these firms are more likely to have entrenched management, as they are less likely to be disciplined by the takeover market. We investigate how the internal governance mechanism in the form of mutual funds' voting behavior interacts with the external governance mechanism in the form of market for corporate control. We test whether mutual funds engage in disciplining management through their voting behavior in the absence of an external monitoring force through the takeover market. In particular, we investigate whether mutual funds undertake a greater monitoring role in high ATP firms by providing higher support for shareholder proposals in order to reduce the conflicts of interest between managers and shareholders.

We use the Gompers, Ishii, and Metrick (2003) governance score of the firm in the year of the proposal as a measure of anti-takeover provisions of firms. The construction of the score predominantly considers anti-takeover provisions and hence the measure is accepted as an anti-takeover provision (ATP) rather than a representation of

²⁶ The details of these results are available upon request.

²⁷ Coates (2000) and Bhagat and Romano (2001) provide a survey of the literature regarding takeover defenses.

the overall governance of the firm. The study documents that the GIM index is negatively related to firm value and stock return. The GIM index is constructed by 24 anti-takeover provisions published by the Investor Responsibility Research Center (IRRC), giving each provision equal weight. Bebchuk, Cohen, and Ferrell (2004) argue that not all 24 IRRC provisions contribute equally to the negative correlation between GIM index and firm value. They identify six provisions among the 24 that reduce shareholders' protection: classified boards, poison pills, golden parachutes, limit to amend by-laws, and supermajority requirements for mergers and charter amendments. The authors provide an entrenchment index (BCF) based on these six provisions and show that they have negative valuation consequences in firms, both individually and at the aggregate level. The authors further state that the other 18 provisions are not significantly negatively correlated with firm value.

We investigate the effect of existing anti-takeover provisions of firms on voting behavior of mutual funds using both GIM and BCF indices. We construct "Low ATP" and "High ATP" portfolios based on both GIM and BCF indices. In the case of GIM, we classify firms with a GIM index below 10 (sample median) as "Low ATP" portfolio and firms with a GIM index equal to or higher than 10 as "High ATP" portfolio. Following Masulis, Wang, and Xi (2006), we do not construct portfolios on the basis of a cut-off GIM index, as mentioned in Gompers-Ishii-Metrick (2003), as this would reduce our sample size significantly. We also construct high and low ATP portfolios on the basis of BCF index, with a BCF index equal to or greater than three as "High ATP" portfolio and a BCF index less than three as "Low ATP" portfolio. In Table 2.7, we present the mean and median percentage support for shareholder proposals for the portfolio of stocks constructed using governance indices. In panel A, we consider votes cast "for" or "abstain" as support for shareholder proposals (votes against management) and in panel B we only consider votes cast "for" as support for shareholder proposals. We observe that at the aggregate level, the mean and median percentage of votes cast in favor of the

Table 2.7: Percentage Support for Shareholder Proposals and Governance Indices

The table presents the mean and median percentage support for shareholder proposals for portfolio of stocks based on governance index. The number of observations is presented in the bracket. GIM is the Gompers-Ishii-Metrick governance measure and BCF is the Bebchuk-Cohen-Ferrell governance measure. For GIM index *High ATP Portfolio* is formed by stocks with $GIM \geq 10$ and *Low ATP Portfolio* is formed by stocks with $GIM \leq 9$. For BCF index *High ATP Portfolio* is formed by stocks with $BCF \geq 3$ and *Low ATP Portfolio* is formed by stocks with $BCF \leq 2$. For each portfolio of stocks the table reports the mean and median percentage support for shareholder proposals by all the fund families in the sample. In panel A votes cast “for” or “abstain” are considered as support of shareholder proposals. In panel B votes cast “for” are considered to be support of shareholder proposals.

Table 2.7: Panel A: “for” or “abstain” as support of shareholder proposals				
Proposals	Variable for Portfolio Construction	High ATP Mean (Median) [N]	Low ATP Mean (Median) [N]	p-value for difference (Wilcoxon-test for difference)
All	GIM	0.449 (0.360) [284]	0.307 (0.2) [292]	<0.0001 (<0.0001)
	BCF	0.459 (0.389) [277]	0.302 (0.212) [319]	<0.0001 (<0.0001)
ANTITAKEOVER	GIM	0.828 (0.889) [68]	0.651 (0.808) [47]	0.001 (0.005)
	BCF	0.831 (0.889) [73]	0.635 (0.808) [45]	0.0003 (0.004)
VOTING ISSUES	GIM	0.376 (0.333) [17]	0.273 (0.327) [25]	0.30 (0.27)
	BCF	0.334 (0.333) [17]	0.295 (0.289) [28]	0.68 (0.34)
SHAREHOLDER WEALTH AND RIGHTS	GIM	0.409 (0.333) [63]	0.31 (0.269) [65]	0.05 (0.03)
	BCF	0.402 (0.357) [58]	0.327 (0.269) [70]	0.14 (0.12)
EXECUTIVE COMPENSATION	GIM	0.094 (0.021) [52]	0.124 (0.056) [54]	0.38 (0.29)
	BCF	0.057 (0.0) [45]	0.138 (0.072) [66]	0.01 (0.005)
DIRECTOR RELATED	GIM	0.438 (0.333) [17]	0.153 (0.0) [24]	0.004 (0.003)
	BCF	0.339 (0.169) [18]	0.217 (0.157) [26]	0.22 (0.24)

Proposals	Variable for Portfolio Construction	High ATP Mean (Median) [N]	Low ATP Mean (Median) [N]	p-value for difference (Wilcoxon-test for difference)
All	GIM	0.345 (0.148) [284]	0.229 (0.019) [292]	0.0001 (0.001)
	BCF	0.351 (0.143) [277]	0.224 (0.040) [319]	<0.0001 (0.001)
ANTITAKEOVER	GIM	0.819 (0.875) [68]	0.635 (0.694) [47]	0.007 (0.004)
	BCF	0.823 (0.875) [73]	0.620 (0.6) [45]	0.0002 (0.002)
VOTING ISSUES	GIM	0.304 (0.021) [17]	0.204 (0.154) [25]	0.31 (0.32)
	BCF	0.240 (0.021) [17]	0.238 (0.160) [28]	0.98 (0.47)
SHAREHOLDER WEALTH AND RIGHTS	GIM	0.285 (0.176) [63]	0.235 (0.084) [65]	0.35 (0.22)
	BCF	0.252 (0.035) [58]	0.273 (0.198) [70]	0.69 (0.13)
EXECUTIVE COMPENSATION	GIM	0.07 (0.0) [52]	0.103 (0.0) [54]	0.33 (0.22)
	BCF	0.041 (0.0) [45]	0.110 (0.0) [66]	0.03 (0.01)
DIRECTOR RELATED	GIM	0.356 (0.333) [17]	0.117 (0.0) [24]	0.01 (0.008)
	BCF	0.266 (0.026) [18]	0.179 (0.034) [26]	0.35 (0.33)

shareholder proposals is higher for the “High ATP” portfolio compared to the “Low ATP” portfolio, for both GIM and BCF indices in both panels. Moreover, the difference in both the mean and median is statistically significant. We further test whether this difference in voting behavior is due to support for the proposals related to repeal of anti-takeover provisions only or whether this persists in all proposal categories. We observe

that for all categories of proposals, except for executive compensation issues, the “High ATP” portfolio receives higher percentage support compared to the “Low ATP” portfolio for both the GIM and BCF indices, although not all are statistically significant. This implies that mutual funds side with shareholders more in their voting decisions on most types of proposals in firms with higher anti-takeover provisions compared to firms with low anti-takeover provisions. This suggests that mutual funds undertake a stronger activist role in firms with entrenched management who are less likely to be disciplined by the takeover market. However, for executive compensation issues, the results suggest that for both GIM and BCF indices, the “High ATP” portfolio receives lower support than the “Low ATP” portfolio. This suggests that “management power” plays a role in the voting decision of mutual funds in the context of executive compensation; this requires further investigation in the future.

2.3.2. Empirical Models and Results

In this section, we examine mutual funds’ voting behavior across firms for different shareholder proposals. Since the variation of voting patterns for a particular proposal across funds in a family is not a dominant feature, we analyze voting behavior at the fund family level. We examine whether mutual fund family voting is influenced by the family characteristics, characteristics and performance of the firm, governance structure of the firm, type of proposals, and ownership structure of the firm. Table 2.8 presents the analysis of voting records of shareholder proposals by fund families. The dependent variable is PERCENT SUPPORT BY FAMILY pif , which is the percentage of votes cast in support of shareholder proposal p of firm i by all funds in family f . In Table 2.8, votes cast “for” are considered to be support of shareholder proposals and a vote against management. We run results considering votes cast “for” or “abstain” as support of shareholder proposals; the results (not reported) are qualitatively similar.

Table 2.8: Analysis of Voting Records of Shareholder Proposals by Fund Families

This table presents the analysis of voting records on shareholder proposals by 24 sample fund families. The dependent variable is PERCENT SUPPORT BY FAMILY pif , which is the percentage of votes cast in support of shareholder proposal p of firm i by all funds in family f . Votes cast “for” are considered to be support of shareholder proposals. Descriptions of the variables are provided in the Appendix A. The p-value is in parenthesis. The Statistical significance at the 1, 5, and 10 percent level is indicated by ***, **, and * respectively.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	2.681 (<0.0001)	2.489 (<0.0001)	2.106 (<0.0001)	2.594 (<0.0001)	2.421 (<0.0001)	2.119 (<0.0001)
FAMILY SIZE	-0.139 *** (<0.0001)	-0.139 *** (<0.0001)	-0.117 *** (<0.0001)	-0.133 *** (<0.0001)	-0.139 *** (<0.0001)	-0.117 *** (<0.0001)
BUSINESS TIES FAMILIES	-0.055 * (0.10)	-0.062 * (0.06)	-0.084 *** (0.003)	-0.062 ** (0.05)	-0.073 ** (0.03)	-0.088 *** (0.002)
FIRM SIZE	-0.089 *** (<0.0001)	-0.072 *** (<0.0001)	-0.055 *** (<0.0001)	-0.078 *** (<0.0001)	-0.057 *** (<0.0001)	-0.053 *** (<0.0001)
BOOK TO MKT	-0.148 *** (<0.0001)	-0.120 *** (<0.0001)	-0.129 *** (<0.0001)	-0.164 *** (<0.0001)	-0.134 *** (<0.0001)	-0.135 *** (<0.0001)
HISTORICAL LONG RUN EXCESS RETURN	0.018 *** (0.002)	0.003 (0.64)	0.012 ** (0.03)	0.018 *** (0.001)	0.005 (0.49)	0.013 ** (0.02)
MAJOR STOCK LISTING	0.205 *** (0.001)	0.187 *** (0.01)	0.128 ** (0.04)	0.208 *** (0.001)	0.199 *** (0.008)	0.137 ** (0.03)
GIM	0.019 *** (<0.0001)	0.021 *** (<0.0001)	0.008 *** (0.003)			
BCF				0.039 *** (<0.0001)	0.047 *** (<0.0001)	0.012 ** (0.02)
DUAL CLASS		-0.114 *** (<0.0001)	-0.041 * (0.09)		-0.115 *** (<0.0001)	-0.041 * (0.09)
NUMBER OF PROPOSALS	0.005 *** (0.004)	0.005 *** (0.01)	0.006 *** (0.0003)	0.004 *** (0.005)	0.005 *** (0.003)	0.005 *** (0.0006)
PERCENT SHARE HOLD		-0.446 (0.27)	-0.698 ** (0.04)		-0.393 (0.33)	-0.678 ** (0.04)
INSIDER HOLD		0.003 *** (0.001)	0.002 *** (0.007)		0.002 *** (0.003)	0.002 *** (0.01)
BLOCKHOLDER HOLD		0.002 *** (0.0002)	0.001 (0.11)		0.002 *** (<0.0001)	0.001 * (0.06)
ANTITAKEOVER			0.519 *** (<0.0001)			0.526 *** (<0.0001)
VOTING ISSUES			0.065 * (0.07)			0.070 ** (0.05)
SHAREHOLDER WEALTH AND RIGHTS			0.049 (0.11)			0.057 * (0.06)
EXECUTIVE COMPENSATION			-0.071 ** (0.02)			-0.064 ** (0.04)
DIRECTOR RELATED			0.004 (0.91)			0.013 (0.73)
Family Fixed Effects	YES	YES	YES	YES	YES	YES
R^2	0.12	0.14	0.37	0.12	0.14	0.37
Number of Observations	5814	4395	4395	6133	4392	4392

Table 2.8 reports results of six regression models. In models 1, 2, and 3 we use the Gompers-Ishii-Metrick (GIM) index and in models 4, 5, and 6 we use the Bebchuk-Cohen-Ferrell (BCF) index as a measure of firms' existing anti-takeover provisions. In all models we incorporate family level fixed effects. In models 2 and 5, we introduce firm ownership variables. In models 3 and 6, in addition to ownership variables, we control for types of proposals.

A. Family Characteristics

We investigate whether larger fund families are more supportive of management on shareholder proposals. To test this, we introduce an independent variable, FAMILY SIZE, which is the logarithm of the total net assets of all the funds in the family in the year of the shareholder proposal. In Table 2.8, we observe that FAMILY SIZE has a negative significant effect even after controlling for the types of proposals and ownership data. This implies that larger fund families are more supportive of management on shareholder proposals. We observe the effect of business ties by introducing a dummy variable BUSINESS TIES FAMILIES, which is equal to one if the fund family is among one of the conflicted ones as defined by Davis and Kim (2006).²⁸ The negative and significant coefficient of the indicator variable BUSINESS TIES FAMILIES reconfirms that conflicted fund families tend to be less supportive of shareholder proposals and tend to side with management more often.²⁹

B. Firm Characteristics and Performance

²⁸ Davis and Kim (2006) identify the six most conflicted fund companies in terms of business ties. These are Fidelity, Vanguard, American Funds, Putnam, AIM/Invesco, and T. Rowe Price.

²⁹ The correlation between FAMILY SIZE and the indicator variable BUSINESS TIES FAMILIES is 0.59; thus negative significant coefficient of FAMILY SIZE could be due to bigger fund families having more business ties.

Gordon and Pound (1993) show that the voting outcome of shareholder proposals is influenced by firm characteristics and performance variables. We examine the effect of firm characteristics and performance variables on the voting behavior of mutual fund families. As a firm characteristics variable, we analyze the effect of firm size, book-to-market, and major stock listing on the voting pattern. We observe that FIRM SIZE has a negative significant effect in all six models, suggesting that smaller firms receive higher support on shareholder proposals. As the manager of Olstein Financial Alert said, “We want to focus on small companies, where we can have more influence.”³⁰ We observe that BOOK-TO-MKT has a negative significant effect, suggesting that value stocks receive less support and glamour stocks receive more support on shareholder proposals.

In order to examine the effect of the information environment of firms, we introduce a dummy variable, MAJOR STOCK LISTING, which is equal to one if the firm is listed in one of the major stock exchanges (NYSE, NASDAQ, and AMEX) and zero otherwise. Exchange-listed firms have a more transparent information environment and therefore marginal gain for undertaking a monitoring role in these firms would be higher. We observe that the effect of MAJOR STOCK LISTING is positive and significant, suggesting that listed firms are more likely to receive higher support on shareholder proposals.

Karpoff, Maletesta, & Walkling (1996) argue that poorly performing firms attract shareholder proposals more. Smith (1996) reports that activist pension funds CalPERS consider poor performers as targets. We test whether mutual funds provide higher support for shareholder proposals in poorly performing firms in order to discipline management. As a measure of past performance of the firm we introduce HISTORICAL LONG RUN EXCESS RETURN, which is the buy-and-hold abnormal return of the firm over five years prior to and ending three months prior to the proposal meeting date. The results in Table 2.8 show that HISTORICAL LONG RUN EXCESS RETURN has a positive

³⁰ *The New York Times*, January 15, 2006.

significant effect, implying that the higher the past long-run performance of the firm, the higher the support for shareholder proposals by mutual funds. This result contradicts the argument presented by Gordon and Pound (1993) that shareholder proposals would gain higher support when the firms' performance has been worse, which raises a question about management competence. It is not clear why mutual funds provide higher support for shareholder proposals in better performing firms, but do not have an oversight in poorly performing ones.³¹ We explain this phenomenon by providing two arguments. Firms with good performance have higher visibility and a superior informational environment as a result of more coverage. This would lead to a low cost of monitoring, since information gathering would be less costly, thereby causing higher support for shareholder proposals of these firms. Another explanation could be the higher valuation consequence resulting from monitoring. Mutual funds follow good performing firms more closely and are more eager to improve the performance of these firms through better governance provisions, as these firms are likely to have a higher impact in their overall portfolio valuation. However, we are unable to state what actually contributes to such voting behavior.

C. Governance Structure of the Firm.

In order to investigate the effect of governance structure of the firm on voting behavior, we introduce the GIM (Gompers, Ishii, and Metrick (2003)) and BCF (Bebchuk, Cohen, and Ferrell (2004)) indices, which measure the existing anti-takeover provisions of firms.³² In Table 2.8, the GIM index is used in models 1, 2, and 3, and the BCF index is used in models 4, 5, and 6. We also include DUAL CLASS, a dummy variable that takes the value one if the firm has dual-class shares and zero otherwise. In a recent paper, Gompers, Ishii, and Metrick (2005) refer to dual-class stock as the “most

³¹ Only in executive compensation related proposals, we find that mutual funds vote against management in poorly performing firms Results described in section 3.2(F).

³² We explain the indices in more detail in section 4.1(B)

extreme example of anti-takeover protection.” The authors state that dual-class stock is much more powerful as an anti-takeover measure than other types of protections such as poison pills, staggered boards, or golden parachutes. The study shows that insiders in an average dual-class firm have approximately 60 percent of the voting rights and 40 percent of the cash flow rights. We examine whether the presence of dual-class shares influences funds voting behavior. We also introduce the NUMBER OF PROPOSALS, which is the number of shareholder proposals received in a firm, as an indirect measure of governance provision of the firm.³³ A higher number of shareholder proposals in a firm is likely to represent shareholders’ discontentment with the overall governance structure of the firm and their view regarding the improvement potential in the firms’ governance provisions.

We observe that in Table 2.8, both the GIM and BCF indices have a positive significant effect on percentage support in all models. Our results therefore imply that firms with a higher number of anti-takeover provisions (ATP) are likely to receive higher support for shareholder proposals. This suggests that mutual fund families engage in monitoring by supporting shareholder-sponsored proposals in firms that have a higher resistance for market for corporate control. Masulis, Wang, and Xie (2006) state that the conflict of interest between managers and shareholders is more severe at firms with higher ATPs. They argue that managers in firms with higher ATPs are more likely to engage in acquisitions for empire building, as they are less likely to be disciplined by the market for corporate control. We argue that by supporting shareholder proposals more for higher ATP firms, mutual fund families engage in disciplining managers of the firms with a weaker external monitoring mechanism in place and where shareholder-manager conflict of interest is likely to be higher.

The DUAL-CLASS variable has a negative and significant effect, suggesting that mutual funds side with management in firms with dual-class shares. The negative effect

³³ Gordon and Pound (1993) use number of shareholder proposals as a proxy for governance structure of firm.

of the indicator variable DUAL CLASS can be explained by the notion that mutual funds realize that their support for shareholder proposals in dual-class firms would not likely change the final outcome, due to higher probability of receiving management support because of a higher presence of insiders' voting rights, and therefore they take a passive role in these firms. This is along the same line of argument presented in Stulz (1988), where the author argues that higher voting rights of insiders decrease the probability of a hostile takeover attempt, as it reduces the probability of success. A similar argument is also presented in Mikkelson and Partch (1989).

The effect of NUMBER OF PROPOSALS in all models in Table 2.8 is positive and significant. This indicates that mutual funds engage in an active monitoring role by supporting shareholder proposals in firms with higher market dissatisfaction and higher possibilities of improving governance structure.

D. Ownership Structure of Fund Family

The literature suggests that because of the free-rider problem, only investors with a large stake in the firm have incentives to undertake monitoring activities since their gain from monitoring is likely to surpass the associated monitoring cost.³⁴ Davis and Kim (2006) examine whether mutual funds undertake a costly monitoring role in firms in which their holdings are over-weighted relative to a market portfolio. By investigating each individual fund's voting, they find that the fund-voting decision is independent of its portfolio weight. We analyze the effect of ownership structure in the fund family level since the fund-voting guidelines are established at the fund family level. We examine whether mutual fund families engage in monitoring when they have a higher ownership stake in the firm. To investigate the effect of ownership concentration we introduce the variable PERCENT SHARE HOLD, which is the percent of outstanding shares held by the fund family in the quarter of the proposal. The regression results in Table 2.8 show

³⁴ Shleifer and Vishny (1986), Grossman and Hart (1980), Huddart (1993) and Gillan and Starks (2000),

that PERCENT SHARE HOLD has a negative significant effect after controlling for the different types of proposals. This suggests that higher ownership concentration would lead to higher support toward management by a fund family.³⁵ This could be due to the causality problem that mutual funds are likely to have larger stakes in firms where they are more supportive of management policies. A *Wall Street Journal* article in September 22, 2006, report that “fund companies argue that it shouldn’t come as a surprise that they back management. If they didn’t like a company’s direction, they wouldn’t have bought, or they would sell.”

E. Other Ownership Structure

We include INSIDER HOLD, which is the percent of outstanding stock beneficially owned by managers and/or directors in the previous quarter of the proposal. In Table 2.8, INSIDER HOLD has a positive and significant effect even after controlling for type of proposals. This implies that the higher the ownership concentration by managers and/or directors, the higher the percentage support by mutual funds for shareholder proposals. This emphasizes the notion that mutual funds undertake active monitoring role in firms with higher management ownership concentration. This is along the same line of the argument as the management entrenchment hypothesis and supports that firms with higher management ownership concentration require more monitoring rules in place, as managers in these firms are likely to pursue empire building rather than maximizing shareholders’ wealth.³⁶

³⁵ The evidence of the relation between institutional holdings and outcome on shareholder proposals is mixed. Gordon and Pound (1993) and Gillan and Starks (2000) suggest higher institutional holdings lead to higher positive outcome of shareholder proposals. Romano (2001) finds no significant relationship between institutional investors’ holdings and shareholder proposals support. Amzaleg, Ben-Zion, and Rosenfeld (2005) find negative significant correlation between fund ownership concentration and votes cast to support shareholders by mutual funds in Israel

³⁶ Demsetz (1983), Fama & Jensen (1983), Morck, Shleifer, & Vishny (1988), McConnell & Servaes (1990)

We introduce BLOCKHOLDER HOLD, which is the percentage of outstanding stock owned in the previous quarter of the proposal by 5-percent blockholders with no obvious management affiliation. Blockholder ownership is considered to be a part of the internal monitoring mechanism. Shleifer and Vishny (1986) show that the presence of large outside blockholders increases the likelihood of a firm being targeted for activism. Shivdasani (1993) finds a positive relation between ownership by unaffiliated blockholders and the likelihood of a hostile takeover attempt. Hartzell and Starks (2003) find a positive relation between the five largest institutional concentrations and the pay-for-performance sensitivity of managerial compensation. They also show that the top five institutional investor concentrations have a negative relation to the level of executive compensation. Moreover, often times, activist shareholders undertake a high ownership stake before launching a proxy fight or becoming involved in shareholder activism. These activists carry out a wide range of campaign to obtain more support, which might lead mutual funds to take part in a similar role. Our results on BLOCKHOLDER HOLD show a positive and significant effect on percentage of support. This suggests that higher blockholder ownership concentration would lead to higher support for shareholder proposals by mutual funds. This implies that the presence of a higher internal governance mechanism through unaffiliated blockholder ownership influences funds to vote against management.

F. Types of Proposals

According to Gordon and Pound (1993), proposals that suggest clear restoration of shareholder power may receive more support than proposals that are more qualitative and difficult to assess.³⁷ We investigate whether the voting pattern of mutual fund families varies with types of proposals. In Table 2.8, we observe the effects of proposal types in models 3 and 6. We observe that mutual fund families provide significant

³⁷ Gillan and Starks (2000) and Romano (2001) also investigate effect of types of proposals.

support for anti-takeover and voting- related proposals. Mutual fund families' support for these proposals highlights the fact that they undertake a monitoring role when shareholder proposals involve governance provisions that increase shareholder wealth and rights.³⁸ The results also suggest that mutual fund families take management's side on executive compensation issues. With recent scandals and debates over executive compensation issues, these proposals should be under greater scrutiny. The AFL-CIO web site describes CEO pay as follows: "Every year, shareholders and America's workers learn of new jaw-dropping executive compensation packages that seem to defy rational explanation. Too often, the CEO pay system enriches executives without regard to their individual performance or realistic contribution to their company." The web site also promotes that proxy voting is the most direct means for shareholders to exercise oversight of the companies they own. Union-sponsored funds submitted 43 percent of corporate governance proposals in 2004. Many of these proposals were regarding executive compensation, which accounted for more than 40 percent of all governance proposals. Murphy (1999) provides a detailed study of executive compensation. The author reports that the average S&P 500 CEO received 90 times more in cash compensation than the average earnings of a factory worker in 1996. The total realized compensation of CEOs is 210 times more than the earnings of production workers. This is up from 30 times more in 1970. Almazan, Hartzell, and Starks (2005) show that institutional ownership concentration is negatively related to the level of executive compensation, suggesting that institutions undertake monitoring role in reducing the conflicts of interest between shareholders and managers. Their results also suggest that institutions prefer firms with higher pay-for-performance sensitivity. Using the voting mechanism, mutual funds could undertake a more direct monitoring role in the governance mechanism that is concerned with executive compensation. The question

³⁸ Our proposals related to repeal of anti-takeover provisions are among the six anti-takeover provisions identified by Bebchuk, Cohen, and Ferrell (2004) which have negative valuation consequences.

then remains whether mutual funds vote on executive compensation proposals considering past performance of firms. We perform regression analysis similar to Table 2.8 (model 2) only on executive compensation proposals (results not shown in table). The results indicate that HISTORICAL LONG RUN EXCESS RETURN, which is the buy-and-hold abnormal return of the firm over five years prior to and ending three months prior to the proposal meeting date, has a negative significant effect with coefficient (-0.02) and p-value 0.02. This implies that mutual funds vote against management and support shareholder proposals on executive compensation issues in poorly performing firms. Hence, this indicates that mutual funds take into consideration the past performance of firms with regard to their voting decision on executive compensation issues. Analyzing mutual funds voting behavior on executive compensation issues in much more detail considering pay-for-performance is left for future research.

2.4. Effect of Mutual Funds' Voting Records of Shareholder Proposals on Fund Reputation

In this section, we investigate the incentive structure of mutual funds for exercising their voting power to guard shareholders' interests. Davis and Kim (2006) argue that if fund management's activism increases portfolio value through better governance provisions, this will eventually lead to a better reputation and higher revenues. One intriguing research question is, would mutual funds experience a direct reputational effect for supporting shareholder proposals, which is not through the valuation consequences as a result of the implementation of better governance provisions? In particular, we investigate whether mutual funds' release of the voting records on shareholder proposals effect the funds' future asset flow. If mutual fund activism improves the funds' reputation, then higher support for shareholder proposals by the funds would likely to increase the funds' asset flow after the release of voting records. This direct affect would act as a stronger incentive for funds to actively engage in

shareholder activism and support shareholder proposals. The dependent variable in our analysis is FUND FLOW_{*j*}, which is the objective adjusted net asset flow of mutual fund *j* over the following year of the mutual fund voting record release date.³⁹ The independent variable MEDIAN PERCENT SUPPORT BY FUND_{*j*} is the median percentage support fund *j* provides over all shareholder proposals. This is obtained by first computing the percentage of support by a fund over all proposals for a particular stock, and then taking the median of this percentage over all stocks by the fund.

We first examine the average FUND FLOW in portfolio of funds based on percentage support on shareholder proposals (results not reported in table). Votes cast “for” are considered to be support of shareholder proposals. We construct 10 fund deciles based on MEDIAN PERCENT SUPPORT BY FUND, where decile 1 corresponds to funds with lowest median percentage support and decile 10 corresponds to funds with highest median percentage support. We compute the average fund flow of the ten fund deciles on the following year after the release of voting records. The average fund flow on decile 1 funds is -0.01 and for decile 10 funds is 0.002 and the difference in mean is statistically significant (p-value 0.04). This implies that mutual funds that belong to lowest percentage support decile experience a negative net asset flow and funds that belong to highest percentage support decile 10 experience a positive net asset flow and the difference is significant. The regression analysis in Table 2.9 analyzes whether mutual funds that provide higher percentage support on shareholder proposals experience a positive net asset flow after controlling for other factors that influence funds’ asset flow. In Table 2.9, models 1 and 3 consider votes cast “for” as support of shareholder

³⁹ Following Sirri & Tufano (1998) we measure the flow of assets of fund *j* as follows:

$$Flow_{jt} = (TNA_{jt} - TNA_{jt-1}(1 + R_{jt})) / TNA_{jt-1}$$

where, TNA_{jt} is the total net asset in fund *j* at the end of year *t* and R_{jt} is the return of fund *j* in year *t*.

$Flow_{jt}$ reflects the growth of the funds that is not due to the rate of return earned on the assets under management, but due to new external money. We compute the objective adjusted net asset flow by subtracting from $Flow_{jt}$ the median asset flow of all funds within the same objective

proposals and models 2 and 4 consider votes cast “for” or “abstain” as support of shareholder proposals.

Table 2.9: Effect of Mutual Funds’ Voting Records on Fund Flow

This table presents the effect of mutual funds’ voting records of shareholder proposals on fund flow. The dependent variable FUND FLOW_{*j*} is the objective adjusted net asset flow of mutual fund *j* over the following year of the mutual fund voting record release date. The independent variable MEDIAN PERCENT SUPPORT BY FUND_{*j*} is the median percentage support fund *j* provides over all shareholder proposals. This is obtained by first computing the percentage of support by a fund over all proposals for a particular stock, then taking the median of this percentage over all stocks by the fund. In model 1 and 3 votes cast “for” are considered to be support of shareholder proposal. In model 2 and 4 votes cast “for” or “abstain” are considered to be support of shareholder proposal. Descriptions of all other control variables are provided in the Appendix A. The p-value is in parenthesis. Statistical significance at the 1, 5, and 10 percent level is indicated by ***, **, and * respectively.

	Model 1 Support Shareholder: “for”	Model 2 Support Shareholder: “for” or “abstain”	Model 3: Support Shareholder: “for”	Model 4 Support Shareholder: “for” or “abstain”
Intercept	-0.056 (0.02)	-0.051 (0.03)	-0.026 (0.32)	-0.018 (0.48)
MEDIAN PERCENT SUPPORT BY FUND	0.024 ** (0.04)	0.011 * (0.09)	0.024 ** (0.05)	0.014 ** (0.03)
FUND SIZE	0.002 (0.31)	0.001 (0.57)	0.0008 (0.69)	-0.003 (0.87)
FAMILY SIZE	0.00001 (0.32)	0.00001 (0.33)	0.00001 (0.18)	0.00001 (0.16)
FUND AGE	0.003 (0.21)	0.003 (0.15)	0.004 (0.12)	0.004 * (0.06)
FEE	0.020 (0.37)	0.022 (0.32)	0.006 (0.81)	0.006 (0.81)
S&P STAR	0.003 (0.16)	0.003 (0.15)	0.002 (0.31)	0.002 (0.33)
OAR	0.117 ** (0.05)	0.113 * (0.06)		
FOUR-FACTOR ALPHA			0.196 ** (0.03)	0.227 *** (0.01)
PREV YEAR AVG NAF	0.285 *** (0.003)	0.293 *** (0.002)	0.294 *** (0.002)	0.294 *** (0.002)
Style Fixed Effects	YES	YES	YES	YES
R^2	0.47	0.46	0.47	0.47
Number of Observations	210	210	205	205

The literature suggests that fund asset flows depend on the fund's performance.⁴⁰ In models 1 and 2 we use objective adjusted return (OAR) to control for fund performance.⁴¹ Objective adjusted return of fund is measured over the previous year of the filing date of the voting records. We observe that OAR is positive and significant, as expected. In models 3 and 4 we use four-factor alpha to control for fund performance.⁴² FOUR-FACTOR ALPHA is also positive and significant. To control for the fund's previous asset flow, we introduce the variable PREV YEAR AVG NAF, which is the fund's objective adjusted net asset flows over the previous 12 months of the filing date of the voting records.⁴³ We also observe that PREV YEAR AVG NAF has a positive and significant effect. We introduce FUND AGE, which is the log of the age of a fund, and observe that it has an insignificant effect on the fund's asset flow.⁴⁴ To control for the influence of fees we assume an average of a seven-year holding period for fund investors. Hence, we construct the control variable FEES as the sum of the expense ratio and one-seventh of all load charged by the fund.⁴⁵ We also observe that FEE has an insignificant effect. After controlling for fund size, age, fee, performance, and previous asset flow, our results show that MEDIAN PERCENT SUPPORT BY FUND has a positive significant effect on dependent variable FUND FLOW. This implies that higher median percentage support for shareholder proposals by mutual funds would increase the fund's future asset

⁴⁰ Sirri & Tufano (1998), Ippolito (1992).

⁴¹ Following Khorana, Tufano & Wedge (2006) we measure OAR as follows: OAR is defined as the annual return of the fund minus the median return of the funds within the same objective and computed as follows:

$$OAR_j = \left[\prod_{t=-1}^{-12} (1 + R_{jt}) - 1 \right] - \left[\prod_{t=-1}^{-12} (1 + \bar{R}_{ot}) - 1 \right]$$

where R_{jt} is the return of fund j in month t and \bar{R}_{ot} is the median return of all funds within the same objective in month t , and $t=0$ is the month of voting record release.

⁴² Ippolito (1992), Harless & Peterson (1998), Gruber (1996), Jain & Wu (2000) and Lynch & Musto (2003): use Jensen's alpha or multi-factor alpha

⁴³ Zeckhauser, Patel and Hendricks (1991)

⁴⁴ Bergstresset & Poterba (2002) and DelGuercio & Tkac (2002)

⁴⁵ Khorana & Servaes (2004)

flow significantly. The implication is very significant, as this suggests that mutual funds could experience a direct benefit in their future business potential by engaging in shareholder activism through the voting mechanism. This positive impact on the mutual funds' reputation would give them more incentive to monitor and could outweigh the cost of alienating the clients in the portfolio firms. We realize that the increased value of the fund flow could be due to better reputation of the portfolio firms as a result of the higher governance measures implemented by the voting mechanism and might not be a direct effect of the mutual fund voting record release. However, the higher reputation due to better governance through shareholder proposals would only be achieved if the outcome of the proposals were a success. There could be many instances where mutual funds vote "yes" for a shareholder proposal and the final outcome is a rejection, or vice versa. We argue that whether or not the fund's reputation is directly influenced by the fund's voting or indirectly through the implementation of better governance, our results imply that the mutual funds have higher incentives for actively engaging in shareholder activism.

Similar to model 1 of Table 2.9, we perform separate regressions for the seven categories of proposals in our data. The results indicate that for repeal of anti-takeover proposals, higher percentage support on shareholder proposals lead to significant increase in fund asset flow, with coefficient 0.012 and p-value 0.01 (results not reported in table). For other categories of proposals, fund asset flow is not significantly affected by higher percentage support on shareholder proposals. Hence, the results suggest that funds experience increased asset flow more when they favor repeal of anti-takeover related shareholder proposals which have more definite positive shareholder wealth implications. Moreover, as the wealth implications of other categories of proposals are not well established, there seem to have no significant positive reputational effect for voting against management for these proposals.

2.5. Analysis of Mutual Fund Trading Behavior Surrounding Shareholder Meeting and Voting Record Release

In this section, we investigate the trading behavior of mutual funds surrounding the shareholder proposal meeting date and voting record release date.⁴⁶ The existing notion is that institutional investors sell their shares when dissatisfied with management, which is called “Wall Street Walk” or “Vote with Their Feet.” Mutual funds are often criticized for their passive role in the governance mechanism of firms and for following the “Wall Street Rule” with respect to their voting process. Analyzing the trading behavior of mutual funds surrounding the proposal meeting date and voting record release date allows us to investigate whether mutual funds display such behavior. We gauge mutual funds’ aversion toward management policy by the votes cast against management and hence by support for shareholder proposals. Our analysis would not capture the trading behavior of funds that totally liquidate their holdings prior to the meeting date if there are any such funds. We investigate trading behavior of mutual funds for the following quarters: one quarter prior to proposal meeting, shareholder proposal meeting quarter, voting records filing quarter, one quarter after voting records filing. In our sample, 99.98 percent of the data are associated with quarter of filing right after the shareholder meeting quarter. Therefore the results obtained in quarter of filing correspond to one quarter after the meeting quarter.

First we report mean and median changes in percentage holdings of outstanding stock by mutual funds in portfolios based on percentage support for shareholder proposals; these results are shown in Table 2.10. Votes cast “for” are considered to be support of shareholder proposals. For each fund two portfolios are formed based on mean percentage support for shareholder proposals. P1 represents portfolios of stocks with percentage support for shareholder proposals above the mean of support over all funds.

⁴⁶ Trading behavior of mutual funds and institutions are studied by Grinblatt, Titman, and Wermers (1995), Wermers (1999), Wermers (2000), Nofsinger and Sias (1999), Sias and Starks (1997), Lakonishok, Shleifer and Vishny (1992), and Hartzell and Starks (2003) among others.

P2 represents the portfolio of stocks with percentage support for shareholder proposals below the mean of support over all funds. For each portfolio P1 and P2, the table reports the mean and median changes in percentage holdings of outstanding stock over all sample mutual funds for different quarters surrounding shareholder meeting and voting record release dates. The mean and median changes of holdings are reported for the following quarters: one quarter prior to proposal meeting, shareholder proposal meeting quarter, voting record filing quarter (which corresponds to one quarter after meeting), and one quarter after voting record filing.

Table 2.10: Changes in Percentage Holdings by Mutual Funds in Portfolios Based on Percentage Support for Shareholder Proposals

The table presents mean and median changes in percentage holdings of outstanding stock in portfolios based on percentage support for shareholder proposals. The number of observations is presented in the bracket. Votes cast “for” are considered to be support of shareholder proposals. For each fund two portfolios are formed based on mean percentage support for shareholder proposals. P1 represents portfolio of stocks with percentage support for shareholder proposals above the mean support over all funds. P2 represents portfolio of stocks with percentage support for shareholder proposals below the mean support over all funds. For each portfolio P1 and P2 the table reports the mean and median changes in percentage holdings of outstanding stock by mutual funds for different quarters surrounding shareholder meeting and voting record release. The mean and median changes of holdings are reported for the following quarters: one quarter prior to proposal meeting, shareholder proposal meeting quarter, voting record filing quarter (which is one quarter after meeting), and one quarter after voting record filing.

Quarter	P1 Mean (Median) [N]	P2 Mean (Median) [N]	p-value for difference (Wilcoxon-test for difference)
1 Quarter Prior to Meeting	-0.301 (-0.0003) [813]	-0.309 (-0.001) [3103]	0.99 (0.08)
Meeting Quarter	-0.003 (0.001) [730]	0.715 (0.035) [4002]	0.13 (<0.0001)
Voting Record Filing Quarter	-0.789 (0.0003) [1000]	-0.073 (0.036) [4715]	0.08 (<0.0001)
1 Quarter After Filing	0.553 (0.005) [910]	-0.187 (0.0003) [4037]	0.07 (0.34)

We observe that the difference in the mean of changes in the holdings of mutual funds between portfolios P1 and P2 in meeting quarter and one quarter prior to meeting

are not statistically significant. The results for the voting records filing quarter show that mutual funds engage in reducing holdings significantly more for P1 portfolio of stocks, in which they provide higher than average percentage support, as compared to P2 portfolio of stocks, in which they provide lower than average percentage support for shareholder proposals. This implies that mutual funds engage in reducing their portfolio holdings more after voting against management. In the quarter after voting records filing, mutual funds seem to increase holdings for P1 portfolio of stocks and reduce holdings in P2 portfolio of stocks, and the difference in mean is statistically significant. The regression analysis in Table 2.11 examines whether voting against management lead to mutual funds' decrease or increase of their portfolio holdings after controlling for other factors that affect mutual funds' trading.

Table 2.11 reports the changes of holdings of mutual funds for the following quarters: one quarter prior to proposal meeting, shareholder proposal meeting quarter, voting records filing quarter (same as one quarter after meeting), one quarter after voting records filing. The dependent variable $FUND\ PERCENT\ HOLD\ CHANGE_{ijt}$ is the change in percentage holdings of outstanding stock of firm i by the fund j in the quarter t compared to the previous quarter ($t-1$). The independent variable $PERCENTGAE\ SUPPORT\ TO\ SHRHL D_{ji}$ is the percentage of votes cast in support of shareholders by a fund j over all shareholder proposals for a stock i . Votes cast “for” are considered to be in support of shareholders and voting against management. As control variables, we include firm characteristics and performance variables, fund and all other institutions' ownership variables, and firm governance variables. Firm-specific information is obtained in the previous quarter of the quarter being analyzed. Descriptions of all other control variables are provided in Appendix A. After controlling for firm characteristics, performance, governance, and ownership variables, we observe that the effect of $PERCENTGAE\ SUPPORT\ TO\ SHRHL D_{ji}$ is negative in one quarter prior to meeting, in meeting

quarter, and in voting record release quarter. However, the effect of PERCENTAGE SUPPORT TO SHRHLD_{ji} is only significant in the filing quarter, which is also the quarter after meeting. This implies that the funds that support shareholder proposals decrease holdings significantly after they vote on their shares.

The question is: Why do the funds that support shareholder proposals reduce holdings of the firm in their portfolio? Is it due to the hostility that is created between funds and firm management because of the activist role by mutual funds? If mutual funds intend to benefit from the higher governance provisions through the voting mechanism, then one would expect them to maintain or increase their holdings after they provide support for shareholder proposals. We explain the results by arguing that when mutual funds do not approve of the management style and dislike the governance structure of the firm, they sell their shares and move on. Nevertheless, they undertake an activist role before selling their shares in order to promote shareholders' rights in these firms. The question that then arises is: Why do they engage in this costly monitoring if they do not intend to benefit from it? One explanation could be that these mutual funds that provide support for shareholder proposals are not very optimistic about the final outcome of the proposals and therefore reduce their holdings. Shareholder proposals are not binding and they are more advisory in nature. Management is not obligated to implement the proposals even if the proposals receive majority approval. Karpoff, Malatesta, and Walkling (1996) show that the rate of implementation of shareholder proposals for the period 1986-1990 was only 2.5 percent. However, in recent years shareholder activism has been getting more attention and the success rate of proposals has increased also. In a recent study, Ertimur, Ferri, and Stubben (2005) find that the frequency of implementing shareholder proposals more than doubled from 16 percent in 1997 to over 40 percent in 2003-2004 and the likelihood of implementation increases with better governance structure of firm. Therefore, it is possible that mutual funds that provide higher percentage support for shareholder proposals and vote against management assess the

Table 2.11: Mutual Fund Trading Behavior Surrounding Shareholder Meeting and Voting Record Release

This table presents the mutual fund trading behavior at different quarters surrounding shareholder meeting and voting record release. The table reports the changes of holdings of mutual funds for the following quarters: one quarter prior to proposal meeting, shareholder proposal meeting quarter, voting record filing quarter (which is one quarter after meeting), and one quarter after voting record filing. The dependent variable FUND PERCENT HOLD CHANGE_{ijt} is the change in percentage holdings of outstanding stock of firm *i* by the fund *j* in the quarter *t* compared to the previous quarter (*t-1*). The independent variable PERCENTGAE SUPPORT TO SHRHL D_{ji} is the percentage of votes cast in support of shareholder proposals by a fund *j* over all shareholder proposals for a stock *i*. Votes cast “for” are considered to be in support of shareholders. Firm-specific variables are obtained in the previous quarter (*t-1*). Descriptions of all other control variables are provided in the Appendix A. The p-value is in parenthesis. Statistical significance at the 1, 5, and 10 percent level is indicated by ***, **, and * respectively.

	1 Quarter Prior to Meeting	Shareholder Proposal Meeting Quarter	Voting Record Filing Quarter	1 Quarter After Filing
Intercept	0.169 (0.04)	-0.031 (0.58)	0.028 (0.53)	0.038 (0.53)
PERCENTGAE SUPPORT TO SHRHL D	-0.013 (0.11)	-0.003 (0.73)	-0.016 *** (0.005)	0.004 (0.47)
FIRM SIZE	0.001 (0.77)	-0.006 ** (0.03)	-0.004 ** (0.04)	-0.002 (0.46)
BOOK TO MKT	0.013 (0.29)	-0.007 (0.51)	-0.02 *** (0.009)	-0.001 (0.91)
RETURN ON ASSETS	-0.167 (0.17)	-0.019 (0.86)	-0.10 (0.19)	0.228 *** (0.007)
EARNING-PRICE-RATIO	-0.044 (0.61)	-0.034 (0.66)	0.036 (0.15)	0.015 (0.60)
HISTORICAL ONE YEAR ABNORMAL RETURN	0.027 *** (<0.0001)	0.004 (0.43)	0.004 (0.38)	0.006 (0.24)
MAJOR STOCK LISTING	0.016 (0.63)	0.055 ** (0.02)	0.08 *** (<0.0001)	-0.023 (0.37)
ALL INST HOLD	-0.015 (0.53)	-0.011 (0.62)	-0.005 (0.76)	0.024 (0.17)
PREV QTR PERC HOLD BY FUND	-5.622 *** (<0.0001)	-5.46 *** (<0.0001)	-4.367 *** (<0.0001)	-0.464 (0.16)
BLOCKHOLDER HOLD	0.0002 (0.28)	0.0001 (0.29)	0.0001 (0.51)	-0.0003 ** (0.03)
INSIDER HOLD	0.0001 (0.62)	-0.0001 (0.58)	-0.0002 * (0.10)	0.0001 (0.61)
GIM	0.004 *** (0.001)	0.001 (0.57)	-0.0002 (0.81)	0.001 (0.25)
NUMBER OF PROPOSALS	0.001 * (0.10)	0.001 (0.18)	-0.0002 (0.69)	0.001 (0.13)
Family Fixed Effects	YES	YES	YES	YES
Fund Style Fixed Effects	YES	YES	YES	YES
R^2	0.06	0.05	0.07	0.02
Number of Observations	3619	4385	4864	4235

likelihood of the implementation of the proposals after voting and, realizing the lower possibility of success, they reduce their holdings. We further test whether mutual funds' trading following proxy voting is significantly different in firms with varying managerial power. We proxy managerial power by GIM index and identify high managerial power (dictator firms) firms with GIM index greater or equal 14 and low managerial power firms (democratic firms) with GIM index equal or smaller than 5. The interaction variable with democratic firm and percentage support on shareholder proposal provide a positive significant effect (coefficient 0.066 and p-value 0.01) on mutual funds changes of holdings at the voting record filing quarter, maintaining the negative significant effect of the independent variable PERCENTAGE SUPPORT TO SHRHLTD (coefficient -0.016 and p-value 0.004). This implies that mutual funds increase holdings significantly after providing support on shareholder proposals in firms high in shareholder rights and low in managerial power. Hence the results indicate that the "Wall Street Walk" by mutual funds is mainly dominant in firms with high in managerial power, which are less likely to implement the shareholder proposals. Relating mutual funds voting and trading behavior to the proposal outcome is left for future research.

2.6. Conclusion

We investigate the proxy voting behavior of shareholder proposals by 433 mutual funds from 24 fund families on 528 firms. We investigate three main questions. What are the factors that influence mutual funds' voting behavior? What is the incentive structure of mutual funds for undertaking an activist role in voting for shareholder proposals? Finally, how do the funds trade surrounding proposal meeting date and voting record release date?

Our results suggest that bigger fund families are more supportive of management. We find that firms with higher visibility receive more support from mutual funds for shareholder proposals. The effects of ownership on voting decisions indicate that mutual

funds do not undertake a monitoring role when they have a large ownership stake in a firm. However, we observe that mutual funds seem to have superior oversight when they have a longer investment horizon. This suggests that their motivation to take on an activist role does not come from the ownership structure, but rather from their long-term investment goal.

We also find that the existing governance structure of the firm influences the funds' voting policies. Mutual funds undertake a monitoring role through their voting behavior in firms that are less likely to be disciplined by the market for corporate control. This suggests that in the absence of an external governance mechanism, an internal governance mechanism operating through voting provisions provides a substitute monitoring role in disciplining managers. The presence of a higher internal governance mechanism through outside blockholder ownership influences funds to vote against management. In addition, the possibility of management entrenchment through a higher level of managerial ownership leads to superior monitoring by mutual funds. However, the presence of higher voting rights of insiders in dual-class shares discourages mutual funds to vote against management, as their voting is unlikely to change the outcome of the proposal. The results further indicate that mutual funds engage in an active monitoring role by supporting shareholder proposals in firms with higher market dissatisfaction and higher possibilities of improving governance structure.

Mutual funds' voting behavior is also influenced by the types of proposals. The proposals related to anti-takeover provisions, which have a direct positive effect on shareholders' wealth and rights, receive higher support. Mutual funds predominantly seem to side with management on issues related to executive compensation. However, for poorly performing firms they penalize management by supporting shareholder sponsored executive compensation related proposals.

We study the incentive structure of mutual funds that could act as a motivational force for them to undertake an activist role in their proxy voting behavior. We examine

whether the future business potential of mutual funds is likely to be influenced if mutual funds engage in guarding shareholders' interests in shareholder proposals. Our results suggest that higher support for shareholder proposals by mutual funds has a positive effect on the funds' future asset flow. Moreover, the effect is mostly driven by the repeal of anti-takeover related proposals, which have direct positive shareholder wealth implications. This supports the notion that there is a positive reputational effect for mutual funds for undertaking a monitoring role in their proxy voting behavior.

Finally, we observe the trading behavior of mutual funds surrounding proposal meeting date and voting record release date. The results indicate that mutual funds engage in selling their portfolio shares when they provide higher support for shareholder proposals. One explanation could be that mutual funds that provide support to non-binding shareholder proposals are not very optimistic about the final outcome of the proposals and therefore reduce their holdings. This supports the notion that mutual funds engage in "Wall Street Walk" when they dislike managements' policy. Nevertheless, they undertake an activist role before selling their shares in order to promote shareholders' rights in these firms.

Overall, our study provides a framework for understanding mutual funds' voting patterns across firms. The results indicate that there is intricacy involved in these voting decisions. However, the results do not necessarily indicate that the mutual fund industry was engaged in a similar voting pattern before the release of the proxy voting records. The results only highlight the pattern of mutual funds' voting when the funds are aware that these proxy voting records would undergo close scrutiny.

CHAPTER 3

INSTITUTIONAL INVESTORS' TRADING BEHAVIOR IN MERGERS AND ACQUISITIONS

3.1. Introduction

Institutional investors are one of the major investor groups in the U.S. A recent study shows that they own more than half of all U.S. publicly traded equity.⁴⁷ Consequently, the way in which these institutional investors affect and respond to investment and financial policies of corporations has been receiving increasing attention among academicians and regulators.⁴⁸

Surprisingly, the role played by institutional investors surrounding acquisition decisions by corporations has received limited attention.⁴⁹ In a recent paper, Moeller, Schlingemann, and Stulz (2005) document that mergers and acquisitions in the late 1990s have had a large negative impact on acquiring firm shareholders' wealth. They show that merger announcements during the period 1998 to 2001 resulted in an aggregate wealth loss of \$240 billion for acquiring firm shareholders.⁵⁰ Motivated by such significant shareholders' wealth implications, in this paper we document institutional investors' holding and trading behavior of acquiring firm stocks in response to merger announcements for the period 1992 to 2001. We investigate how institutions process

⁴⁷ Institutional Investment Report, The Conference Board, Volume 5, March 2003.

⁴⁸ See for example Burch and Swaminathan (2002), Gibson, Safieddene, and Sonti (2004), Grinstein and Michaely (2005).

⁴⁹ Notable exceptions include recent papers by Chen, Harford, and Li (2006) and Qiu (2006), Gopalan (2005).

⁵⁰ Extensive literature exists on return patterns of acquirer and target firms in M&A activities. For short horizon analysis average abnormal stock market reaction at merger announcement is used as a gauge for value creation or destruction. Andrade, Mitchell and Stafford (2001) report that the abnormal return for the three day window surrounding the announcement is 1.8% on average for the combined firm, 16% for the target firm and -0.7% for the bidder firm. The bidder firm return varies with the method of payment. Acquirer shareholders earn little or no abnormal return from cash payment mergers and negative abnormal return (-2% to -3%) for stock payment mergers. Bruner (2002) presents a survey on the findings of 130 studies conducted from 1971-2001.

information released upon announcement of a merger and how they incorporate this new available information into their trading strategies. Furthermore, we examine whether they update their information set as more information arrives in the market and how they adjust their trading strategies. The paper also sheds light on whether there is heterogeneity among institutional investors with regard to skill and informational advantage surrounding merger activities.

Literature on institutional voting and trading behavior categorizes institutions into two main groups. Brickley, Lease, Smith (1988) examine voting behavior of institutional investors on antitakeover amendments. They argue that investment companies and independent investment advisors are more likely to oppose management on antitakeover amendments than banks, nonbank trusts and insurance companies. Burch and Swaminathan (2002) examine trading behavior of institutions in response to earnings news. They also find significant differences in trading behavior between these two categories of institutions in their response to earnings news. They find that investment companies and independent investment advisors are the most active momentum traders, while banks and insurance companies tend to be more passive. Badrinath and Wahal (2002) also report that the changes in holdings based on past returns are significantly higher for investment advisors and mutual funds than for banks.

In a recent study, Almazan, Hartzell and Starks (2005) find differences in costs of monitoring across these two categories of institutions in the context of executive compensation. The authors refer investment companies and independent investment advisors as “potentially active” institutions and show that they face lower cost of monitoring than banks and insurance companies whom they refer to as “potentially passive” institutions. The authors state that “potentially active” institutions are more likely to have informational advantage and also likely to have competitive advantage with regard to employee skill, as compared to “potentially passive” institutions. We also group institutions into similar two categories and analyze their trading behavior in the context

of merger announcement and its final resolution. We investigate the following questions: How active and passive institutions process and update information and incorporate the information into their trading strategies surrounding the merger announcement and its final outcome? Whether active institutions display superior skill in identifying mergers with higher wealth implications as compared to passive institutions? Whether active institutions possess informational advantage with regard to merger activities and its probable outcome?

First, we investigate how institutions process information released upon announcement of a merger and how they incorporate this new available information into their trading strategies. In particular, we analyze the trading behavior of acquiring firm stocks by active and passive institutions at the merger announcement and investigate whether both types of institutions respond to the market reaction of merger announcements in rebalancing their portfolio. We examine whether these two categories of institutions display heterogeneity in their expertise in identifying mergers with higher wealth implications. We also investigate how active and passive institutions' trading behaviors are influenced by the method of payment of the merger. The literature suggests that stock acquirers experience negative announcement period abnormal returns whereas cash acquirers experience flat to slightly positive abnormal returns. Common interpretations of the negative stock price reaction are that acquirers use stock as the form of payment when their stock is overvalued or that the market perceives the merger to be a value destroying investment project. We investigate how active and passive institutions incorporate the information released with regard to method of payment of the merger into their trading strategies.

Next, we examine whether certain institutions possess superior knowledge about the likelihood of the final outcome of the merger. We argue that the institutions at merger announcement assign a probability to the eventual outcome and then trade accordingly. We investigate whether active and passive institutions have informational advantages in

terms of assessing the likelihood of merger success and failure and how these institutions utilize their information in rebalancing their portfolios.

Our results reveal that, at the announcement quarter, active institutions increase holdings of acquirer's stock significantly for value increasing proposals. This shows that active institutions respond to the merger wealth effect created at the announcement, indicating that they are able to extract information from stock price reaction. The results also indicate that active institutions support stock proposals as opposed to cash proposals at the merger announcement, despite the fact that cash proposals had higher wealth implications at the announcement. We explain active institutions' preference for stock proposals by the "*overreaction phenomenon*;" our results at the final resolution further explain this behavior. Moreover, at the announcement quarter, active institutions seem to have informational advantage in assessing the likelihood of the merger success.

Trading behavior of passive institutions at the announcement quarter indicate that, they trade based on fundamentals of the acquiring firm and not with respect to the market response of the merger announcement, suggesting they are unable to extract information contained in the stock price reaction. Passive institutions do not display any significant preference for stock over cash mergers. In addition, the results do not indicate that at the announcement quarter passive institutions possess any superior information about the likelihood of the final outcome of the merger. Our results are qualitatively unchanged even after we control for percent of stock owned by insiders and owned by corporate five-percent blockholders with no obvious management affiliation.

Finally, we investigate the trading behavior of active and passive institutions at the final resolution quarter. By investigating the trading behavior at the final resolution quarter we shed light on the issue of whether institutions update their information and beliefs between merger announcement and the final outcome of the merger. We observe that at the final resolution quarter, active institutions reverse their trading strategy with regard to the method of payment of the merger by displaying their aversion for stock

mergers at the resolution quarter. We argue that active institutions tend to overreact to stock proposals on the basis of their prior beliefs by supporting stock proposals at the announcement quarter. However, they update their beliefs between announcement and final resolution as more information arrives into the market. Finally, active institutions appear to correct their overreaction behavior by displaying their greater preference for cash proposals as compared to stock proposals at the resolution quarter. We also observe behavioral patterns in passive institutions' trade. Passive institutions display a strong under-reaction to the merger announcement period wealth effect by trading at the resolution quarter on the basis of wealth effect created at the announcement. Our results thus suggest that at the final resolution quarter both active and passive institutions utilize their updated information and then trade accordingly.⁵¹

These results are consistent with behavioral model for under-reaction and over-reaction presented by Hong and Stein (1999), which is based on gradual diffusion of information. The model presents two heterogeneous agents: “news-watchers” and “momentum-traders.” Both types of agents possess bounded rationality, indicating that they are only able to process some subset of available information. News-watchers are unable to draw inference from current or past price and trade based on fundamentals, causing under-reaction. Momentum traders make transaction based on recent price trends, and since they are unable to assess their entry point into the momentum cycle, excessive momentum eventually lead to over-reaction. The trading behavior of institutions therefore suggest that in the context of mergers, passive institutions behave more like “news-watchers” and active institutions reflect upon “momentum-traders.”

⁵¹ Literature addressing the behavioral pattern of institutional investors or corporate decision makers in the context of corporate events is somewhat limited. In a recent paper, Malmendier and Tate (2004) analyze the impact of CEO overconfidence on M&A activities. The authors identify CEOs as overconfidence when they hold company options until expiration, considering the stocks to be undervalued in the market. They show that overconfidence CEOs are more likely to conduct mergers and they are more likely to undertake value destroying ones. The results also indicate that market reacts more negatively to merger announcements by overconfident managers.

The rest of the paper is organized as follows. We discuss the related literature in Section 3.1. Data and methodology is described in Section 3.2. In Section 3.3 we discuss our empirical analysis and results. We conclude the paper in Section 3.4.

3.2. Literature Review

We describe the related literature in this section. In section A, we present existing literature on institutional investors' trading and holding pattern with regard to corporate events. In section B, we discuss the literature that examines the monitoring role of institutional investors with regard to acquisition decisions.

A. Literature Related to Institutional Trading Behavior in Various Corporate Events

The increase in institutional investors' ownership has attracted many researchers to investigate their portfolio holding patterns around various corporate events. Grinstein and Michaely (2005) document relations between institutional holdings and payout policy. Their results suggest that institutions decrease their holdings after an increase in dividends, and increase their holdings after an increase in share repurchase. Their results also indicate that firms' dividend or repurchase policy is not affected by changes in institutional holdings. Gibson, Safieddine and Sonti (2004) study institutional holding behavior around seasoned equity offerings. They document that seasoned equity issuers experiencing the greatest increase in institutional investment around the offer date, outperform their benchmark portfolios in the year following the issue, relative to those experiencing the greatest decrease. Their results suggest that institutions are able to identify above average seasoned equity offering firms at the time of equity issuance and thereby increase their holdings in these potential outperformers. Burch and Swaminathan (2002) examine institutional trading behavior in response to earnings news. The results of their study indicate that institutions do not seem to engage in momentum trading in response to past earnings news. They further document that momentum trading in

response to past returns is strengthened when past returns are accompanied by earnings news in the same direction. Hanley and Wilhelm (1995) document that institutions purchase a fairly constant percentage of approximately 70% of the shares offered in IPOs. Field (1995) finds that IPOs with high institutional ownership perform better over a subsequent three-year period than those with little or no institutional ownership. Krigman, Shaw and Womack (1999) show that IPOs with heavy institutional first day selling, or flipping, perform the worst in the following year, suggesting that institutional investors are better informed than individual investors. Field and Lowry (2005) perform a comprehensive study of institutional investment in IPOs. They show that over both short and long horizons IPOs with higher institutional holdings outperform those with smaller institutional holdings. They document that short horizon superior return is due to institutions' abilities to identify venture-backed firms that subsequently outperform, and that the long horizon superior returns come from institutions' abilities to avoid worst performing firms.

B. Literature Related to M&A Activity and Institutional Trading

The literature on institutional trading surrounding acquisitions is quite limited. There are few studies documenting the monitoring role of institutions with regard to merger decisions and post merger performance. Chen, Harford, and Li (2006) identify institutions that undertake monitoring role in the context of acquisitions decisions. Following Brickley, Lease, and Smith (1988) the authors define independent institutions as the ones without potential or existing business ties. They show that presence of long term independent institutions with large holdings results in better post long term merger performance in terms of buy-and-hold-return, change in industry adjusted return on assets and change in analyst earnings forecasts. High total institutional holdings or large holdings by institutions with possible or existing business ties (grey institutions), or short

term institutions do not predict post-merger performance.⁵² Furthermore, firms with high long-term independent holdings are less likely to announce worst deals and more likely to withdrawal bad merger deals than firms with only large grey or short-term holdings. The authors argue that long-term independent institutions do not adjust portfolio immediately prior to a bid. However, they increase their holdings in advance of mergers with positive wealth implications and reduce their holdings in advance of the worst mergers during one year before announcements. This suggests that they benefit from private information gathering through monitoring.

Qiu (2006) focuses her attention on the role of large public pension fund shareholders on acquisition activity. The author finds that major public pension funds are effective monitors with respect to acquisition decisions of firms. The results indicate that presence of public pension funds improves long-term M&A performance. The author also finds that the presence of public pension funds reduces the likelihood of bad acquisitions driven by managerial incentives, supporting the monitoring role of public pension funds. The study further documents that other institutions have no effect or opposite effect. Mutual fund ownership concentration is higher in acquiring firms with high level of free cash and managerial empire building acquisitions. The results suggest that public pension funds are the only effective monitors among all institutions.

Gopalan (2005) documents that institutional investors' trading can influence the probability of takeover. The author presents a model to show that takeover probability increases when a large shareholder sells. The results suggest that blockholders selling increases takeover probability by over 35%. The model shows that institutions are likely to directly intervene in larger and less liquid firms with higher ownership stake. Otherwise, institutions are likely to sell and facilitate intervention through takeovers.

⁵² Our definition of active and passive institutions corresponds to independent and grey institutions respectively as defined in Chen, Harford, and Li (2006).

This paper analyzes a different aspect in understanding institutional investors' role in the context of merger activities. By examining the trading behavior of institutions at merger announcement and at the final resolution of merger, we draw inferences on information environment of institutions and their ability to respond quickly and correctly with regard to new information released in the market upon merger announcement. We investigate how institutions process information released upon announcement of a merger and how they incorporate this new available information into their trading strategies. Furthermore, we examine whether they update their information set as more information arrives in the market and how they adjust their trading strategies. The paper also sheds light on whether there is heterogeneity among institutional investors with regard to skill and informational advantage surrounding merger activities.

3.3. Date and Methodology

In this section we explain the data and methodology used in our analysis. In section A we explain the data sources as well as our process of obtaining the sample. We describe the process of identification of active and passive institutions in section B. In section C we present the methodology of computing the aggregate change in percentage holdings of shares of acquiring firm by institutions. In section D we present the methodology for computing combined announcement period abnormal return and the process of identification of value increasing and value reducing proposals.

A. Data

Our data source is Securities Data Corporation's (SDC) M&A database. Our sample period is from the years 1992 - 2001. Since we are interested in observing institutional investors reactions to merger announcements we concentrate on deals that are over 100 million dollars with publicly traded acquiring and target firms, as large deals are likely to have high institutional presence. We only consider merger proposals with a

single bidder since multiple bidder proposals would require making simultaneous comparisons of institutional behavior for all the bidders for a merger proposal. With this exclusion criterion the number of sample mergers is narrowed down to 2863. Furthermore, we exclude from our analysis merger proposals with announcement and completion or cancellation at the same quarter, since institutional holdings data is available on a quarterly basis. In the case of merger proposals that have same bidder firm with overlapping windows between merger announcement and completion or cancellation, we consider the first merger proposal for the acquirer. With these additional screenings our sample size reduces to 2073. The data on the method of payment and the eventual outcome of the deal are also obtained from the SDC database.

Ownership of acquiring firm stock by institutional investors comes from CDA-Spectrum 13f filings, which reports the quarterly holdings information of institutions. Returns, shares outstanding and market capitalization data are obtained from the Center for Research in Security Prices (CRSP) database. After combining the merger data with CRSP and institutional holdings data, our final sample size becomes 1533. We obtain ownership data for corporate five-percent blockholders with no obvious management affiliation, and percent of outstanding stock beneficially owned by managers and/or directors from Compact Disclosure SEC data source.

B. Active and Passive Institutions

In order to investigate whether different institutions behave differently in rebalancing their portfolios after merger announcement, we divide institutions into active and passive groups. Brickley, Lease, Smith (1988) argue that non-bank trusts, insurance companies and commercial banks generally have current or potential business with corporations and are therefore more likely to be pressured by management to provide support on controversial issues. Whereas public pension funds, mutual funds, and foundations are less influenced by management pressure and oppose management on

controversial issues. In a recent paper, Almazan, Hartzell and Starks (2005) show that investment companies and independent investment advisers, which the authors refer as “potentially active” institutions, play a more active monitoring role with regard to executive compensation than banks and insurance companies, which they refer as “potentially passive” institutions. They show that active institutions have stronger effect on pay-for-performance sensitivity than passive institutions and both salary and total direct compensation are lower with higher active institutions’ ownership. On the basis of these studies we categorize institutions into two similar groups: active and passive institutions, and examine whether they display any heterogeneity with regard to their expertise in identifying mergers with higher wealth implications. As stated earlier, we obtain institutional holdings data from CDA-Spectrum 13f filings, which also contain information regarding type of institution. CDA data classifies each institution as one of five types: (1) banks, (2) insurance companies, (3) investment companies and their managers i.e. mutual funds, (4) independent investment advisors and (5) others, which include endowments, foundations, private and public pension funds. We categorize types 1 and 2 as passive institutions and types 3 and 4 as active institutions. Since type 5 is not distinct, we do not include it in either category in our initial analysis. As part of our robustness checks we include type 5 in both active and passive category and test how this influences the results.

C. Computation of Aggregate Change in Percentage Holdings of Acquirer Shares by Institutions

We compute the aggregate change in percentage holdings of stocks of acquiring firm by institutions in different quarters surrounding the merger announcement. For any institution m for quarter t first we compute the percentage of ownership of acquirer stock i by the following:

$$\%Ownership_{imt} = \frac{NumberOfSharesHold_{imt}}{TotalSharesOutstd_{it}}$$

Where, $NumberOfSharesHold_{imt}$ is the number of outstanding shares of acquiring firm i held by institutions m at quarter t . $TotalSharesOutstd_{it}$ is the total number of shares outstanding of acquiring firm i in quarter t . Percentage change in holdings of acquirer stock i from quarter $t-1$ to t is computed by the following

$$\%HoldChange_{imt} = \%Ownership_{imt} - \%Ownership_{imt-1}$$

The aggregate percentage holdings and aggregate change in percentage holdings of active institutions are computed over all active institutions m for quarter t for acquirer stock i . Similarly the aggregate percentage holdings and aggregate change in percentage holdings for passive institutions are computed.

D. Value Increasing and Value Reducing Proposals

The most important concern regarding M&A proposals is whether the merger creates wealth. The wealth effect is estimated by the combined announcement period abnormal return of the acquiring and target firms.⁵³ If the combined firms' announcement period abnormal return is positive, the merger is considered to be a value increasing proposal; if it is negative, the merger is considered to be a value reducing proposal. We use event study methodology using the market adjusted abnormal return to measure the price reaction of the merger proposal at the announcement. We estimate the abnormal return for both acquiring and target firms for the three day event window around the announcement of the takeover. This event window is represented as $[-1, +1]$, where day 0 is the announcement date. The abnormal return for any acquiring or target firm i on day t is

$$AR_{it} = R_{it} - R_{mt}, \text{ for } t = [-1, +1]$$

⁵³ Ostrovsky and Matvos (2006) show that institutional shareholder of acquiring companies also hold substantial stakes in the targets.

where, R_{it} is the return of firm i on day t and R_{mt} is the return of the CRSP value weighted index of NYSE, AMEX and NASDAQ stocks. The cumulative abnormal return for firm i over the event window $[-1, +1]$ is computed as follows:

$$CAR_i = \sum_{t=-1}^1 AR_{it}$$

Therefore for each of the merger announcements in our sample we compute CAR_{acq} and CAR_{tgt} over the event window. The combined return is the weighted average of the returns of the two parties in the merger, where the weights are the equity values of the particular target and of the bidder firm. We use the following formula:

$$CAR_{acq_tgt} = \frac{AcqValue * CAR_{acq} + TgtValue * CAR_{tgt}}{AcqValue + TgtValue}$$

where acquirer and target values are computed using the following:

$$AcqValue = Bidder Price * Number of Shares Outstanding$$

$$TgtValue = Target Price * Number of Shares Outstanding$$

Both price and number of shares outstanding are obtained two days prior to the announcement. On the basis of this CAR_{acq_tgt} value we determine whether the takeover proposal is a value increasing or a value reducing proposal. If CAR_{acq_tgt} is positive, we identify the proposal as value increasing and if CAR_{acq_tgt} is negative, we identify the proposal as value decreasing.

We present abnormal returns for the sample mergers for different quarters surrounding mergers in Table 3.1. We categorize the proposals on the basis of merger wealth effect (value increasing vs. value decreasing), method of payment (cash vs. stock), and final outcome of the merger (success vs. failure). Table 3.1 shows that in our sample there are more stock proposals than cash proposals and there are more value increasing proposals than value decreasing proposals. Cash mergers have greater proportion of value increasing merges as compared to stock mergers. We report buy and hold market

Table 3.1: Abnormal Return for Merger Proposals for the Period 1992 - 2001

The table presents market adjusted abnormal return for sample merger proposals for the period 1992-2001. The table reports 8 categories of mergers by classifying them with respect to announcement period wealth effect: value increasing (V+) vs. value decreasing (V-), method of payment (Cash vs. Stock), and final outcome of merger (Success vs. Failure). For each of the categories the table provides market adjusted abnormal return for the following: 2 Qtr prior to merger announcement for acquirer, 1 Qtr prior to merger announcement for acquirer, announcement period abnormal return for the acquirer: one day prior to one day after merger announcement (-1, +1), announcement period abnormal return for the target: one day prior to one day after merger announcement (-1, +1), announcement period abnormal return for the combined firm: one day prior to one day after merger announcement (-1, +1), abnormal return for the acquirer between announcement to final outcome of the merger, final outcome period abnormal return for the acquirer: one day prior to final outcome to one day after the final outcome (-1, +1), 1 Qtr after final outcome for acquirer, and 2 Qtr after final outcome for acquirer. ***, ** and * denote 1%, 5% and 10% level of significance respectively.

Announcement Period Wealth Effect	Method of Payment	Final Outcome of Merger	Number of Obs	Market Adjusted Abnormal Return								
				Acquirer: 2 Qtr prior to Merger Announcement	Acquirer: 1 Qtr Prior to Merger Announcement	Acquirer: Announcement Period Abnormal Return for (-1, +1)	Target: Announcement Period Abnormal Return For (-1, +1)	Combined Firm: Announcement Period Abnormal Return for (-1, +1)	Acquirer: Abnormal return between Announcement to Final Outcome	Acquirer: Final Outcome Abnormal Return (-1, +1)	Acquirer 1 Qtr After Final Outcome	Acquirer 2 Qtr After Final Outcome
V+	Cash	Success	406	0.0363	0.0204	0.0258	0.2072	0.0665	0.044	0.0048	-0.0019	0.1163
		Failure	66	0.0139	-0.0365	0.0174	0.1944	0.0630	-0.024	0.0080	-0.0583	0.0986
	Stock	Success	366	0.2498	0.1291	0.0156	0.2234	0.0541	-0.002	0.0094	-0.0622	0.0314
		Failure	42	0.2378	0.1521	0.0200	0.1810	0.0673	-0.106	0.0264	-0.1310	-0.0615
V-	Cash	Success	188	-0.0136	-0.0200	-0.0453	0.0925	-0.0367	-0.019	0.0042	0.0013	0.1058
		Failure	31	0.0403	0.0168	-0.0423	0.0381	-0.0359	0.048	0.0107	-0.0808	-0.0222
	Stock	Success	397	0.2472	0.0676	-0.0753	0.1047	-0.0530	-0.078	0.0076	-0.0641	-0.0286
		Failure	37	0.2273	0.0399	-0.1266	0.0634	-0.0746	-0.154	0.0384	-0.1325	-0.0481
Total Number of Sample Merger Proposals			1533	0.1453 ***	0.0553 ***	-0.0171 ***	0.1623 ***	0.0143 ***	-0.0181 ***	0.0082 ***	-0.0428 ***	0.0446 ***

adjusted abnormal return for the acquirer for two quarters prior to merger announcement, one quarter prior to merger announcement, between merger announcement and final resolution, one quarter after final resolution, and two quarters after final resolution. We observe that stock acquirers had a huge price run-up both two quarter and one quarter prior to merger announcement. In addition, stock acquirers display higher return as compared to cash acquirers prior to merger announcement. We also report the announcement period cumulative abnormal return for the event window (-1, +1) for acquirer, target and combined firm. We observe that for value increasing successful mergers cash acquirers have higher announcement period abnormal returns than stock acquirers. In case of value decreasing mergers, cash acquirers have higher wealth implication irrespective of merger outcome. Moreover, between merger announcement and final resolution and also one and two quarter after merger resolution cash acquirers have higher return as compared to stock acquirers. Hence, this suggests that prior to merger announcement stock acquirers had superior performance in terms of equity return as compared to cash acquirers. However, at the merger announcement, between merger announcement and final resolution, and after the final resolution of merger cash acquirers display higher equity return. One interesting observation is that, the price reaction over three days window around merger resolution is positive for acquiring firms' stocks across all scenarios and higher for cancelled deals as compared to successful deals.

We present the mean percentage holdings of acquiring firm stocks by active and passive institutions in Table 3.2 and the changes in percentage holdings in Table 3.3 for different quarters surrounding announcement and resolution of merger. As in Table 3.1, we categorize the proposals on the basis of merger wealth effect (value increasing or value reducing), method of payment, and final outcome of the merger. In Table 3.2, we observe that the average percentage holdings of active institutions are higher than those of passive institutions. We also observe that for value increasing proposals active institutions' holdings are higher for stock proposals than cash proposals, for all quarters

Table 3.2: Institutional Percentage Holdings of Acquiring Firms Stocks

This table presents institutional investors' average percentage holdings of acquiring firms stocks for the sample merger proposals between 1992-2001. The table displays holding information of active institutions (mutual funds, investment advisors) and passive institutions (banks and insurance companies). The table reports 8 categories of mergers by classifying them with respect to announcement period wealth effect: value increasing (V+) vs. value decreasing (V-), method of payment (Cash vs. Stock), and final outcome of merger (Success vs. Failure). For each of the categories the table provides average of institutional percentage holdings of acquiring firms' stock for 7 different time horizon. For any institution m for quarter t the percentage of holdings of acquirer stock i is computed by: $\%Holdings_{imt} = \frac{NumberOfSharesHold_{imt}}{TotalSharesOutstndg_{it}}$. The aggregate percentage

holding for stock i for quarter t for active (passive) institutions is computed by summing $\%Holdings_{imt}$ over all active (passive) institutions m . For each of the time horizon, the table reports the mean aggregate percentage holdings over all the sample mergers in each category.

Type of Institutions	Announcement Period Wealth Effect	Method of Payment	Final Outcome of Merger	Institutional Percentage Holdings of Acquiring Firms						
				2 Qtr Before Merger Announcement	1 Qtr Before Merger Announcement	Announcement Qtr	Qtr Between Announcement and Resolution	Resolution Qtr	1 Qtr After Merger Completion or Cancellation	2 Qtr After Merger Completion or Cancellation
ACTIVE	V+	Cash	Success	21.9	20.4	19.9	21.5	19.7	18.7	18.0
			Failure	21.6	19.7	19.0	20.8	17.2	16.4	17.0
		Stock	Success	24.0	23.6	24.2	18.3	22.1	19.8	18.6
			Failure	25.6	25.4	24.3	23.2	22.4	22.7	19.4
	V-	Cash	Success	20.6	19.3	18.7	19.7	16.8	16.2	15.2
			Failure	24.0	22.8	19.0	9.8	18.3	16.4	16.5
		Stock	Success	20.5	20.3	19.3	17.2	16.7	15.0	13.5
			Failure	23.9	22.7	19.9	20.8	18.2	16.2	14.2
PASSIVE	V+	Cash	Success	12.1	11.7	11.5	12.6	11.5	11.3	11.3
			Failure	11.1	11.2	10.5	13.5	10.3	10.6	9.7
		Stock	Success	9.7	9.8	10.0	10.1	9.9	9.8	9.5
			Failure	11.1	11.0	11.9	14.7	12.1	11.0	10.1
	V-	Cash	Success	13.0	12.2	11.9	13.3	11.0	11.4	11.3
			Failure	10.4	10.5	9.7	9.3	9.7	11.0	10.7
		Stock	Success	10.5	10.5	10.6	10.9	10.3	9.8	9.5
			Failure	10.1	9.9	9.0	10.8	10.0	9.9	8.9

Table 3.3: Change in Percentage Holdings of Acquiring Firms Stocks

This table presents institutional investors' change in percentage holdings of acquiring firms stocks for the sample merger proposals between 1992-2001. The table displays changes in holdings by active institutions (mutual funds, investment advisors) and passive institutions (banks and insurance companies). The table reports 8 categories of mergers by classifying them with respect to announcement period wealth effect: value increasing (V+) vs. value decreasing (V-), method of payment (Cash vs. Stock), and final outcome of merger (Success vs. Failure). For each of the categories the table provides percentage change of holdings of acquiring firms' stock for 7 different time horizon. For any institution m for quarter t the percentage of holdings of acquirer stock i is computed by: $\%Holdings_{imt} = \frac{NumberOfSharesHold_{imt}}{TotalSharesOutstanding_{it}}$. The aggregate percentage holding for stock

i for quarter t for active (passive) institutions is computed by summing $\%Holdings_{imt}$ over all active (passive) institutions m . For each of the time horizon, the table reports the mean aggregate change in percentage holdings with respect to previous quarter over all the sample mergers in each category. ***, ** and * denote 1%, 5% and 10% level of significance respectively.

Type of Institutions	Announcement Period Wealth Effect	Method of Payment	Final Outcome of Merger	Change in Percentage Holdings of Acquiring Firms						
				2 Qtr Before Merger Announcement	1 Qtr Before Merger Announcement	Announcement Qtr	Qtr Between Announcement and Resolution	Resolution Qtr	1 Qtr After Merger Completion or Cancellation	2 Qtr After Merger Completion or Cancellation
ACTIVE	V+	Cash	Success	0.29 **	0.07	0.10	0.14	0.28	-0.04	-0.10
			Failure	-0.19	-0.28	-0.08	-0.05	0.20	-0.24	0.04
		Stock	Success	0.39 *	-0.02	0.87 ***	0.46	-1.55 ***	-1.22 ***	-0.24 *
			Failure	-0.89 *	0.12	0.89 *	-0.46	-0.03	0.33	0.46
	V-	Cash	Success	-0.57	-0.28	-0.16	0.09	0.04	0.37	0.24
			Failure	-0.43	0.49	0.23	-0.12	-0.86	-0.59	-0.22
		Stock	Success	0.00	-0.20	0.09	0.08	-0.98 ***	-0.30	-0.49 **
			Failure	0.09	0.27	0.76	-0.50	-1.14	-0.69 *	-1.38 **
PASSIVE	V+	Cash	Success	0.25 **	-0.01	0.06	0.001	0.06	0.07	0.14 *
			Failure	0.29	0.34	-0.29 **	0.15	-1.25	0.13	-0.71
		Stock	Success	0.18 **	0.17 **	0.21 **	0.58 ***	-0.24 **	0.07	-0.03
			Failure	0.35	0.28	0.73 *	0.36 *	0.96	-0.59	-1.10 ***
	V-	Cash	Success	0.14	-0.10	0.06	0.05	-0.21	-0.02	-0.13
			Failure	-0.24	-0.47	-0.48	-0.23	0.57	0.39 **	0.20
		Stock	Success	0.09	0.08	0.26 *	0.18	-0.29 ***	-0.17 *	-0.07
			Failure	-0.04	0.42 *	0.27	0.26	-0.13	0.00	-0.82 **

reported in the table. For value reducing proposals, although active institutions' percentage holdings are higher at the announcement quarter for stock proposals, at the resolution quarter and the two quarters following resolution their percentage holdings are higher for cash proposals. We do not observe any distinct preference in passive institutions' holdings for value increasing cash or stock mergers.

In Table 3.3 we report the average change in percentage holdings of acquiring firm stocks for active and passive institutions. We note that for value increasing successful mergers both active and passive institutions increase their holdings significantly two quarters prior to merger announcement for both cash and stock mergers. This supports the notion that institutions engage in informed trading with regard to possible merger wealth implication and final outcome of the merger long before merger announcement. One interesting observation is that active institutions reduce holdings two quarter prior to merger announcement for value increasing merger proposals that eventually fail. Hence, this suggests that active institutions' selling could be influencing the likelihood of merger failure. We also observe that one quarter prior to merger announcement active institutions do not engage in significant changes in holdings of acquiring stocks.⁵⁴ This is consistent with the argument presented by Chen, Harford, Li (2006) that these institutions do not adjust portfolio immediately prior to a bid. However, the main focus of this paper is to examine the trading behavior of institutions at the announcement and at the final resolution of merger and examine how they respond with regard to the new information that arrives in the market upon announcement of a merger.

We note that for value increasing stock proposals that are successful, the average change in percentage holdings of acquiring firm stocks by active institutions at the announcement quarter is positive and significant, while the resolution quarter and the two quarters following the resolution show decline in holdings. Passive institutions also

⁵⁴ We construct similar table using only acquiring firm announcement period abnormal return. The results have similar implications, suggesting that active institutions prefer stock acquirers at the announcement quarter, however at the resolution quarter they show aversion towards stock acquirers.

increase holdings at the announcement quarter for value increasing stock proposals that are successful and show a similar reduction in holdings at the resolution quarter. For value reducing stock mergers, passive institutions display significant increase at the announcement quarter for successful mergers and significant reduction in holdings at the resolution quarter. Active institutions' increase in holdings is not significant for value reducing stock proposals at the announcement quarter; however their reduction in holdings for successful mergers is significant at the resolution quarter. Hence, this suggests strong preference of stock proposals as oppose to cash proposals at the announcement quarter by both active and passive institutions and reversal in their preference at the resolution quarter. Our regression analysis in the next section examines this issue more closely. We observe that for unsuccessful mergers, both active and passive institutions do not change their holdings significantly at the resolution quarter. This implies that for the withdrawn mergers, most of the acquiring firm shareholding adjustment takes place prior to the resolution quarter.

3.4. Results

In this section we describe our empirical analysis and discuss the results. In section A, we investigate the trading behavior of active and passive institutions at the announcement quarter and investigate whether they respond to the market reaction of merger announcements in rebalancing their portfolio. We examine whether these two categories of institutions display heterogeneity in their expertise in identifying mergers with higher wealth implications. We also investigate how active and passive institutions' trading behaviors are influenced by the method of payment of the merger. Next we perform scenario analysis on the basis of merger announcement period wealth effect, method of payment, and final outcome of the merger, and examine whether active and passive institutions possess superior knowledge at the announcement quarter with regard to the final outcome of the merger. In section B, we investigate the trading behavior of

active and passive institutions in the quarters between merger announcement and its outcome and also at the final resolution quarter. This allows us to shed light on the issue of whether institutions update their information and beliefs between merger announcement and the final outcome of the merger. In section C, we perform some additional tests on trading by active and passive institutions in association with the final resolution quarter. In section D, we discuss the results of our robustness checks.

A. Trading Behavior of Active and Passive Institutions at the Announcement Quarter

We investigate the trading behavior of acquiring firm stocks by active and passive institutions around the announcement of the merger in a multivariate regression setting. These results are presented in Tables 3.4 and 3.5 respectively for active and passive institutions. The dependent variable in the regression is the aggregate change in institutional holdings of acquirer stock in the announcement quarter. We include independent variable CAR, which is cumulative market-adjusted abnormal return for the combined firm at the merger announcement for the event window (-1, +1), to analyze whether institutions respond to merger announcement period wealth effect in trading acquiring firm stock. In order to examine the effect of method of payment we include indicator variable CASH DUMMY, which is equal to 1 if the method of payment for the merger proposal is cash only and is equal to 0 if the method of payment is stock or combination of stock and cash. SUCCESS is an indicator variable, which is equal to 1 if the merger is successful and 0 otherwise. This allows us to investigate whether institutions are better informed with regard to final outcome of the merger.

The control variables included in the regression are following. PREV QTR HOLD represents the aggregate percentage holdings of acquirer stocks by active (passive) institutions one quarter prior to merger announcement. PREV QTR HOLD CHNG represents the aggregate change in active (passive) institutional holdings of acquirer stock one quarter prior to merger announcement. ACQ LOG ASSET is the natural logarithm of

Table 3.4: Trading Behavior of Active Institutions in the Announcement Quarter

The table presents active institutional investors' trading behavior in the announcement quarter of merger proposals for the period 1992-2001. ANN QTR HOLD CHNG is the dependent variable, which is aggregate change in active institutional holdings of acquirer stock in the announcement quarter. CAR is cumulative abnormal return (market adjusted) for the combined firm at the merger announcement for the event window (-1, +1). CASH DUMMY is a dummy variable, which is equal to 1 if the method of payment for the merger proposal is cash and is equal to 0 if the method of payment is stock or a combination of stock and cash. SUCCESS is a dummy variable, which is equal to 1 if the merger is successful and is equal to 0 if the merger is unsuccessful. PREV QTR HOLD represents the aggregate percentage holdings of acquirer stocks by active institutional investors in the previous quarter before announcement. PREV QTR HOLD CHNG represents the aggregate change in active institutional holdings of acquirer stock in the quarter prior to merger announcement. ACQ LOG ASSET is the natural logarithm of market capitalization of acquirer stocks at the quarter of merger announcement. DEAL VALUE represents the log dollar value of the merger proposal. ACQ BOOK TO MKT represents the book to market ratio of acquiring firm at the announcement quarter. PREV RET 90 DAY represents the buy and hold abnormal return of the acquiring firm over 90 days prior to merger announcement. BLOCKHOLDER HOLD represents the percentage holdings of acquiring firm stock by five percent blockholder in the quarter of merger announcement. INSIDER HOLD represents the percentage holdings of acquiring firm stock by corporate insiders in the quarter of merger announcement. ***, ** and * denote 1%, 5% and 10% level of significance respectively.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
INTERCEPT	0.0188 ** (0.05)	0.0179 * (0.10)	0.0173 * (0.08)	0.0159 (0.15)	0.0186 * (0.06)	0.017 (0.13)
CAR	0.0325 *** (0.007)	0.0384 *** (0.001)	0.0394 *** (0.001)	0.0435 *** (0.0005)	0.0395 *** (0.001)	0.0436 *** (0.0005)
CASH DUMMY			-0.004 ** (0.02)	-0.0034 * (0.08)	-0.0046 *** (0.01)	-0.0035 * (0.07)
SUCCESS DUMMY					-0.0020 (0.47)	-0.0016 (0.58)
PREV QTR HOLD	-0.0011 (0.82)	0.0032 (0.51)	-0.0014 (0.77)	0.0028 (0.55)	-0.001 (0.76)	0.0028 (0.56)
PREV QTR HOLD CHNG	-0.068 ** (0.03)	-0.010 (0.75)	-0.0682 ** (0.03)	-0.0091 (0.78)	-0.069 ** (0.02)	-0.0098 (0.76)
ACQ LOG ASSET	-0.0014 ** (0.04)	-0.0015 ** (0.04)	-0.001 (0.13)	-0.0012 (0.11)	-0.001 (0.16)	-0.0012 (0.12)
DEAL VALUE	0.0012 (0.14)	0.0012 (0.13)	0.001 (0.32)	0.001 (0.23)	0.0007 (0.38)	0.001 (0.26)
ACQ BOOK TO MKT	-0.0079 ** (0.04)	-0.0067 * (0.10)	-0.0063 * (0.10)	-0.0053 (0.21)	-0.0063 (0.11)	-0.0053 (0.21)
PREV RET 90DAY	-0.0005 (0.84)	0.0001 (0.96)	-0.0015 (0.61)	-0.0006 (0.83)	-0.0014 (0.62)	-0.0005 (0.85)
BLOCKHOLDER HOLD		-0.00001 (0.84)		0.000001 (0.94)		-0.00001 (0.94)
INSIDER HOLD		0.0001 * (0.09)		0.0001 (0.13)		0.0001 (0.13)
R^2	0.016	0.022	0.021	0.025	0.021	0.025
Number of Observations	1216	1049	1216	1049	1216	1049

market capitalization of equity of acquirer. DEAL VALUE represents the natural logarithm of dollar value of the merger proposal. ACQ BOOK TO MKT represents the book to market ratio. PREV RET 90 DAY represents the buy and hold abnormal return of the acquiring firm over the 90 days prior to merger announcement. BLOCKHOLDER HOLD represents the percentage holdings of five percent blockholders in the quarter of merger announcement. INSIDER HOLD represents the percentage holdings of corporate insiders in the quarter of merger announcement.⁵⁵

In Table 3.4, we present the results for active institutions through six models. The primary difference between models 1, 3, 5 and 2, 4, 6 is whether or not we use additional control variables related to insider and block holdings. These variables control for percent of stock owned by individual and corporate five-percent blockholders with no obvious management affiliation and percent of outstanding stock beneficially owned by managers and/or directors. We focus our discussions on models 1, 3, and 5, as qualitatively the results remain unchanged whether or not we employ additional control variables.

In model 1, the coefficient of CAR is positive and significant at the one percent level (p-value of .007). This suggests that at the announcement quarter, active institutions increase holdings of acquirer stocks significantly for mergers with higher wealth implications. This implies that active institutions respond to the merger wealth effect created at the announcement, indicating that they are able to extract information from stock price reaction and trade based on the new information released upon merger announcement. Since institutions holding data is quarterly, it is possible that the reported changes in holdings in 13-f filings corresponds to the changes in holdings before the announcement of merger. In order to address this issue, we perform a sub-sample analysis with merger announcement in the first month of each quarter, considering that the reported quarterly changes in holdings by institutions would correspond to the

⁵⁵ Additionally we control for number of days between merger announcement and quarter-end and the results remain similar. We also control for trading seasonality by including beginning of year and end of year effect and the results are consistent.

portfolio rebalancing activities in the later part of the quarter and hence after the merger announcement. CAR continues to have positive and significant effect (coefficient 0.098 and p-value 0.0002) on changes in holdings by active institutions for this sub-sample test (results not reported in table). The effect is even stronger (coefficient 0.224 and p-value 0.006) for the sub-sample analysis with the announcement date in the first week of each quarter. Hence, this emphasizes that at the announcement quarter active institutions respond to mergers with higher wealth implications by increasing holdings of acquirer stocks. In Table 3.4, the coefficient of PREV QTR HOLD CHNG is negative and significant. This suggests that the active institutions do not increase their holdings as much during the merger quarter in cases where they had already increased their holdings in the quarter prior to the merger.

Literature on mergers suggests that the bidder firm return varies with the method of payment. Earlier research on announcement period return suggests that acquirer shareholders earn little or no abnormal return from cash tender offers and negative abnormal return for mergers with payment method as stocks.⁵⁶ For our sample mergers, the mean return of the combined firm at the merger announcement (-1, +1) is -0.001 (insignificant) for stock mergers and 0.034 (significant) for cash mergers. The mean return of the acquirer firm at the merger announcement is -0.033 (significant) for stock mergers and 0.003 (insignificant) for cash mergers. In model 3, we examine whether institutional investors engage in significantly different trading activity for cash versus stock mergers. The coefficient of CASH DUMMY is negative and significant at the five percent level. This suggests that active institutions increase holdings significantly more for stock acquirers as compared to cash acquirers, indicating their preference for stock proposals, despite the fact that cash proposals had higher wealth implications at the

⁵⁶ Literature on long horizon return also document that cash mergers outperform stock mergers in the long run. Loughran and Vijh (1997) show that during a five-year period following the acquisition, on average, firms that complete stock mergers earn significantly negative excess returns of -25%, whereas firms that complete cash tender offers earn significantly positive excess returns of 61%.

announcement. Rau and Vermaelen (1998) report that glamour bidders pay more with stocks than value bidders. This suggests that active institutions prefer glamour stocks. This is also consistent with Lakonishok, Shleifer and Vishny's (1994) finding that institutional investors tilt toward glamour stocks. Hence our results indicate that in terms of overall wealth implications, active institutions are able to differentiate value increasing mergers from value decreasing mergers at the announcement quarter. However, in analyzing the wealth effect with respect to method of payment, they are unable to process and incorporate the new information released upon merger announcement. Our analysis in the final resolution examines this behavior further and draws inferences from behavioral model.

In model 5, we control for the eventual outcome of the merger at the announcement quarter. The coefficient of SUCCESS DUMMY is not statistically significant. This suggests that portfolio adjustment by active institutions at the time of merger announcement is primarily driven by the wealth consequences of the merger announcement. The scenario analysis presented in the latter part of this section investigates the informational content of institutions with regard to the final outcome of the merger in detail.

We next test whether active institutions engage in informed trading ahead of merger announcement anticipating wealth implications of possible merger deals. To test whether active institutions are informed, we perform reverse regression and examine whether changes in holdings prior to announcement predict merger announcement period return (results not shown in table). The dependent variable in this analysis is CAR and independent variable is changes in percentage holdings of acquiring firm stock by active institutions one quarter prior to merger announcement. We find that CAR is not influenced by the changes in percentage holdings (coefficient 0.068 and p-value 0.36) by active institutions in the previous quarter of announcement. We further examine active institutions' trading prior to merger announcement with a sub-sample of merger deals

with announcement dates in the first week of each quarter. Since institutions report changes in holdings in 13-f filings end of quarter, this sub-sample would allow us to investigate active institutions' trading much closer to the announcement of a merger. The effect of PREV QTR HOLD CHNG on CAR is also positive and insignificant (coefficient 0.151 and p-value 0.55) in the sub-sample analysis. Hence, these results do not indicate that active institutions engage in informed trading with regard to wealth implication of merger just before announcement.

The results for passive institutions are presented in Table 3.5. The format for this Table is identical to the one that we used for presenting the results for active institutions. It is interesting to note that in model 1, the coefficient of CAR is not statistically significant. The coefficient of CASH DUMMY is also insignificant in model 3. These results suggest that at the announcement quarter passive institutions do not actively rebalance their portfolios with respect to merger announcement period wealth effect or method of payment of the merger.⁵⁷ The coefficient of SUCCESS DUMMY is also not statistically significant. This suggests that portfolio adjustment by passive institutions at the time of merger announcement is not influenced by the outcome of the merger. The negative significant coefficient of ACQ BOOK TO MKT implies that passive institutions decrease holdings of acquirer stocks at the announcement quarter which have high book-to-market ratio. This indicates that passive institutions prefer low financially distressed firms. Hence, at merger announcement passive institutions' trading behavior is not influenced by merger characteristics, but rather by acquiring firm characteristics. In section B we will see how passive institutions update their beliefs and change their trading strategies at the resolution quarter.

⁵⁷ We also test whether passive institutions engage in informed trading ahead of merger announcement. To test whether passive institutions are informed, we perform reverse regression and examine whether past changes in holdings predict future merger performance. The effect of passive institutions' PREV QTR HOLD CHNG on CAR is positive and insignificant (coefficient 0.123 and p-value 0.32). The similar result is obtained with a sub-sample of merger deals with announcement date in the first week of each quarter. Hence, the results do not indicate that passive institutions engage in informed trading with regard to possible merger wealth implication prior to merger announcement.

Table 3.5: Trading Behavior of Passive Institutions in the Announcement Quarter

The table presents passive institutional investors' trading behavior in the announcement quarter of merger proposals for the period 1992-2001. ANN QTR HOLD CHNG is the dependent variable, which is aggregate change in passive institutional holdings of acquirer stock in the announcement quarter. CAR is cumulative abnormal return (market adjusted) for the combined firm at the merger announcement for the event window (-1, +1). CASH DUMMY is a dummy variable, which is equal to 1 if the method of payment for the merger proposal is cash and is equal to 0 if the method of payment is stock or a combination of stock and cash. SUCCESS is a dummy variable, which is equal to 1 if the merger is successful and is equal to 0 if the merger is unsuccessful. PREV QTR HOLD represents the aggregate percentage holdings of acquirer stocks by passive institutional investors in the previous quarter before announcement. PREV QTR HOLD CHNG represents the aggregate change in passive institutional holdings of acquirer stock in the quarter prior to merger announcement. ACQ LOG ASSET is the natural logarithm of market capitalization of acquirer stocks at the announcement quarter. DEAL VALUE represents the log dollar value of the merger proposal. ACQ BOOK TO MKT represents the book to market ratio of acquiring firm at the announcement quarter. PREV RET 90 DAY represents the buy and hold abnormal return of the acquiring firm over 90 days prior to merger announcement. BLOCKHOLDER HOLD represents the percentage holdings of acquiring firm stock by five percent blockholder in the quarter of merger announcement. INSIDER HOLD represents the percentage holdings of acquiring firm stock by corporate insiders in the quarter of merger announcement. ***, ** and * denote 1%, 5% and 10% level of significance respectively.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
INTERCEPT	0.0028 (0.65)	0.0080 (0.28)	0.0024 (0.69)	0.0074 (0.33)	0.0021 (0.74)	0.0063 (0.41)
CAR	-0.0077 (0.31)	-0.0075 (0.37)	-0.0056 (0.46)	-0.0054 (0.53)	-0.0057 (0.47)	-0.0055 (0.52)
CASH DUMMY			-0.0013 (0.27)	-0.0014 (0.31)	-0.0013 (0.28)	-0.0013 (0.35)
SUCCESS DUMMY					0.0006 (0.74)	0.0015 (0.43)
PREV QTR HOLD	-0.0119 (0.11)	-0.010 (0.26)	-0.011 (0.14)	-0.0091 (0.31)	-0.0112 (0.14)	-0.0089 (0.32)
PREV QTR HOLD CHNG	0.0319 (0.33)	0.034 (0.35)	0.0295 (0.37)	0.031 (0.39)	0.030 (0.36)	0.0331 (0.37)
ACQ LOG ASSET	-0.0001 (0.70)	-0.0006 (0.25)	-0.00008 (0.86)	-0.0005 (0.34)	-0.0001 (0.83)	-0.0005 (0.30)
DEAL VALUE	0.0007 (0.13)	0.001 * (0.06)	0.0006 (0.20)	0.0009 * (0.09)	0.0007 (0.18)	0.0010 * (0.07)
ACQ BOOK TO MKT	-0.0062 *** (0.008)	-0.0072 *** (0.009)	-0.0057 *** (0.01)	-0.0065 *** (0.01)	-0.006 *** (0.01)	-0.0064 *** (0.01)
PREV RET 90DAY	-0.0015 (0.39)	-0.0012 (0.52)	-0.0018 (0.32)	-0.0015 (0.44)	-0.0018 (0.32)	-0.0015 (0.42)
BLOCKHOLDER HOLD		0.00001 (0.66)		0.00002 (0.55)		0.00002 (0.54)
INSIDER HOLD		-0.00007 (0.11)		-0.00007 * (0.10)		-0.00007 * (0.10)
R^2	0.012	0.014	0.013	0.016	0.013	0.015
Number of Observations	1226	1058	1226	1058	1226	1058

Table 3.6: Trading Behavior of Active and Passive Institutions in the Announcement Quarter: Market Model CAR

The table presents active and passive institutional investors' trading behavior in the announcement quarter of merger proposals for the period 1992-2001. ANN QTR HOLD CHNG is the dependent variable, which is aggregate change in active (passive) institutional holdings of acquirer stock in the announcement quarter. CAR is cumulative abnormal return (market model) for the combined firm at the merger announcement for the event window (-1, +1). The ordinary least square coefficients of the market model regression are estimated over the period [-244, -6] with respect to the announcement date. CASH DUMMY is a dummy variable, which is equal to 1 if the method of payment for the merger proposal is cash and is equal to 0 if the method of payment is stock or a combination of cash and stock. SUCCESS is a dummy variable, which is equal to 1 if the merger is successful and is equal to 0 if the merger is unsuccessful. All other control variables are defined in the Appendix. ***, ** and * denote 1%, 5% and 10% level of significance respectively.

	Active Institutions			Passive Institutions		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
INTERCEPT	0.018 (0.10)	0.016 (0.15)	0.017 (0.13)	0.007 (0.33)	0.007 (0.38)	0.006 (0.47)
CAR	0.038 *** (0.002)	0.043 *** (0.0006)	0.043 *** (0.0006)	-0.009 (0.31)	-0.006 (0.45)	-0.007 (0.44)
CASH DUMMY		-0.003 * (0.08)	-0.003 * (0.07)		-0.001 (0.31)	-0.001 (0.35)
SUCCESS DUMMY			-0.002 (0.58)			0.001 (0.46)
PREV QTR HOLD	0.003 (0.56)	0.002 (0.62)	0.002 (0.63)	-0.009 (0.30)	-0.008 (0.34)	-0.008 (0.35)
PREV QTR HOLD CHNG	-0.01 (0.74)	-0.01 (0.76)	-0.011 (0.74)	0.034 (0.36)	0.03 (0.40)	0.032 (0.38)
ACQ LOG ASSET	-0.002 ** (0.04)	-0.001 (0.11)	-0.001 (0.13)	-0.0005 (0.28)	-0.0004 (0.39)	-0.0005 (0.35)
DEAL VALUE	0.001 (0.13)	0.001 (0.24)	0.001 (0.27)	0.001 * (0.07)	0.001 (0.11)	0.001 (0.09)
ACQ BOOK TO MKT	-0.007 * (0.09)	-0.006 (0.18)	-0.006 (0.18)	-0.007 *** (0.01)	-0.006 ** (0.02)	-0.006 ** (0.02)
PREV RET 90DAY	0.0008 (0.77)	0.0001 (0.97)	0.0002 (0.95)	-0.001 (0.53)	-0.001 (0.45)	-0.001 (0.44)
BLOCKHOLDER HOLD	-0.00001 (0.88)	0.00001 (0.88)	0.00001 (0.89)	0.00001 (0.61)	0.00002 (0.51)	0.00002 (0.50)
INSIDER HOLD	0.0001 * (0.09)	0.0001 (0.13)	0.0001 (0.13)	-0.0001 * (0.10)	-0.0001 * (0.09)	-0.0001 * (0.09)
R^2	0.022	0.025	0.025	0.014	0.015	0.016
Number of Observations	1043	1043	1043	1051	1051	1051

As part of our robustness check, we redo the analysis using the market model regression to measure the price reaction of the merger proposal at the announcement, instead of market-adjusted abnormal return. Table 3.6 reports trading behavior of both active and passive institutions at the announcement quarter, where CAR is computed

using the market model regression. The implications of the results are the same as those presented earlier in Tables 3.4 and 3.5, where CAR is computed using the market-adjusted abnormal return.

Scenario Analysis

Next we perform scenario analysis at the announcement quarter and one quarter prior to merger resolution on the basis of merger announcement period wealth effect, method of payment, and final outcome of the merger. This allows us to shed light on whether active and passive institutions have informational advantage with regard to the likelihood of merger success and failure and how they utilize the information in rebalancing their portfolio. In order to perform scenario analysis we introduce a dummy variable CAR DUMMY which takes the value 1 if the cumulative abnormal return for the combined firm at merger announcement is positive, and zero otherwise. We refer to the positive abnormal return merger proposals as value increasing proposals and denote them by V+, and the negative abnormal return proposals as value reducing proposals and denote them by V-. We construct interaction variables with CAR DUMMY, CASH DUMMY and SUCCESS DUMMY to perform the scenario analysis. This allows us to investigate the trading behavior of active and passive institutions under different combinations of merger characteristics comprised of announcement period wealth effect, method of payment, and final outcome of the merger.

We present the results of the regression of the scenario analysis in Table 3.7. We also display the effects of the scenario analysis in a node-tree format. Figure 3.1 displays the changes in holdings of acquirer shares by active institutions at the announcement quarter and one quarter prior to merger resolution at different scenarios based on abnormal return of the combined firm at the announcement (V+ vs. V-), method of payment of the merger (CASH vs. STOCK) and eventual outcome of the merger (Success vs. Failure). Figure 3.2 displays changes in holdings of acquirer shares by

Table 3.7: Scenario Analysis of Trading Behavior of Active and Passive Institutions in the Announcement Quarter

The table presents active and passive institutional investors' trading behavior for value increasing proposals vs. value reducing proposals and for cash vs. stock mergers and for successful vs. unsuccessful mergers at announcement quarter and one quarter prior to merger resolution. ANN QTR HOLD CHNG is the dependent variable for announcement quarter analysis, which is aggregate change in institutional holdings of acquirer stock in the announcement quarter. FINAL PREV QTR HOLD CHNG is the dependent variable for the analysis one quarter prior to merger resolution, which is aggregate change in institutional holdings of acquirer stock at the corresponding quarter. All other variables are defined in the Appendix. The second column of the table provides the description of the merger proposals the corresponding coefficient represents. V^+ represents value increasing merger proposals where CAR dummy variable takes the value 1 and V^- represents value reducing merger proposals where CAR dummy variable takes the value 0. Panel A provides the regression results and Panel B provides the results of the combined effect of the interaction variables.

Panel A: Regression Results					
Independent Variable	Captures the effect of	Active Institutions		Passive Institutions	
		Announcement Qtr	1 Qtr Prior to Merger Resolution	Announcement Qtr	1 Qtr Prior to Merger Resolution
INTERCEPT	V^- Stock Failure	0.0186 * (0.09)	0.026 ** (0.02)	0.0025 (0.72)	0.006 (0.40)
CAR DUMMY	V^+ Stock Failure vs. V^- Stock Failure	0.0047 (0.53)	-0.011 (0.18)	0.0046 (0.33)	0.004 (0.37)
CASH DUMMY	V^- Cash Failure vs. V^- Stock Failure	-0.0002 (0.97)	-0.006 (0.48)	-0.007 (0.16)	-0.01 * (0.06)
SUCCESS DUMMY	V^- Stock Success vs. V^- Stock Failure	-0.0043 (0.46)	-0.012 ** (0.04)	-0.0008 (0.83)	-0.002 (0.65)
CAR DUMMY* CASH DUMMY	V^+ Cash Failure vs. V^+ Stock Failure and V^- Cash Failure vs. V^- Stock Failure	-0.0073 (0.49)	0.003 (0.76)	-0.0021 (0.75)	0.001 (0.81)
CAR DUMMY* SUCCESS DUMMY	V^+ Stock Success vs. V^+ Stock Failure and V^- Stock Success vs. V^- Stock Failure	0.0035 (0.66)	0.021 ** (0.01)	-0.0049 (0.33)	-0.002 (0.64)
CASH DUMMY* SUCCESS DUMMY	V^- Cash Success vs. V^- Cash Failure and V^- Stock Success vs. V^- Stock Failure	-0.0006 (0.94)	0.01 (0.31)	0.0071 (0.20)	0.011 ** (0.05)
CAR DUMMY *CASH DUMMY *SUCCESS DUMMY		0.0017 (0.88)	-0.015 (0.21)	0.0016 (0.82)	-0.007 (0.32)
PREV QTR HOLD		-0.0027 (0.57)	0.001 (0.91)	-0.0123 * (0.10)	-0.011 (0.16)
PREV QTR HOLD CHNG		-0.0693 ** (0.02)	-0.049 * (0.10)	0.0284 (0.38)	-0.061 * (0.08)
ACQ LOG ASSET		-0.0011 (0.11)	-0.001 ** (0.04)	-0.0000 (0.99)	-0.001 (0.79)
DEAL VALUE		0.0008 (0.34)	0.002 ** (0.05)	0.0006 (0.25)	0.001 (0.29)
ACQ BOOK TO MKT		-0.0059 (0.13)	-0.006 (0.13)	-0.059 *** (0.01)	-0.007 *** (0.002)
PREV RET 90DAY		-0.0006 (0.81)	-0.005 (0.18)	-0.002 (0.24)	-0.005 *** (0.01)
R^2		0.022	0.026	0.018	0.033
N		1216	1205	1226	1212

Panel B: Combined Effect of the Interaction Variables					
	Captures the Effect of Node	Active Institutions		Passive Institutions	
		Announcement Qtr	1 Qtr Prior to Merger Resolution	Announcement Qtr	1 Qtr Prior to Merger Resolution
INTERCEPT+SUCCESS DUMMY	V^- Stock Success	0.014 (0.16)	0.013 (0.21)	0.0017 (0.79)	0.004 (0.51)
INTERCEPT+CASH DUMMY	V^- Cash Failure	0.018 (0.12)	0.019 (0.11)	-0.0048 (0.51)	-0.004 (0.61)
INTERCEPT+CASH DUMMY +SUCCESS DUMMY +CASH DUMMY *SUCCESS DUMMY	V^- Cash Success	0.013 (0.20)	0.016 (0.13)	0.0018 (0.82)	0.006 (0.40)
INTERCEPT+CAR DUMMY	V^+ Stock Failure	0.023 ** (0.03)	0.015 (0.19)	0.007 (0.29)	0.01 (0.13)
INTERCEPT+CAR DUMMY+SUCCESS DUMMY+CAR DUMMY*SUCCESS DUMMY	V^+ Stock Success	0.022 ** (0.02)	0.023 ** (0.02)	0.0014 (0.82)	0.006 (0.32)
INTERCEPT+CAR DUMMY+CASH DUMMY+CAR DUMMY*CASH DUMMY	V^+ Cash Failure	0.015 (0.14)	0.012 (0.27)	-0.0023 (0.72)	0.002 (0.75)
INTERCEPT+CAR DUMMY+CASH DUMMY+SUCCESS DUMMY+CAR DUMMY*CASH DUMMY+CAR DUMMY*SUCCESS DUMMY+CASH DUMMY*SUCCESS DUMMY+CAR DUMMY*CASH DUMMY*SUCCESS DUMMY	V^+ Cash Success	0.015 (0.11)	0.015 (0.16)	0.001 (0.91)	0.002 (0.76)

passive institutions at the announcement quarter and one quarter prior to merger resolution at different scenarios based on the above mentioned categories. For ease of explanation we refer to Figure 3.1 and Figure 3.2 for interpreting the results. Each node of the tree in Figure 3.1 and 3.2 represents a scenario, where the topmost node represents value increasing cash proposals that are successful mergers and the bottom most node represents value reducing stock proposals that are failed mergers. The remaining nodes are self explanatory. The scenario analysis gives us greater insight with respect to the merger characteristics, as we break down value increasing and value decreasing merger proposals into cash and stock proposals, and further into success and failed mergers.⁵⁸ Results for the announcement quarter in Figure 3.1 indicate that for value increasing stock mergers, active institutions increase their holdings of acquirer stock significantly,

⁵⁸ One could argue that announcement period returns incorporate information on methods of payment - higher for cash deals. However, in our sample, a significant percentage (48%) of stock proposals are value increasing deals and also significant percentage (31%) of cash proposals are value reducing deals. Hence our analysis allows us to shed light on difference in trading between V^+ and V^- deals within a particular method of payment category.

for both the success and the failed cases. For value reducing stock proposals, we observe that active institutions increase holdings significantly only for mergers that failed. This suggests that for value increasing stock proposals, active institutions increase their holdings at announcement quarter without regard to the probable outcome of the merger. On the other hand, for value decreasing stock proposals, active institutions' trading

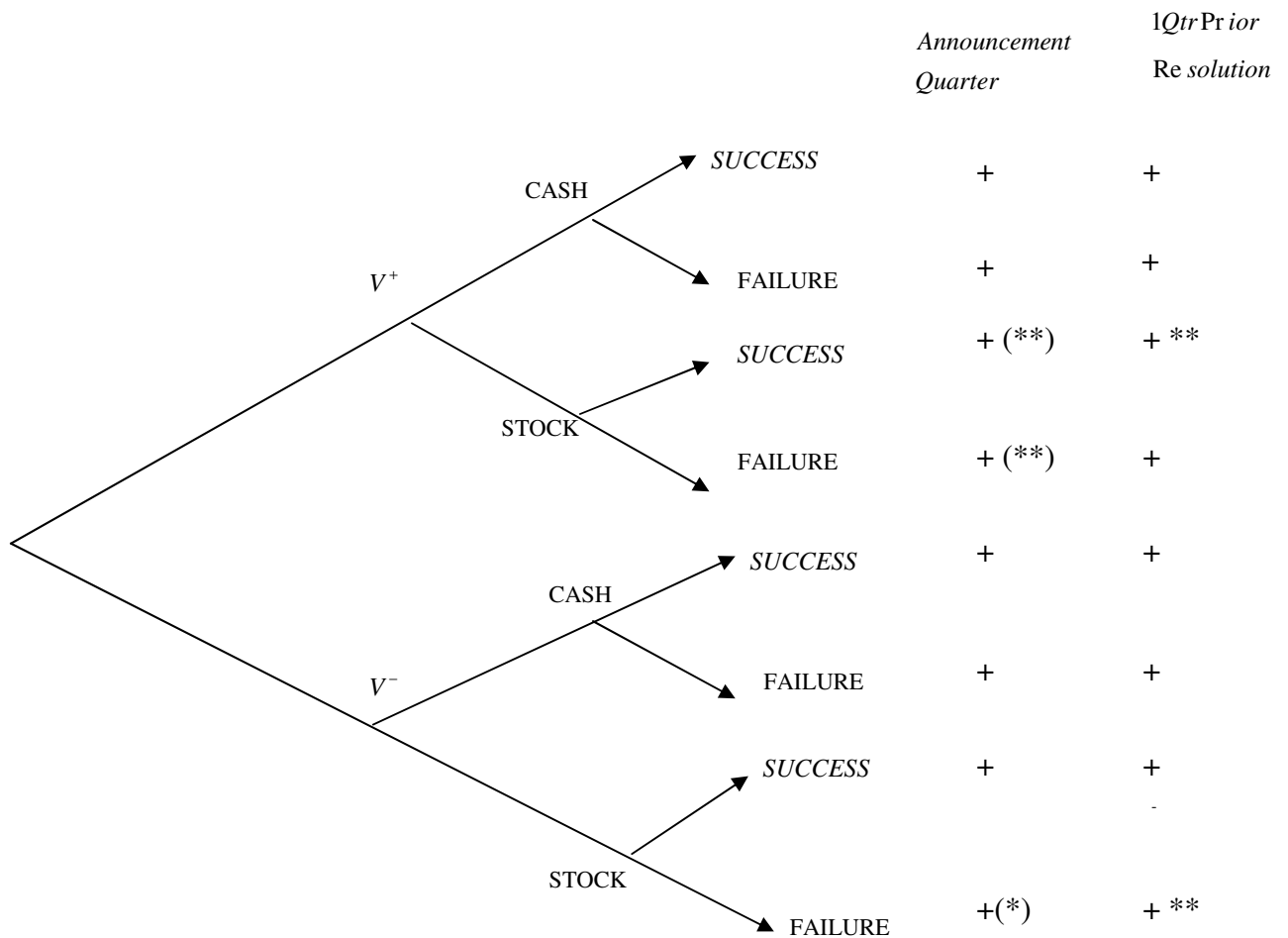


Figure 3.1: Changes in Holdings of Acquirer Shares by Active Institutions

The figure displays the changes in holdings of acquirer shares by active institutions at the announcement quarter and one quarter prior to merger resolution at different scenarios based on abnormal return of the combined firm at the announcement (V+ vs. V-), method of payment of the merger (CASH vs. STOCK) and eventual outcome of the merger (SUCCESS vs. FAILURE). The figure is presented in a form of a tree, where each node of the tree represents a scenario. The positive sign indicates that institutions increase holdings and negative sign indicates that institutions decrease holdings. The significance level at 10%, 5% and 1% are indicated by *, ** and *** respectively.

behavior is influenced by the possible outcome of the merger and they only increase their holdings when merger is likely to fail. Results on one quarter prior to resolution indicate that active institutions continue to engage in informed trading and they only increase their holdings significantly for value increasing stock mergers that are likely to succeed and for value reducing stock mergers that are likely to fail. Hence, these results suggest that active institutions have informational advantage with regard to the probable outcome of

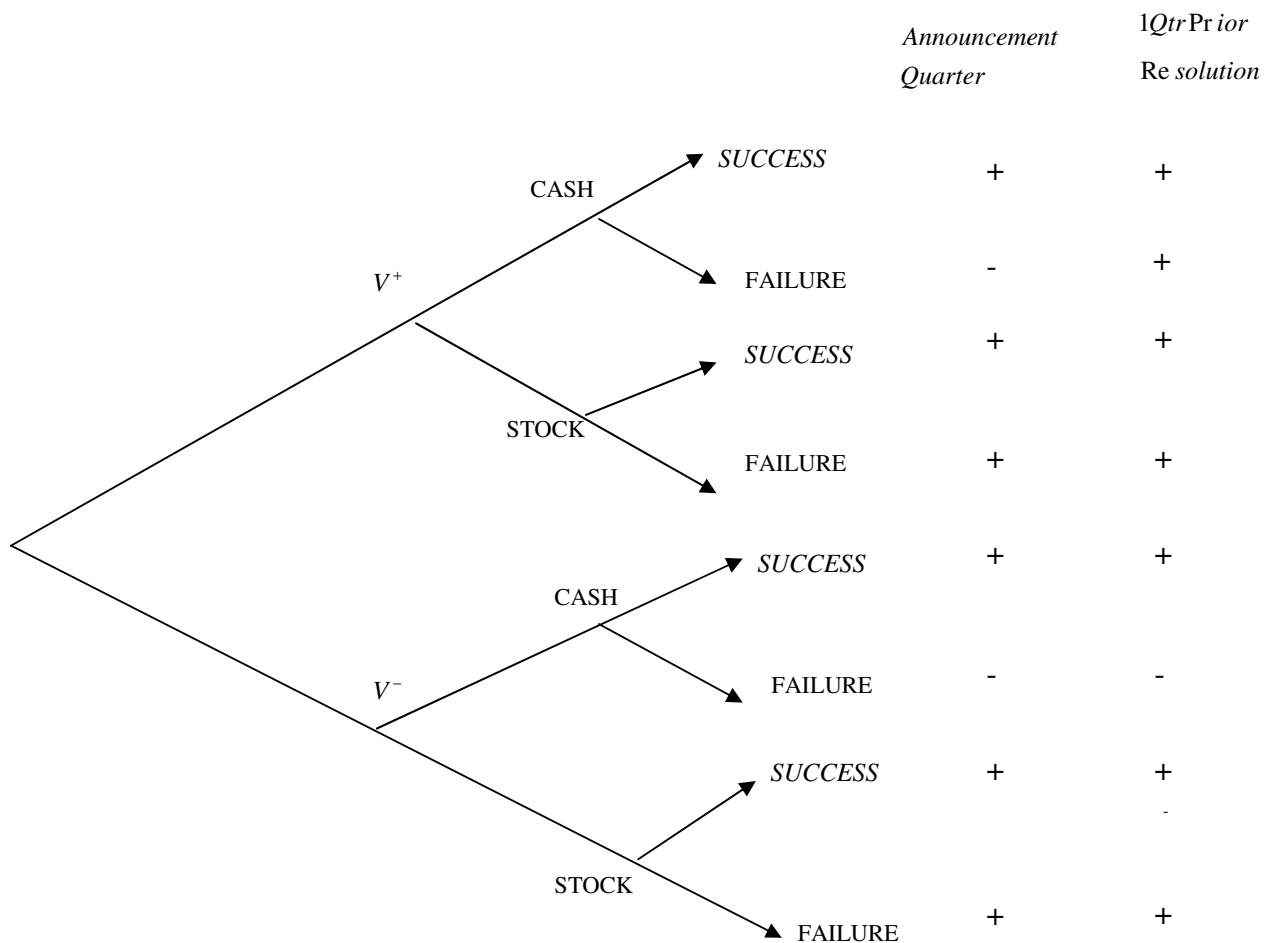


Figure 3.2: Changes in Holdings of Acquirer Shares by Passive Institutions

The figure displays the changes in holdings of acquirer shares by passive institutions at the announcement quarter and one quarter prior to merger resolution at different scenarios based on abnormal return of the combined firm at the announcement (V+ vs. V-), method of payment of the merger (CASH vs. STOCK) and eventual outcome of the merger (SUCCESS vs. FAILURE). The figure is presented in a form of a tree, where each node of the tree represents a scenario. The positive sign indicates that institutions increase holdings and negative sign indicates that institutions decrease holdings. The significance level at 10%, 5% and 1% are indicated by *, ** and *** respectively

the merger prior to merger resolution and that they utilize their superior information vigilantly in trading acquiring firm stocks in case of stock mergers. The nodes representing the cash proposals do not indicate any differential trading behavior, which emphasizes that at the announcement quarter active institutions monitor stock merger proposals more carefully than cash proposals. The behavior of passive institutional investors in different scenarios (presented in Figure 3.2) does not suggest that they possess any superior knowledge about the probable outcome of the merger prior to merger resolution.

B. Trading Behavior of Active and Passive Institutions between Announcement and Resolution and at the Final Resolution Quarter

In this section we investigate the trading behavior of active and passive institutions in the quarters between merger announcement and its final resolution and also at the final resolution quarter. We consider only the successful mergers in our sample for the analysis performed in the final resolution quarter.⁵⁹ By investigating the trading behavior between merger announcement and resolution and at the final resolution quarter we shed light on the issue of whether institutions update their information and beliefs and change their strategies between merger announcement and the final outcome of the merger. First we discuss results that correspond to trading in the quarters between announcement and resolution. Next, we analyze trading of institutions at the final resolution quarter.

To shed light on institutions' information environment between merger announcement and its outcome, we observe their trading in the quarters between merger announcement and final resolution and the results are reported in Table 3.8. Column 1 reports regression results for active institutions and column 2 reports regression results

⁵⁹ Regression analysis on full sample mergers (considering both completed and cancelled deals) at the resolution quarter give similar results.

for passive institutions. The dependent variable is BET ANN TO FINAL HOLD CHNG, which is aggregate change in active (passive) institutional holdings of acquirer stock in the quarters between merger announcement and its completion or cancellation.

Table 3.8: Trading Behavior of Active and Passive Institutions between Announcement and Resolution of Merger

The table presents active and passive institutional investors' trading behavior in the quarters between announcement and resolution of merger proposals for the period 1992-2001. BET ANN TO FINAL HOLD CHNG is the dependent variable, which is the aggregate change in active (passive) institutional holdings of acquirer stock in the quarter between merger announcement and its resolution. CAR is cumulative abnormal return (market adjusted) for the combined firm at the merger announcement for the event window (-1, +1). CASH DUMMY is a dummy variable, which is equal to 1 if the method of payment for the merger proposal is cash and is equal to 0 if the method of payment is stock or a combination of stock and cash. SUCCESS is a dummy variable, which is equal to 1 if the merger is successful and is equal to 0 if the merger is unsuccessful. PREV QTR HOLD represents the aggregate percentage holdings of acquirer stocks by active (passive) institutional investors in the previous quarter before announcement. PREV QTR HOLD CHNG represents the aggregate change in active (passive) institutional holdings of acquirer stock in the quarter prior to merger announcement. ACQ LOG ASSET is the natural logarithm of market capitalization of acquirer stocks at the announcement quarter. DEAL VALUE represents the log dollar value of the merger proposal. ACQ BOOK TO MKT represents the book to market ratio of acquiring firm stock at the announcement quarter. PREV RET 90 DAY represents the buy and hold abnormal return of the acquiring firm over 90 days prior to merger announcement. ***, ** and * denote 1%, 5% and 10% level of significance respectively.

	Dependent Variable: BET ANN TO FINAL HOLD CHNG	
	Active Institutions	Passive Institutions
Intercept	-0.0213 (0.41)	-0.0004 (0.96)
CAR	-0.027 (0.16)	-0.014 (0.12)
CASH DUMMY	-0.002 (0.49)	-0.002 * (0.08)
SUCCESS DUMMY	0.004 (0.35)	0.001 (0.61)
PREV QTR HOLD	-0.003 (0.73)	-0.012 (0.11)
PREV QTR HOLD CHNG	-0.03 (0.60)	0.003 (0.92)
ACQ LOG ASSET	0.0001 (0.92)	-0.0001 (0.88)
DEAL VALUE	0.001 (0.29)	0.001 (0.07)
ACQ BOOK TO MKT	0.007 (0.19)	-0.001 (0.53)
PREV RET 90DAY	-0.01 (0.07)	-0.001 (0.83)
R^2	0.02	0.03
N	580	584

Hence, this reflects changes in holdings between one quarter after announcement and one quarter before resolution. The results indicate that changes in holdings of acquirer stock by active and passive institutions in the quarters between announcement and resolution are not influenced by the announcement period abnormal return CAR. Moreover, CASH DUMMY has insignificant effect on active institutions' trading during the period between announcement and outcome of the merger. Passive institutions display preference for stock mergers as compared to cash mergers during this intermediate period.⁶⁰

We now discuss results at the resolution quarter. Our analysis at the resolution quarter shed light on whether institutions update their beliefs and change their trading strategies as merger approaches its completion. Table 3.9 reports the regression analysis for active institutions at the resolution quarter. The structure of the table is similar to that of Table 3.4. The dependent variable is FINAL QTR HOLD CHNG, which is aggregate change in active institutional holdings of acquirer stock in the resolution quarter of mergers. We observe that CAR continues to have a positive significant effect on the changes of holdings of acquirer stocks by active institutions at the resolution quarter. This suggests that active institutions update their information with regard to the wealth implications of the merger as more information comes into the market and that they resume to trade on the basis of the announcement period wealth effect at the resolution quarter. In model 3, we observe that CASH DUMMY is positive and significant, which implies that at the final resolution quarter active institutions increase holdings of acquirer stocks for cash mergers more as compared to stock mergers. The reversal of sign for CASH DUMMY from negative and significant at the announcement quarter (Table 3.4) to positive and significant at the resolution quarter (Table 3.9) is interesting and warrants a discussion. This reversal can be explained by overreaction and underreaction

⁶⁰ For the analysis performed in the quarters between announcement and outcome of merger, we report the results without the control variables blockholder and insider ownership, as inclusion of these variables reduce the sample size significantly; however they give similar results.

phenomena. We argue that active institutions evaluate stock vs. cash mergers on the basis of their prior beliefs about the firm at the merger announcement. Since stock mergers are mostly overvalued glamour stocks and institutions tilt towards glamour stocks (Lakonishok, Shleifer and Vishny (1994)), the informed institutions overestimate their prior information about the firm and trade on the basis of that at the merger announcement.

For our sample stock mergers, the mean return of the acquirer firm 90 days before the merger announcement is 0.097 (significant), which is higher than the mean return of 0.004 (insignificant) for cash mergers. Moreover, the abnormal return of the combined firm at the merger announcement (-1, +1) is -0.001 (insignificant) for stock mergers and 0.034 (significant) for cash mergers. The abnormal return of the acquirer firm at the merger announcement is -0.033 (significant) for stock mergers and 0.003 (insignificant) for cash mergers. This shows that before merger announcement stock acquirers had a price run up and active institutions overestimate this trend, thereby displaying their preference for stock mergers, ignoring the price reaction at the merger announcement with regard to method of payment of mergers. Active institutions gradually update their beliefs as more public information arrives at the market, and at the final resolution quarter display their preference for cash mergers as compared to stock mergers.⁶¹ The trading behavior of active institutions is consistent with the behavior of “momentum-traders” as presented in Hong and Stein (1999), where momentum traders make transaction based on recent price trends, and since they are unable to assess their position in the momentum cycle, their trading eventually leads to over-reaction.

⁶¹ For our sample mergers, the mean return of the acquirer 90 days after announcement, 90 days before final resolution, 90 days after final resolution and 180 days after final resolution is higher for cash mergers than stock mergers. This suggests that for our sample the cash mergers outperform stock mergers at the announcement as well as between merger announcement and final resolution, as well as after the final resolution.

Table 3.9: Trading Behavior of Active Institutions in the Resolution Quarter: Successful Mergers

The table presents active institutional investors' trading behavior in the resolution quarter for successful mergers for the period 1992-2001. FINAL QTR HOLD CHNG is the dependent variable, which is aggregate change in active institutional holdings of acquirer stock in the resolution quarter of mergers. CAR is cumulative abnormal return (market adjusted) for the combined firm at the merger announcement for the event window (-1, +1). CASH DUMMY is a dummy variable, which is equal to 1 if the method of payment for the merger proposal is cash and is equal to 0 if the method of payment is stock or a combination of stock and cash. PREV QTR HOLD represents the aggregate percentage holdings of acquirer stocks by active institutional investors in the previous quarter before resolution. PREV QTR HOLD CHNG represents the aggregate change in active institutional holdings of acquirer stock in the quarter prior to merger resolution. ACQ LOG ASSET is the natural logarithm of market capitalization of acquirer stocks at the resolution quarter. DEAL VALUE represents the log dollar value of the merger proposal. ACQ BOOK TO MKT represents the book to market ratio of acquiring firm stock at the resolution quarter. PREV 30 DAY FINAL RETURN represents the buy and hold abnormal return of the acquiring firm over 30 days prior to merger resolution. BLOCKHOLDER HOLD represents the percentage holdings of acquiring firm stock by five percent blockholder in the quarter of merger resolution. INSIDER HOLD represents the percentage holdings of acquiring firm stock by corporate insiders in the quarter of merger resolution. Statistical significance at the one, five and ten percent level is indicated by ***, ** and * respectively.

	Model 1	Model 2	Model 3	Model 4
INTERCEPT	-0.0113 (0.43)	-0.0231 (0.16)	-0.0057 (0.69)	-0.0148 (0.37)
CAR	0.0587*** (0.0007)	0.0562 *** (0.002)	0.0412 *** (0.01)	0.0381 ** (0.03)
CASH DUMMY			0.0118*** (<0.0001)	0.0128 *** (<0.0001)
PREV QTR HOLD	-0.0588 *** (0.0001)	-0.0475 *** (<0.0001)	-0.0582 *** (<0.0001)	-0.0464 *** (<0.0001)
PREV QTR HOLD CHNG	-0.177 *** (0.0001)	-0.2207 *** (<0.0001)	-0.1716 *** (<0.0001)	-0.2129 *** (<0.0001)
ACQ LOG ASSET	0.0023 *** (0.01)	0.0023 ** (0.03)	0.0014 (0.16)	0.0012 (0.25)
DEAL VALUE	-0.0027 ** (0.02)	-0.0020 * (0.09)	-0.0017 (0.14)	-0.001 (0.39)
ACQ BOOK TO MKT	-0.0015 (0.78)	0.0067 (0.27)	-0.0071 (0.21)	0.00004 (0.99)
PREV 30 DAY FINAL RETURN	-0.0043 (0.57)	0.0002 (0.97)	-0.0054 (0.47)	-0.0008 (0.91)
BLOCKHOLDER HOLD		0.00004 (0.49)		0.00001 (0.97)
INSIDER HOLD		0.0002 * (0.07)		0.0002 ** (0.02)
R^2	0.11	0.10	0.12	0.12
Number of Observations	1086	934	1086	934

We also observe that the coefficients of PREV QTR HOLD and PREV QTR HOLD CHNG are both negative and significant. The negative coefficient of PREV QTR HOLD implies that active institutions do not increase their holdings at the final quarter, if they already have a high percentage ownership at the previous quarter. The negative coefficient of PREV QTR HOLD CHNG suggests that if active institutions have already increased the holdings of the acquirer firm in the previous quarter, they are unlikely to do the same in the final quarter. These two results are intuitive, as they suggest that institutions that have high ownership concentration in the acquiring firm are more cautious about increasing their holdings. The effect of PREV 30 DAY FINAL RETURN, which represents buy and hold abnormal return of the acquiring firm over 30 days prior to merger resolution, is insignificant. Additionally, we run regression using the buy and hold abnormal return between announcement and final resolution dates and the result remain same.

We now discuss results for passive institutions at the final resolution quarter. These results are presented in Table 3.10. We observe that CAR has positive significant effect on the changes of holdings of acquirer firms at the resolution quarter for passive institutions. This implies that at the resolution quarter, passive institutions increase holdings of acquirer shares significantly as the cumulative abnormal return of the combined firm at the announcement increases. We have observed in Table 3.5 that the effect of CAR is insignificant on the changes of holdings of acquirer shares by passive institutions at the announcement quarter. The results in Table 3.8, reflecting trading in the quarters between merger announcement and its outcome also highlights the fact that passive institutions do not respond to merger announcement period wealth effect. This suggests that passive institutions are indifferent to the merger wealth effect and do not actively engage in portfolio rebalancing activities with respect to the merger wealth implication at the announcement quarter and even in the quarters between merger announcement and its completion. Whereas, at the final resolution quarter their trading

Table 3.10: Trading Behavior of Passive Institutions in the Resolution Quarter: Successful Mergers

The table presents passive institutional investors' trading behavior in the resolution quarter for successful mergers for the period 1992-2001. FINAL QTR HOLD CHNG is the dependent variable, which is aggregate change in passive institutional holdings of acquirer stock in the resolution quarter of mergers. CAR is cumulative abnormal return (market adjusted) for the combined firm at the merger announcement for the event window (-1, +1). CASH DUMMY is a dummy variable, which is equal to 1 if the method of payment for the merger proposal is cash and is equal to 0 if the method of payment is stock or a combination of stock and cash. PREV QTR HOLD represents the aggregate percentage holdings of acquirer stocks by passive institutional investors in the previous quarter before resolution. PREV QTR HOLD CHNG represents the aggregate change in passive institutional holdings of acquirer stock in the quarter prior to merger resolution. ACQ LOG ASSET is the natural logarithm of market capitalization of acquirer stocks at the resolution quarter. DEAL VALUE represents the log dollar value of the merger proposal. ACQ BOOK TO MKT represents the book to market ratio of acquiring firm stock at the resolution quarter. PREV 30 DAY FINAL RETURN represents the buy and hold abnormal return of the acquiring firm over 30 days prior to merger resolution. BLOCKHOLDER HOLD represents the percentage holdings of acquiring firm stock by five percent blockholder in the quarter of merger resolution. INSIDER HOLD represents the percentage holdings of acquiring firm stock by corporate insiders in the quarter of merger resolution. Statistical significance at the one, five and ten percent level is indicated by ***, ** and * respectively.

	Model 1	Model 2	Model 3	Model 4
INTERCEPT	-0.0132 ** (0.03)	-0.0172 ** (0.02)	-0.0125 (0.04)	-0.0162 ** (0.03)
CAR	0.0182 *** (0.01)	0.0171 ** (0.04)	0.0146 * (0.06)	0.0147 * (0.08)
CASH DUMMY			0.0024 ** (0.04)	0.0017 (0.21)
PREV QTR HOLD	-0.0539 *** (<0.0001)	-0.0634 *** (<0.0001)	-0.0554 *** (0.0001)	-0.0642 *** (<0.0001)
PREV QTR HOLD CHNG	-0.1050 *** (<0.0001)	-0.1050 *** (0.0002)	-0.1031 *** (<0.0001)	-0.1034 *** (0.0002)
ACQ LOG ASSET	0.0018 *** (<0.0001)	0.0020 *** (0.001)	0.0016 *** (0.0004)	0.0019 *** (0.0004)
DEAL VALUE	-0.0013 *** (0.01)	-0.0012 (0.03)	-0.0011 ** (0.04)	-0.0011 * (0.06)
ACQ BOOK TO MKT	-0.003 (0.20)	-0.0025 (0.36)	-0.0040 * (0.09)	-0.0034 (0.23)
PREV 30 DAY FINAL RETURN	0.0008 (0.79)	0.0018 (0.62)	0.0007 (0.83)	0.0016 (0.65)
BLOCKHOLDER HOLD		0.00001 (0.77)		0.00001 (0.91)
INSIDER HOLD		0.00003 (0.49)		0.00003 (0.43)
R^2	0.08	0.09	0.08	0.09
Number of Observations	1103	948	1103	948

behavior is largely influenced by the wealth implications created at the announcement. This suggests a strong under-reaction by passive institutions in identifying the wealth created or destroyed by the merger announcement.

The effect of CASH DUMMY is insignificant after controlling for insider and blockholder ownership, which implies that passive institutions trading behavior is not influenced by the method of payment of the merger proposals. We observe that the coefficients of PREV QTR HOLD and PREV QTR HOLD CHNG are both negative and significant for passive institutions. This behavior is similar to that of active institutions and supports the notion that institutions are more cautious in increasing their holdings when they have a higher ownership stake in the company.

We perform additional analysis at the resolution quarter using the market model regression to measure the price reaction of the merger proposal at the announcement, instead of market-adjusted abnormal return. Table 3.11 reports trading behavior of both active and passive institutions at the resolution quarter, where CAR is computed using the market model regression. The implications of the results are the same as those presented earlier in Tables 3.9 and 3.10, where CAR is computed using the market-adjusted abnormal return. Thus our results are robust to the model used to compute the abnormal returns.

In summary, our results indicate that active institutions trade on the basis of recent price trends displaying their support to stock proposals at the announcement quarter. They trade on momentum and since they are unable to assess their position in the momentum cycle, the excessive momentum eventually lead to overreaction. Finally at the resolution quarter active institutions display their aversion for stock proposals. Passive institutions display strong under-reaction at the announcement quarter to the merger announcement period wealth effect. At the final resolution quarter both active and passive institutions utilize their updated information and trade accordingly. These results are consistent with behavioral model for under-reaction and over-reaction presented by

Table 3.11: Trading Behavior of Active and Passive Institutions in the Resolution Quarter for Successful Mergers: Market Model CAR

The table presents active and passive institutional investors' trading behavior in the resolution quarter for successful mergers for the period 1992-2001. FINAL QTR HOLD CHNG is the dependent variable, which is aggregate change in active (passive) institutional holdings of acquirer stock in the resolution quarter of mergers. CAR is cumulative abnormal return (market model) for the combined firm at the merger announcement for the event window (-1, +1). The ordinary least square coefficients of the market model regression are estimated over the period [-244, -6] with respect to the announcement date. CASH DUMMY is a dummy variable, which is equal to 1 if the method of payment for the merger proposal is cash and is equal to 0 if the method of payment is stock or a combination of stock and cash. PREV QTR HOLD represents the aggregate percentage holdings of acquirer stocks by active (passive) institutional investors in the previous quarter before resolution. PREV QTR HOLD CHNG represents the aggregate change in active (passive) institutional holdings of acquirer stock in the quarter prior to merger resolution. ACQ LOG ASSET is the natural logarithm of market capitalization of acquirer stocks at the resolution quarter. DEAL VALUE represents the log dollar value of the merger proposal. ACQ BOOK TO MKT represents the book to market ratio of acquiring firm stock at the resolution quarter. PREV 30 DAY FINAL RETURN represents the buy and hold abnormal return of the acquiring firm over 30 days prior to merger resolution. BLOCKHOLDER HOLD represents the percentage holdings of acquiring firm stock by five percent blockholder in the quarter of merger resolution. INSIDER HOLD represents the percentage holdings of acquiring firm stock by corporate insiders in the quarter of merger resolution. Statistical significance at the one, five and ten percent level is indicated by ***, ** and * respectively.

	Active Institutions		Passive Institutions	
	Model 1	Model 2	Model 1	Model 2
INTERCEPT	-0.024 (0.15)	-0.02 (0.34)	-0.019 (0.01)	-0.018 (0.01)
CAR	0.064 *** (0.0005)	0.046 *** (0.01)	0.019 ** (0.03)	0.017 * (0.06)
CASH DUMMY		0.013 *** (<0.0001)		0.001 (0.29)
PREV QTR HOLD	-0.048 *** (<0.0001)	-0.046 *** (<0.0001)	-0.064 *** (<0.0001)	-0.065 *** (<0.0001)
PREV QTR HOLD CHNG	-0.23 *** (<0.0001)	-0.22 *** (<0.0001)	-0.124 *** (<0.0001)	-0.123 *** (0.0001)
ACQ LOG ASSET	0.002 ** (0.03)	0.001 (0.25)	0.002 *** (<0.0001)	0.002 *** (0.0002)
DEAL VALUE	-0.002 (0.12)	-0.001 (0.45)	-0.001 ** (0.04)	-0.001 * (0.06)
ACQ BOOK TO MKT	0.006 (0.32)	-0.0002 (0.98)	-0.003 (0.34)	-0.003 (0.24)
PREV 30 DAY FINAL RETURN	-0.0003 (0.97)	-0.001 (0.89)	0.001 (0.72)	0.001 (0.74)
BLOCKHOLDER HOLD	0.00004 (0.53)	-0.00001 (0.98)	0.00001 (0.69)	0.00001 (0.81)
INSIDER HOLD	0.0002 * (0.06)	0.0002 ** (0.02)	0.00003 (0.43)	0.00003 (0.39)
R^2	0.11	0.12	0.09	0.09
Number of Observations	922	922	932	932

Hong and Stein (1999), which is based on gradual diffusion of information. The model presents two types of agents: “news-watchers” and “momentum-traders.” Both types of agents possess bounded rationality, indicating that they are only able to process some subset of available information. News-watchers are unable to draw inference from current or past price and trade based on fundamentals, causing under-reaction. Momentum traders make transaction based on recent price trends, causing over-reaction. The trading behavior of institutions therefore suggest that in the context of mergers, passive institutions behave more like “news-watchers” and active institutions reflect upon “momentum-traders.”

C. Additional Tests

In order to differentiate the trading of institutions before and after the final effective date, we construct one sub-sample with resolution date in the first week of each quarter and another sub-sample with the resolution date in the last week of each quarter.⁶² We argue that for the first week of quarter sub-sample, the reported change in holdings by institutions is likely to correspond to the portfolio adjustment in the later part of the quarter and hence after the effective date. Similarly, for the last week of the quarter sub-sample, the reported change in holdings by institutions is likely to correspond to the portfolio adjustment before the effective date. The effect of CAR on changes of holdings of active and passive institutions at the final resolution quarter with regard to these sub-sample data is reported in Panel A of Table 3.12. Our results on sub-sample with the first week of each quarter show that CAR has positive and insignificant effect (coefficient 0.004 and p-value 0.94) on changes of holdings of acquirer stocks by active institutions. Moreover, the results on sub-sample with last week of each quarter show that CAR has positive significant effect (coefficient 0.172 and p-value 0.02) on changes of holdings by active institutions. Thus, these results suggest that active institutions continue to trade on

⁶² Sub-sample analysis with resolution dates within first three days of each quarter and last three days of each quarter also give similar results.

the basis of announcement period abnormal return up until the final resolution date. However, they do not change holdings of acquiring stocks on the basis of merger wealth implications after the final resolution date.

Table 3.12: Sub-sample Analysis: Changes of Holdings of Acquiring Stocks by Active and Passive Institutions in Resolution Quarter

This table reports effect of CAR and CASH DUMMY variable on changes of holdings of acquiring stocks by active and passive institutions in resolution quarter in two sub-samples with respect to resolution dates. Panel A, reports effect of CAR on changes of holdings of active and passive institutions at the final resolution quarter for one sub-sample with resolution date in the first week of each quarter and another sub-sample with the resolution date in the last week of each quarter. Panel B, reports effect of CASH DUMMY on changes of holdings of active and passive institutions at the final resolution quarter for one sub-sample with resolution date in the first week of each quarter and another sub-sample with the resolution date in the last week of each quarter. CAR is cumulative abnormal return (market adjusted) for the combined firm at the merger announcement for the event window (-1, +1). CASH DUMMY is a dummy variable, which is equal to 1 if the method of payment for the merger proposal is cash and is equal to 0 if the method of payment is stock or a combination of stock and cash. FINAL QTR HOLD CHNG is the dependent variable, which is aggregate change in institutional holdings of acquirer stock in the resolution quarter of mergers.

Panel A: Effect of CAR on changes of holdings of institutions at the final quarter		
	Dependent Variable: FINAL QTR HOLD CHNG	
	Sub-sample with Resolution Date in First Week of Each Quarter	Sub-sample with Resolution Date in Last Week of Each Quarter
Active Institutions	0.004 (0.94)	0.172 (0.02)
Passive Institutions	0.011 (0.76)	-0.015 (0.46)

Panel B: Effect of CASH DUMMY on changes of holdings of institutions at the final quarter		
	Dependent Variable: FINAL QTR HOLD CHNG	
	Sub-sample with Resolution Date in First Week of Each Quarter	Sub-sample with Resolution Date in Last Week of Each Quarter
Active Institutions	0.018 (0.01)	0.016 (0.11)
Passive Institutions	0.001 (0.91)	0.002 (0.61)

We have observed in Table 3.8 that active institutions' trading in the quarters between merger announcement and final resolution is not influenced by merger announcement period abnormal return. The results show that CAR has negative

insignificant effect (coefficient (-0.027) and p-value 0.16) on changes of holdings by active institutions in the quarters between merger announcement and final resolution. Hence, these results suggest that between the quarters of merger announcement to its completion, active institutions' trading is not influenced by the announcement period abnormal return. However, at the resolution quarter right before the completion of merger, active institutions resume to trade on the basis of merger wealth effect captured by CAR.

Similar to active institutions, we attempt to disentangle the trading of passive institutions before and after the final effective date by performing sub-sample analysis and these results are also reported in Table 3.12. Our results on sub-sample with the first week of each quarter show that CAR has positive and insignificant effect (coefficient 0.011 and p-value 0.76) on changes of holdings of acquirer stocks by passive institutions. Moreover, the results on sub-sample with last week of each quarter show that CAR has negative insignificant effect (coefficient (-0.015) and p-value 0.46). The full sample results, discussed in section B (Table 3.10) show that trading by passive institutions in the resolution quarter is influenced by the merger announcement period wealth effect captured by CAR. Hence, in the resolution quarter, trading by passive institutions on the basis of merger wealth effect seems to be occurring both before and after the resolution date. To shed light on passive institutions' information environment between announcement and final resolution, we observed passive institutions' trading in the quarters between merger announcement and final resolution in Table 3.8. The results show that changes in holdings of acquiring stock by passive institutions in the quarters between merger announcement and final resolution has negative and insignificant relation with CAR (coefficient (-0.014) and p-value 0.12). Hence, relating these results with that of the results obtained at the resolution quarter, we can argue that passive institutions' response to merger announcement period wealth effect seem to be occurring near the completion of merger.

The effect of CASH DUMMY on changes of holdings of acquiring firm stocks by active and passive institutions before and after the final effective date is observed also by performing sub-sample analysis and these results are reported in Panel B of Table 3.12. For the sub-sample with resolution date in first week of quarter, the effect of CASH DUMMY on changes of holdings by active institutions is positive and significant (coefficient 0.018 and p-value 0.01). Moreover, for the sub-sample with resolution date in the last week of quarter, the effect of CASH DUMMY is positive and insignificant. For the first week of quarter sub-sample, the reported change in holdings by institutions is likely to correspond to the portfolio adjustment in the later part of the quarter and hence after the effective date. Similarly, for the last week of the quarter sub-sample, the reported change in holdings by institutions is likely to correspond to the portfolio adjustment before the effective date. Hence, we can argue from the results in Panel B of Table 3.12 that active institutions show their preference for cash acquirers only after the merger effective date. The results for passive institutions do not indicate any preference for cash over stock acquirers for the sub-sample tests.

Moeller, Schlingemann and Stulz (2005) document that acquiring firms had massive shareholder wealth losses during 1998-2001. We introduce a year dummy for the period 1998-2001 in our regression analysis, to investigate the effect of the years with huge negative shareholders' wealth implications. The effect of the year dummy (1998-2001) at the announcement quarter is negative and significant (p-value 0.03) for active institutions and positive and insignificant for passive institutions. All other effects remain unchanged. This emphasizes that active institutions are more vigilant at the announcement quarter in their response to the wealth implications created by mergers as compared to passive institutions. At the resolution quarter the effect of the year dummy is negative and significant for both active and passive institutions. This change in sign of the year dummy for passive institutions from announcement to resolution quarter again

emphasizes passive institutions' underreaction phenomenon. These results are not presented in table and are available upon request.

We also run regressions using the final event (-1, +1) return of the acquiring firm instead of the announcement period abnormal return CAR. The results show that the effect of resolution date return on changes in holdings at the resolution quarter is positive and insignificant for both active and passive institutions. This is not surprising as most of the value implications of the merger announcement are captured by the market at the time of the announcement.⁶³

C. Robustness Checks

In this section, we present and discuss the robustness of our results to alternative specifications and interpretations. As part of our robustness checks we perform a sub-sample analysis for the years 1991-1997. The selection of the sub-sample period is due to the fact that the identification of the institutions for the year 1998 and beyond is not properly done in CDA-Spectrum 13f filings institutional holdings data. Our results (not reported in table) for both active and passive institutions remain unchanged for the announcement quarter as well as for the resolution quarter for the sub-sample period 1991-1997.

We perform regression analysis using only the acquirer announcement period abnormal return as a measure of wealth implication of the acquiring firm instead of the combined announcement period abnormal return. The results support active institutions' immediate response to acquiring firms' wealth effect at the announcement. The underreaction phenomenon with regard to announcement period wealth effect holds for passive institutions when acquiring firm abnormal return is used. Active institutions' overreaction to stock proposals at the announcement quarter also holds, although the effect weakens after controlling for blockholder and insider holdings. The results at the

⁶³ These results are available on request

resolution quarter using acquiring firms' abnormal returns are similar to that of the results presented earlier using abnormal return of the combined firms. The results at the resolution quarter therefore indicate that both active and passive institutions continue to trade on the basis of wealth implications of the merger at the announcement. Moreover, both the institutions display their preference for cash mergers at the resolution quarter, thereby indicating delayed reaction to the cash proposals.

We perform additional tests by including "Other Institutions" which are type 5 in the CDA Spectrum 13-f filings. In our main analysis we exclude type 5, as this category is not distinct and it is a mixture of both active and passive institutions. As part of our robustness checks we include type 5 in both active and passive institutions category and observe how it affects our main results. The results suggest that for active institutions the overreaction phenomenon holds, with regard to stock vs. cash proposals, even when "Other Institutions" are included in this category. Also the results support active institutions' immediate response to merger wealth effects with the new defined category. When type 5 is included with Passive institutions, they do not respond to the wealth effect of merger proposals at the announcement and at the resolution quarter. Also, they show similar response to cash and stock proposals as that of active institutions' at both announcement and resolution quarter. Thus in response to merger proposals the "Other" category institutions behave more like active institutions. These results are available upon request.

3.5. Conclusions

We investigate institutional investors' holdings and trading behavior of acquiring firm stocks in response to merger announcements. We categorize institutions into two groups. The first group of institutions consists of investment companies and independent investment advisors and we term these active institutions. The second group of institutions consists of banks and insurance companies and we term these passive

institutions. We analyze the trading behavior of active and passive institutions surrounding merger announcements and their eventual resolutions.

We observe significant differences in trading strategies between active and passive institutions. Our results reveal that, at the announcement quarter, trading behavior of active institutions is largely influenced by merger characteristics and market response to the merger announcement. Active institutions significantly increase their holdings of acquiring firm stocks for mergers that have higher wealth effect at the announcement. This emphasizes that active institutions have superior skill to identify mergers with higher wealth implications. The results also indicate that active institutions prefer stock proposals at the merger announcement on the basis of its recent price trend and disregard the negative wealth implications of stock proposals at the announcement. This behavior is explained by the overreaction phenomenon that investors are overconfident in their abilities to select stocks and that they overestimate their private signals of the stocks, thereby displaying overreaction. Our results further suggest that active institutions update their information between announcement and final resolution as more information arrives into the market. Finally active institutions make corrections for their overreaction behavior at the resolution quarter by displaying their aversion to stock proposals. The trading behavior of active institutions is consistent with “momentum-traders” as presented in Hong and Stein (1999). Momentum traders make transaction based on recent price trends, and since they are unable to assess their entry point into the momentum cycle, excessive momentum eventually lead to over-reaction. The scenario analysis at the announcement with respect to merger wealth effect, method of payment, and probable final outcome of the merger reveals that active institutions are better informed with regard to the likelihood of the merger success.

We find that, at the announcement quarter, passive institutions are indifferent to the market response of the merger announcement. However, at the final resolution, they update their beliefs and increase holdings of acquiring firm stocks for merger proposals

that had a positive market response at the announcement. This suggests a strong under-reaction in passive institutions' trading strategy. In the light of behavioral model presented by Hong and Stein (1999), passive institutions behave more like "news-watchers," who are unable to draw inference from stock price and display under-reaction due to gradual diffusion of information. The results also do not indicate that passive institutions have informational advantage in assessing the probable outcome of the merger.

In summary, our results suggest distinct trading behavior between active and passive institutions surrounding merger activities. Active institutions' response to the merger wealth implications is immediate, whereas passive institutions respond to the wealth effect with a delay. This difference in their response could be explained by the notion that there are differences in employee expertise between these two types of institutions. The evidence also indicates that there are behavioral aspects in both active and passive institutions' trading. Active institutions display behavior consistent with investor overreaction, which they seem to correct as more information is released into the market. Passive institutions display under-reaction in responding to the merger wealth effect. Furthermore, active institutions seem to have informational advantage with regard to the likelihood of the merger outcome.

CHAPTER 4

CHANGES IN TAKEOVER DEFENSE MECHANISMS AND EXECUTIVE COMPENSATION

4.1. Introduction

Market for corporate control is considered to be an external monitoring mechanism to discipline managers and reduce the agency problem. Various studies have examined the effectiveness of this monitoring mechanism with regard to different corporate decisions and its interaction with other forms of governance mechanisms.⁶⁴ In this paper, we examine the extent to which the market for corporate control influence one of the most important and debatable corporate decisions – executive compensation.⁶⁵ We investigate two primary questions: First whether executive compensation structure depends on the level of external monitoring mechanism represented by existing anti-takeover provisions of the firm. In particular, we examine whether managerial power in firms with high level of anti-takeover provisions (ATP) contribute in establishing higher compensation for executives. Second, we examine whether changes in takeover vulnerability cause any subsequent changes in executive compensation structure. That is, whether executive

⁶⁴ Mikkelsen and Partch (1997) show that CEOs are more likely to be replaced when hostile takeover activity is high, supporting managerial entrenchment argument. Hadlock and Lumer (1997) show that relation between firm performance and executive turnover is weaker when threat of takeover is low. Huson, Parrino, and Starks (2001) find that changes in intensity in takeover market do not influence relation between CEO turnover and firm performance. Masulis, Wang, and Xie (2006) show that managers in firms with higher ATPs are more likely to engage in acquisitions for empire building, as they are less likely to be disciplined by the takeover market. Cremers and Nair (2005) show that market for corporate control and shareholder activism are complementary to each other and results in long-term abnormal returns and profitability of firms. Supporting the view of enhanced bargaining effect of takeover defense mechanisms, Cotter, Shivdasani, and Zenner (1997) show that independent boards use anti-takeover provisions to the advantage of target shareholders than other boards. Comment and Schwert (1995) also find that anti-takeover measures increase bid premia. Ashraf, Chakrabarti, Fu, and Jayaraman (2007) find directors in firms with weak external monitoring mechanisms are more likely to lose board positions and also directors approving increase in anti-takeover provisions are more likely to lose their seats

⁶⁵ Surveys on executive compensation include, Bebchuk, Fired, and Walker (2002), Perry and Zenner (2000), Abowd and Kaplan (1999), and Murphy (1999).

compensation structure gets adjusted with changes in managerial power resulting from changes in anti-takeover provisions of the firm.

Two competing views exist that relate executive compensation to agency problem. Under the “Efficient Compensation Contracting,” board of directors aligns managers and shareholders’ interests by incentive driven optimal executive compensation structure. According to this approach executive compensation scheme resolve agency problems, at least partially. The “Managerial Entrenchment” on the other hand considers executive compensation as part of the agency problem itself. Bebchuk, Fried, and Walker (2002) argue that higher managerial power from management entrenchment play a role in resulting executive compensation structure deviate from optimal contracting and generating higher rents for executives.⁶⁶ The authors further argue that in order to camouflage the extraction of rents, managerial power results in establishing inefficient pay structure which lead to destruction of shareholders’ wealth.⁶⁷ The authors state that higher managerial power would lead to higher pay and less pay-for-performance sensitivity of executive compensation schemes.⁶⁸ Considering external disciplining mechanism – market for corporate control, managers in a firm with higher level of anti-takeover provisions are likely to be less vulnerable to hostile takeover and more likely to be entrenched; therefore higher managerial power would play a significant role in the design of compensation schemes of executives in those firms.⁶⁹

Contrary to the managerial entrenchment hypothesis, Knoeber (1986) provides a theory arguing that anti-takeover provisions reduce the likelihood of executives losing

⁶⁶ Other studies providing similar argument are: Yermack (1997), Bertrand and Mullainathan (2001)

⁶⁷ The authors acknowledge that managerial power approach is not a substitute for the optimal contracting approach. Rather, the compensation practices are likely to be influenced by both phenomenon, which eventually results in deviation from the optimal outcome causing by the managerial power approach.

⁶⁸ Bertrand and Mullainathan (2000) examine the effect of corporate governance on CEO pay and compare efficient contracting hypothesis with managerial entrenchment hypothesis. They argue that managerial power influence CEO pay structure in poor governed firms; whereas, efficient contract seem to fit better in well governed firms.

⁶⁹ We use the phrases “managerial power” and “management entrenchment” interchangeably through out the paper.

their jobs, and therefore an efficient contracting can be achieved by allowing the compensation to be deferred until performance of the manager can be better evaluated.⁷⁰ According to this “Efficient Compensation Contracting Hypothesis” manager at firms with high ATP will receive lower current compensation as compared to managers in firms with low ATP, since managers in firms with high ATP face low risk of not receiving the deferred compensation due to low probability of takeover.⁷¹ Contradicting this argument, Borokhovich, Brunarski, and Parrino (1997) show that firms adopting anti-takeover provisions such as fair price and supermajority charter amendments pay higher executive compensation before the adoption of the provisions and also experience an increase in compensation after the adoption. Their results support the “Entrenchment Hypothesis,” which suggests that managerial power in high ATP firms may result in generating higher compensation for executives deviating from efficient contract. They examine proposed amendments of 129 firms over the sample period of 1979-1987, assuming that all of the proposed amendments have been implemented. Their study considers only two ATP provisions (fair price and supermajority charter amendments) that are proposed for implementation and also the study does not incorporate the existing ATP which will have an influence over the executive compensation structure. Moreover, the study is unable to address whether executive compensation contract differs between firms that increase anti-takeover provisions as compared to firms that eliminate such provisions.

⁷⁰ This line of research relates to the long-term contracting theory described by DeAngelo and Rice (1983), where authors argue that ATP reduce the risk of managers to undertake long-term profitable investments that may appear to be unprofitable to investors initially. Hence, ATP protects managers from risk of losing firm specific human capital due to takeover before the true value of such long-term profitable investments is revealed. Stein (1988) argues that ATP provisions increase the likelihood of long-term investment projects to be implemented and shareholders are likely to observe the true value of these projects due to low probability of takeover.

⁷¹ Agarwal and Knoeber (1996) show that an increase in the threat of takeover (measured by the relative frequency of acquisitions in the same industry of the firm) has a positive effect on managerial compensation.

Our study extends this line of research by examining the relation of compensation structure with regard to variation of the existing anti-takeover provisions of firms. In particular, we examine whether management power plays a role in generating higher rents for executives in firms with higher level of existing ATP, or whether higher ATP results in efficient contracting by deferring executives pay in future. We also address whether changes in takeover vulnerability cause any subsequent changes in executive compensation structure. If a firm increases its takeover vulnerability by eliminating existing anti-takeover provisions, whether that cause any subsequent changes of compensation structure. Conversely, we test whether implementing additional anti-takeover provisions effect future pay structure of executives. While considering the changes in takeover vulnerability, we take into account the existing anti-takeover provisions of the firms. In particular, we examine whether the effect of changes in takeover vulnerability on executive pay structure differs between firms with varying management power. By separating out increase and decrease in takeover vulnerability with respect to existing anti-takeover provisions of the firms, we are able to understand the extend to which management power play a role in determining pay structure of executives and how it interacts with the efficient contracting phenomenon.

We use the Gompers, Ishii, and Metrick (2003) governance score (GIM Index) of the firm in the year of the proposal as a measure of anti-takeover provisions of firms. The construction of the score predominantly considers anti-takeover provisions and hence the measure is accepted as an anti-takeover provision (ATP) rather than a representation of the overall governance of the firm. Gompers, Ishii, and Metrick (2003) document that the index is negatively related to firm value and stock return.⁷² The GIM index is constructed by 24 anti-takeover provisions published by the Investor Responsibility Research Center

⁷² A debate surrounds around the causal link between GIM index and equity price. However, there is growing empirical evidence that corporate governance can substantially increase shareholder value. See Becht, Bolton, and Roell (2002) for an overview of corporate governance.

(IRRC), giving each provision equal weight. Bebchuk, Cohen, and Ferrell (2004) provide an entrenchment index (BCF Index) based on six provisions among the 24 that have negative valuation consequences in firms, both individually and at the aggregate level. These six provisions are: classified boards, poison pills, golden parachutes, limit to amend by-laws, and supermajority requirements for mergers and charter amendments. We use both GIM and BCF indices as a proxy for anti-takeover measures, where higher value of both the indices indicate higher existing anti-takeover provisions and hence low takeover vulnerability of the firm. We also identify changes of GIM and BCF index and how they influence level of executive compensation.

Our results can be summarized as follows. We find firms with high ATP provide higher level of compensation to executives as compared to firms with low ATP. Moreover, the pay-for-performance sensitivity is lower in firms with high ATP, although the effect is weak. Hence, with regard to existing anti-takeover provisions, firms which are likely to be less disciplined by the takeover market have higher pay structure for the executives. Therefore, the results are consistent with the entrenchment hypothesis, which argue that higher managerial power would lead to higher pay for executives. This emphasizes that market for corporate control act as a disciplining mechanism in reducing conflict of interests between management and shareholders with regard to executive compensation issues.

We next examine the effect of changes in takeover vulnerability on level and subsequent changes on executive pay structure. The results on effect of changes of ATP on executive compensation contradict the results presented by Borokhovich, Brunarski, and Parrino (1997). We find that increase in anti-takeover provisions of a firm leads to decrease in cash and total compensation of executives, but has no effect on pay-for-performance sensitivity. A firm that undergoes eliminating some existing anti-takeover provisions provides higher total compensation to executives following the changes in

ATP. Moreover, decrease in ATP has a positive significant effect on percentage change in cash and total compensation.

With regard to changes in takeover vulnerability, our results are consistent with the “Efficient Compensation Contracting Hypothesis” suggested by Knoeber (1986). An increase in the level of takeover vulnerability of a firm would result in higher likelihood of losing deferred compensation by managers due to higher risk of hostile takeover, and thereby causing an increase in current compensation. With an increase in ATP, managers are less likely to lose their firm specific human capital due to hostile takeover and more likely to receive the deferred compensation and therefore accept lower current compensation. However, these results seem not to be driven by firms strong in shareholder rights. Low ATP firms display entrenchment phenomenon by decrease in both cash and total compensation when firm eliminate some existing ATP and increase in cash compensation when firm incorporate additional ATP. We argue that when changes in ATP occur in firms with lower shareholder rights (high ATP firms), management power play a role in settling up a compensation contract which protects them from the risk of not receiving deferred compensation. According to Knoeber (1986), ATP itself acts as a disciplinary mechanism in achieving efficient compensation contract by having lower compensation in high ATP firms. Contradicting this view, our results indicate that management entrenchment contribute in obtaining such a contract as a means of securing them from losing deferred compensation.

The results further indicate that the pay-for-performance sensitivity is higher for firms that experience increases in takeover vulnerability. However, firms that undergo decreases in takeover vulnerability do not display any significant effect over pay-for-performance sensitivity. This implies that when a firm moves from lower shareholder rights to higher shareholder rights regime, it establishes executive compensation schemes that are aligned with performance more. This relation is mainly driven by the firms which

already have higher shareholder rights to begin with, although this is not consistent across different specifications of managerial power.

The rest of the paper is organized as follows. In Section 4.2, we describe the data. In Section 4.3, we analyze the effect of existing level of anti-takeover provisions on executive compensation structure. In Section 4.4, we examine the effect of changes in takeover vulnerability of a firm over executive compensation schemes. Finally, Section 4.5 provides the conclusion.

4.2. Data

4.2.1. Executive Compensation Data

Executive compensation data is obtained from ExecuComp database for the sample year 1992-2005. We construct the following variable for each executive: CASH COMPENSATION_{*t*} represents salary plus bonus of executive for the year *t*. % Δ CASH COMPENSATION_{*t*} is the percentage change in cash compensation in year *t* compared to previous year (*t-1*). TOTAL COMPENSATION_{*t*} represents total compensation of executive comprising of salary, bonus, option grants, and other compensation. % Δ TOTAL COMPENSATION_{*t*} is the percentage change in total compensation in year *t* compared to previous year (*t-1*). PAY FOR PERFORMANCE_{*t*} is computed by dividing the value of options granted to the executive by the shareholder wealth at the year *t*. Following Yermack (1995) we represent pay-for-performance sensitivity as sensitivity of option grant per dollar change in share value. This is calculated by first computing the “delta” of option grant (which is the partial derivative of the Black Scholes formula with respect to stock price, $\partial(\text{BlackScholesValue})/\partial P$). Pay-for-performance sensitivity is computed by multiplying delta by the fraction of the equity represented by the option award, which is number of options granted divided by number of shares outstanding at the beginning of the year. This provides the change in value of executive option grant for

every dollar change in share value. Hartzell and Starks (2003) also use similar measures to examine institutional investor monitoring role with regard to executive compensation. The authors note that none of these measures take into consideration the changes in wealth of executives in association with changes in portfolio holdings of existing stocks and options. The authors further mention that current compensation is a good representation of compensation structure which board controls. Other studies using similar measure include: Core and Guay (1999), Guay (1999), Coles, Daniel, and Naveen (2003).⁷³

4.2.2. Construction of Proxy for Takeover Vulnerability

As a proxy for takeover vulnerability we use the anti-takeover provisions (ATP) incorporated by the firms.⁷⁴ Higher anti-takeover provisions (ATP) imply higher resistance for market for corporate control. Hence, these firms are more likely to have entrenched management, as they are less likely to be disciplined by the takeover market.⁷⁵ We use the Gompers, Ishii, and Metrick (2003) governance score of the firm in the year of the proposal as a measure of anti-takeover provisions of firms. Although being widely used in the recent literature, the Gompers-Ishii-Metrick (GIM) governance score is receiving a lot of criticism among the finance academics. The debate centers on whether this score truly measures the governance structure of a firm. The construction of the score predominantly considers anti-takeover provisions and hence the measure is accepted as an anti-takeover provision (ATP). According to the measure, firms with a higher GIM score have higher “management control” and lower “shareholder rights.” The GIM index is constructed by 24 anti-takeover provisions published by Investor

⁷³ We thank Lalitha Naveen for providing us the data for delta.

⁷⁴ Coates (2000) and Bhagat and Romano (2001) provide a survey of the literature regarding takeover defenses.

⁷⁵ Another competing argument is that higher ATP increase bargaining power of target board. However, the literature suggests that managerial entrenchment dominates the enhanced bargaining effect (Becht, Bolton, and Roell (2002)).

Responsibility Research Center (IRRC), giving each provision equal weight. GIM index can take values from 0 to 24, adding one for each of the 24 anti-takeover provisions a firm incorporates. Therefore, a higher value of GIM index implies firms with higher ATPs and therefore higher resistance for market for corporate control and high in managerial power. The study documents that the GIM index is negatively related to firm value and stock return. Bebchuk, Cohen, and Ferrell (2004) argue that not all 24 IRRC provisions contribute equally to the negative correlation between GIM index and firm value. They identify six provisions among the 24 that reduce shareholders' protection: classified boards, poison pills, golden parachutes, limit to amend by-laws, and supermajority requirements for mergers and charter amendments. The authors provide an entrenchment index (BCF) based on these six provisions and show that they have negative valuation consequences in firms, both individually and at the aggregate level. The authors further state that the other 18 provisions are not significantly negatively correlated with firm value. The BCF index can take values from 0 to 6, adding one for each of the six anti-takeover provisions a firm incorporates. Similar to GIM index, a higher value of BCF index implies firms with higher ATPs and therefore high in managerial power. Both GIM and BCF index values are available for the years 1990, 1993, 1995, 1998, 2000, 2002, and 2004 (IRRC published years).

A new body of research has emerged on the basis of GIM and BCF indices. Using the GIM index, Masulis, Wang, and Xie (2006) show that the conflict of interest between managers and shareholders is more severe at firms with higher ATPs. They argue that managers in firms with higher ATPs are more likely to engage in acquisitions for empire building, as they are less likely to be disciplined by the market for corporate control. Cremers and Nair (2005) investigate how the market for corporate control, which is the external governance mechanism, interacts with shareholder activism, which is the internal governance mechanism. They show that external and internal governance mechanisms complement to each other, which results in long-term abnormal returns and profitability

of firms. They use percentage of share ownership by public pension funds and by the largest blockholders as the proxy for the internal governance mechanism. As a proxy for the external governance mechanism they use the anti-takeover provisions (ATP) incorporated by the firms, represented by GIM index. Using GIM index as a measure of managerial entrenchment, Fisman, Khurana, and Rhodes-Kropf (2005) find that entrenchment is negatively correlated with likelihood of firing and positively correlated with the market response to announcement of firing. Moreover, they find that firing of entrenched CEO lead to improved operating performance. Knyazeva (2006) use firms' GIM index to represent poorly governed managers and find that poorly governed managers show fewer dividend cuts and engage in dividend smoothing.

4.2.3. Descriptive Statistics

Table 4.1 presents descriptive statistics of the sample firm for the period 1992 to 2005. GIM Index is the Gompers-Ishii-Metirck governance measure of the firm. BCF index is the Bebchuk-Cohen-Ferrell governance measure of the firm. CASH COMPENSATION represents salary plus bonus of executives in thousands of dollars. TOTAL COMPENSATION represents total compensation of executives comprising of salary, bonus, option grants, and other compensation in thousands of dollars. OPTION GRANTS is the total options granted to executives in thousands of dollars. Aggregate firm level compensations are reported. AGGREG ALL INST HOLD represents the aggregate holdings of sample firms by all institutional investors. AGGERG 5-PERC INST represents aggregate holdings of institutions with 5-percent or more holdings. LAG ONE YEAR ABN RETURN is the one-year lag buy-and-hold abnormal return of the sample firms. SIZE is the total market capitalization of company's stocks. We observe that the mean of GIM index is 9.07 with median value equal to 9.0. The mean of BCF index is 2.36 with median value equal to 2.0. The mean of aggregate cash compensation of executives is \$4.3 million and mean of aggregate total compensation is \$14.08 million.

The mean of total institutional hold of the sample firm is 62.4%. The mean of size of the firm is \$5.4 billion with median value \$1.1 billion.

Table 4.1: Descriptive Statistics of Sample Firms

The table provides the descriptive statistics of the sample firms for the sample years 1992-2005. GIM Index is the Gompers-Ishii-Metirck governance measure of the firm. BCF index is the Bebchuk-Cohen-Ferrell governance measure of the firm. *CASH COMPENSATION* represents salary plus bonus of executives in thousands of dollars. *TOTAL COMPENSATION* represents total compensation of executives comprising of salary, bonus, option grants, and other compensation in thousands of dollars. *OPTION GRANTS* is the total options granted to executives in thousands of dollars. *AGGREG ALL INST HOLD* represents the aggregate holdings of sample firms by all institutional investors. *AGGERG 5-PERC INST* represents aggregate holdings of institutions with 5-percent or more holdings. *LAG ONE YEAR ABN RETURN* is the one-year lag buy-and-hold abnormal return of the sample firms.

	N	Mean	Median	Std. Dev	10 Percentile	90 Percentile
GIM Index	23473	9.07	9.0	2.78	5	13
BCF Index	22521	2.36	2.0	1.33	1.0	4.0
CASH COMPENSATION (\$K)	15597	4334	3215	4358	1513	7900
TOTAL COMPENSATION (\$K)	15384	14087	7464	23772	2387	30015
OPTION GRANTS (\$K)	15384	8822	3364	20417	331	20457
AGGREG ALL INST HOLD	20012	0.624	0.645	0.216	0.313	0.89
AGGERG 5-PERC INST	15400	0.175	0.148	0.113	0.06	0.325
LAG ONE YEAR ABN RETURN	19941	0.075	-0.017	0.623	-0.541	0.739
SIZE (\$MM)	21453	5457.85	1161.41	19402	159.29	10127.5

The changes in anti-takeover provisions of a firm are measured by the changes in GIM and BCF indices. The mean of changes in GIM index is 0.13 with standard deviation of 0.69. The maximum increase in GIM index is 10 and maximum decrease in GIM index is 9. The mean of changes in BCF index is 0.06 with standard deviation of 0.37. Both the maximum increase and decrease in BCF index are 4. The changes in GIM and BCF indices are highly correlated and the correlation coefficient is 0.63.⁷⁶ Table 4.2 provides number of firms GIM Index is available for the sample years and percentage of

⁷⁶ These numbers are not reported in any tables.

stocks that undergo decrease, remains same, and increase in GIM Index. The table also provides number of firms BCF Index is available for the sample years and percentage of stocks that undergo decrease, remains same, and increase in BCF index. For each sample year the percentage of stocks that undergo increase in anti-takeover provisions is higher than percentage stocks that experience a decrease for both GIM and BCF index.

Table 4.2: Change in GIM and BCF Indices:

This table provides number of firms GIM Index is available for the sample years and percentage of stocks that undergo decrease, remains same, and increase in GIM Index. The table also provides number of firms BCF Index is available for the sample years and percentage of stocks that undergo decrease, remains same, and increase in BCF index.

YEAR	GIM			BCF				
	N	DECREASE	MAINTAIN	INCREASE	N	DECREASE	MAINTAIN	INCREASE
1993-2004	8622	9.7	60.9	29.4	8179	5.8	77.3	16.8
1993	1265	12.9	49.3	37.8	1229	6.0	78.4	15.6
1995	1348	10.2	62.3	27.4	1308	5.9	83.6	10.6
1998	1233	9.9	62.2	27.9	1176	7.1	73.4	19.5
2000	1633	8.2	60.0	31.8	1486	5.4	72.7	21.9
2002	1447	9.4	55.1	35.5	1372	4.8	73.9	21.3
2004	1696	8.3	73.2	18.5	1608	6.0	81.5	12.4

4.3. Effect of Existing Level of Takeover Vulnerability on Executive Compensation Structure

In this section, we examine the relation between existing anti-takeover provisions of firms and executive compensation structure. Firms with a larger number of anti-takeover provisions are less likely to be disciplined by the takeover market and therefore, more likely to have entrenched management. On the other hand, since managers in high ATP firms face low risk of losing their firm specific human capital due to hostile takeover, efficient contracting is possible in these firms by setting up executive compensation scheme that is deferred until the true performance of executives is revealed. Hence, this provides a testable hypothesis with regard to existing anti-takeover provisions, whether it acts as a disciplinary mechanism in achieving efficient compensation contract for executives or whether it contributes to managerial power in

obtaining higher compensation for them. We examine whether management power plays a role in generating higher rents for executives in firms with higher level of existing ATP, or whether higher ATP results in efficient contracting by deferring executives pay in future.

4.3.1. Executive Compensation Structure for Low ATP and High ATP Portfolios

In this section, we examine executive compensation structure in extreme portfolios based on anti-takeover provisions of the firms. Figure 4.1 displays mean of aggregate cash and total compensation for high ATP and low ATP portfolios based on GIM index for the sample 1992 to 2004. High ATP portfolio is formed by stocks with GIM greater or equal to 14 in year t and Low ATP portfolio is formed by stocks with GIM smaller or equal to 5.⁷⁷ In figure 1A, we observe that average of CASH COMPENSATION for high ATP portfolio is consistently higher than that of for the low ATP portfolios for all the sample years. In the case of the total compensation in figure 1B, high ATP portfolio in some sample years display lower total compensation as compared to low ATP portfolio.

In Table 4.3, we examine the difference in compensation structure between high ATP and low ATP portfolios based on both GIM and BCF indices. In panel A, we construct high ATP and low ATP portfolios based on GIM index similar to Figure 1. In Panel B, we construct high and low ATP portfolios on the basis of BCF index, with a BCF index equal to or smaller than two (median value) as “Low ATP” portfolio and a BCF index greater than two as “High ATP” portfolio. The table presents mean and median of CASH COMPENSATION, TOTAL COMPENSATION, and PAY FOR PERFORMANCE of High ATP and Low ATP portfolios and also the statistical

⁷⁷ Gompers, Ishii, and Metrick (2003) form dictatorship portfolio with stocks with GIM index higher than 14 and democratic portfolio with stocks with GIM index less than 5. Dictatorship portfolio represents stocks with low shareholder rights and high managerial power and democratic portfolio represents stocks with high shareholder rights and low managerial power. Masulis, Wang, and Xie (2006) also use similar cutoff samples to study acquirer returns.

significance of the differences in mean and median of these variables between the two portfolios. The description of these variables is provided in Section 4.2.1.

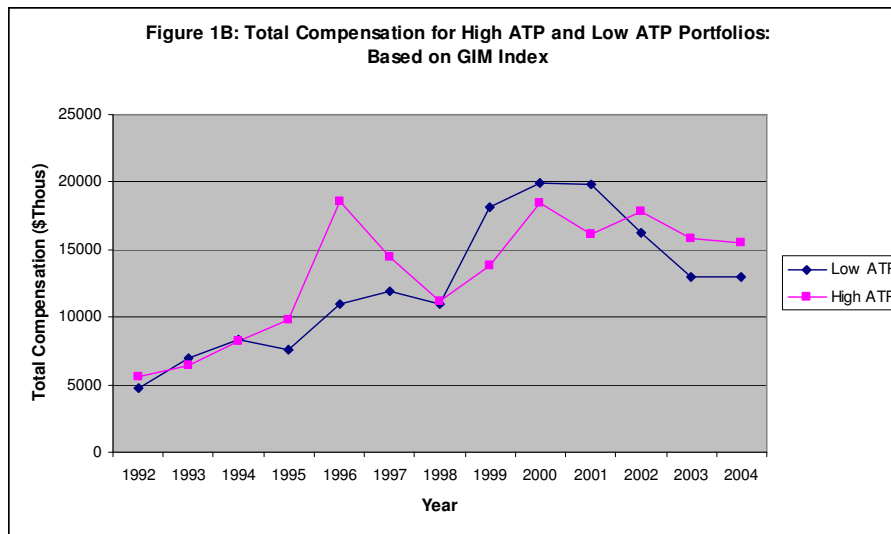
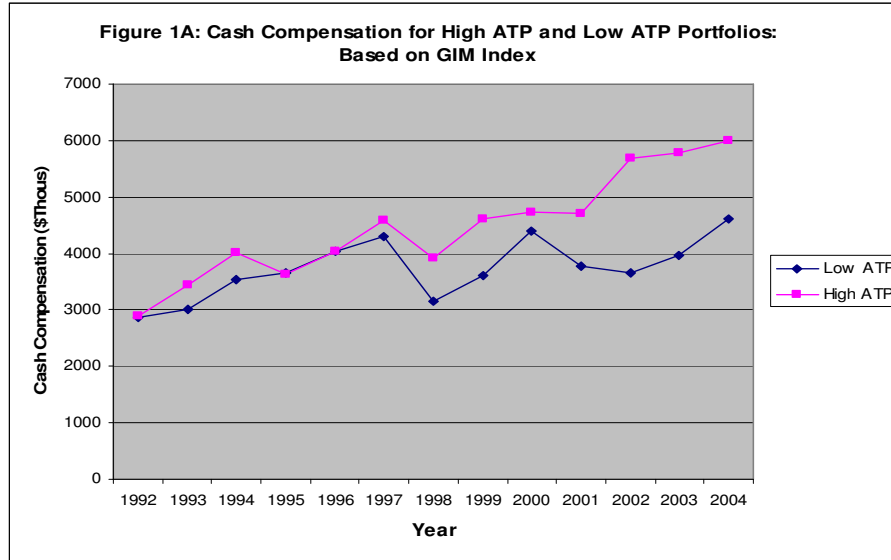


Figure 4.1: Executive Compensation for High ATP and Low ATP Portfolios

This figure displays level of executive compensation for High ATP and Low ATP portfolios based on GIM index. High ATP portfolio is formed by stocks with $GIM \geq 14$ in year t and Low ATP portfolio is formed by stocks with $GIM \leq 5$. Figure 1A displays the mean of aggregate cash compensation for High ATP and Low ATP portfolio of stocks for the sample years 1992-2004. $CASH\ COMPENSATION_t$ represents salary plus bonus of executive for the year t . Figure 1B displays the mean of aggregate total compensation for High ATP and Low ATP portfolio of stocks for the sample years 1992-2004. $TOTAL\ COMPENSATION_t$ represents total compensation of executive comprising of salary, bonus, option grants, and other compensation.

Table 4.3: Executive Compensation for Low ATP and High ATP Portfolios: 1992-2005

This table presents executive compensation structure for *low ATP* and *High ATP* portfolio. *CASH COMPENSATION_t* represents salary plus bonus of executive for the year *t*. *TOTAL COMPENSATION_t* represents total compensation of executive comprising of salary, bonus, option grants, and other compensation. *PAY FOR PERFORMANCE_t* represents the change in the value of options granted to executive per dollar change in shareholder value. In panel A, *Low ATP* and *High ATP* portfolios are formed by GIM index in year (*t-1*), which is the Gompers-Ishii-Metirck governance measure. For GIM index *High ATP Portfolio* is formed by stocks with $GIM \geq 14$ and *Low ATP Portfolio* is formed by stocks with $GIM \leq 5$. In panel B, BCF index in year (*t-1*), which is the Bebchuk-Cohen-Ferrell governance measure, is used to form the portfolios. For BCF index *High ATP Portfolio* is formed by stocks with $BCF \geq 3$ and *Low ATP Portfolio* is formed by stocks with $BCF \leq 2$.

	Panel A			Panel B		
	GIM Index			BCF Index		
	Low ATP G \leq 5 Mean (Median) [N]	High ATP G \geq 14 Mean (Median) [N]	t-test for difference (Wilcoxon-test for difference)	Low ATP BCF \leq 2 Mean (Median) [N]	High ATP BCF \geq 3 Mean (Median) [N]	t-test for difference (Wilcoxon-test for difference)
CASH COMPENSATION _t	4262 (3040) [1322]	5143 (4208) [894]	<0.0001 (<0.0001)	5151 (3639) [7657]	4774 (3626) [6903]	<0.0001 (0.20)
TOTAL COMPENSATION _t	13541 (6315) [1315]	1442 (8980) [891]	0.36 (<0.0001)	16230 (8299) [7631]	13655 (7880) [6880]	0.28 (0.02)
PAY FOR PERFORMANCE _t	0.738 (0.082) [1088]	0.686 (0.107) [768]	0.75 (0.05)	0.995 (0.120) [3156]	0.572 (0.115) [2848]	<0.0001 (0.07)

In panel A, we observe that both mean and median values for CASH COMPENSATION and TOTAL COMPENSATION are higher for High ATP portfolios as compared to Low ATP portfolios and the difference in mean is statistically significant for cash compensation. This implies that firms with high anti-takeover provisions have a higher pay structure for executives.⁷⁸ We also observe that mean of PAY FOR PERFORMANCE_t is higher for Low ATP portfolios as compared to High ATP portfolios. This implies that managerial compensation is better aligned with shareholders' interests in firms which are likely to be more disciplined by the takeover market. Hence,

⁷⁸ We also consider the median value of GIM index as another cutoff point to construct High ATP and Low ATP portfolios and observe similar differences with regard to executive compensation between High ATP and Low ATP portfolios.

managerial power plays a role in obtaining higher cash and total compensation and lower pay-for-performance sensitivity for executives in high ATP firms. However, in Panel B, we observe that using BCF index results in higher mean cash and total compensation for low ATP portfolios as compared to high ATP portfolios. The regression analysis in Table 6, allow us to investigate whether this relation holds after controlling for firm characteristics, performance, and ownership variables. The pay-for-performance show higher mean values for low ATP firms as compared to high ATP firms using BCF index, which is consistent with the results using GIM index.

4.3.2. Effect of Takeover Vulnerability on Compensation of Executives

In this section, we examine whether the level of executive compensation varies with the level of takeover vulnerability of firms. Table 4.4 presents the effect of existing ATP on executive cash compensation using GIM index. The dependent variable CASH COMPENSATION_{*t*} represents salary plus bonus of executive for the year *t*. In models 1, 2, and 3, the regression is performed on executive-firm-year level data, considering an observation for each executive for each firm in a given year. In order to prevent potential problem due to correlation across executives within a firm, we conduct firm level analysis in models 4, 5, and 6, where cash compensation is measured by aggregating over all executives in a firm. This ensures that small standard errors are not driving the results. The dependent variable GIM in model 1 and 4 is the Gompers-Ishii-Metirck governance measure. In models 2 and 5, the dependent variable GIM HIGH ATP is an indicator variable, which takes the value one if GIM index of the firm exceeds 14 and zero otherwise. Similarly, in models 3 and 6, GIM LOW ATP is an indicator variable which takes the value equal to one if GIM index of the firm is below 5 and zero otherwise.

We control for various firm characteristics, performance and institutional ownership variables. The control variables used in the regression analysis are defined below. AGGREG ALL INST HOLD is the aggregate percentage of outstanding shares

held by all institutions. AGGREG 5-PERC INST is aggregate percentage of outstanding shares held by institutions with holdings greater than 5% of firm's outstanding shares. Hartzell and Starks (2003) find that institutional investors undertake monitoring role with regard to executive compensation. They show that institutional ownership concentration is positively related to the pay-for-performance sensitivity of executive compensation and negatively related to the level of compensation. Baker, Jensen, and Murphy (1988) show that larger firms have higher executive compensation structure. Smith and Watts (1992) argue that firm size, performance, and growth opportunities influence executive compensation schemes. The results show that firms with investment opportunities have higher incentive based compensation.⁷⁹ To control for past stock performance we include ONE YEAR ABN RETURN, which is one-year buy and hold abnormal return of the stock. Following Hartzell and Starks (2003), we include Tobin's q to control for the growth opportunities of the firm and expected performance of the firm. Other firm specific control variables included in the regressions are SIZE, TOTAL ASSETS and BKMK. SIZE is defined as the total market value of the firm, obtained by multiplying number of outstanding shares by share price. To account for the difference in pay structure of CEO as compared to other top executives, we include indicator variable CEO DUMMY, which takes the value one if the executive is current CEO and zero otherwise. We define another indicator variable CEO CHAIR DUMMY, which takes the value one if the current CEO is also the chairman of the board and zero otherwise. This accounts for any power CEO might exert over compensation structure if CEO is also the chairman of the board.

In model 1, we observe the effect of GIM index over CASH COMPENSATION. We observe that after controlling for firm characteristics, performance and institutional investors influence, GIM index has a positive significant (coefficient 5.45 with p-value

⁷⁹ Other studies relating growth opportunities to executive compensation include, Mehran (1995), Gaver and Gaver (1995), and Sloan (1993).

0.06) effect over CASH COMPENSATION. This implies that firms which are less likely to be disciplined by the takeover market will have higher level of cash compensation for executives.

Table 4.4: Effect of Existing Level of ATP on Executive Cash Compensation: Analysis with GIM Index

This table presents the effect of anti-takeover provisions represented by GIM index on executive compensation. The dependent variable is *CASH COMPENSATION_t*, which represents salary plus bonus of executive in thousands of dollars for the year t. *GIM HIGH ATP_{t-1}* portfolio is formed by stocks with $GIM \geq 14$ in year (t-1) and *GIM LOW ATP_{t-1}* portfolio is formed by stocks with $GIM \leq 5$. All other control variables are defined in the Appendix.

	CASH COMPENSATION _t					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-402.93 (0.06)	-351.43 (0.10)	-339.47 (0.12)	-2979.26 (0.11)	-2457.54 (0.18)	-2367.83 (0.20)
GIM _{t-1}	5.45 (0.06)			53.97 (0.02)		
GIM HIGH ATP _{t-1}		-17.0 (0.61)			-53.49 (0.85)	
GIM LOW ATP _{t-1}			-54.70 (0.03)			-491.19 (0.02)
AGGREG ALL INST HOLD _{t-1}	-115.02 (0.01)	-110.08 (0.01)	-115.78 (0.009)	-852.67 (0.02)	-807.94 (0.02)	-857.22 (0.02)
AGGERG 5-PERC INST _{t-1}	101.59 (0.14)	94.09 (0.17)	96.66 (0.16)	542.54 (0.34)	470.40 (0.41)	492.15 (0.39)
ONE YEAR ABN RETURN _{t-1}	32.06 (0.004)	31.71 (0.005)	32.37 (0.004)	137.59 (0.15)	135.80 (0.15)	140.74 (0.14)
TOBIN Q _{t-1}	-57.92 (<0.0001)	-59.25 (<0.0001)	-58.11 (<0.0001)	-376.93 (<0.0001)	-390.17 (<0.0001)	-380.18 (<0.0001)
TOTAL ASSET _{t-1}	0.005 (<0.0001)	0.005 (<0.0001)	0.005 (<0.0001)	0.036 (<0.0001)	0.035 (<0.0001)	0.035 (<0.0001)
SIZE _{t-1}	218.19 (<0.0001)	220.16 (<0.0001)	218.67 (<0.0001)	1424.21 (<0.0001)	1441.45 (<0.0001)	1430.54 (<0.0001)
BKMK _{t-1}	56.06 (<0.0001)	57.10 (<0.0001)	56.10 (<0.0001)	425.52 (<0.0001)	434.78 (<0.0001)	426.23 (<0.0001)
CEO DUMMY _t	699.09 (<0.0001)	698.81 (<0.0001)	698.99 (<0.0001)			
CEO CHAIR DUMMY _t	-383.03 (0.01)	-385.89 (0.01)	-376.06 (0.01)			
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES
Number of Observations	24212	24212	24212	4548	4548	4548
R ²	0.30	0.30	0.30	0.55	0.55	0.55

In model 1, the effect of GIM index over cash compensation implies that a one-standard deviation increase in the GIM index is associated with an increase in cash compensation of \$151 ($=5.45*0.0278*1000$).⁸⁰ In model 2, we observe GIM HIGH ATP has negative insignificant effect on CASH COMPENSATION. In model 3, the effect of GIM LOW ATP is negative and significant over level of cash compensation paid to top executives. Hence, the results suggest that firms with higher level of existing anti-takeover provisions provide higher cash compensation to executives. Moreover, low ATP firms' executives earn lower cash compensation implying that higher shareholder rights and lower managerial power contribute in reducing cash compensation to executives of such firms.⁸¹ The results obtained in aggregate level analysis in models 4, 5, and 6 are similar to that of individual level analysis in models 1, 2, and 3 respectively, suggesting that the effects are not driven by small standard error of the regression. In model 4, the effect of GIM index implies that a one standard deviation increase in the GIM index is associated with an increase in the aggregate cash compensation of firms' executive of \$1500 ($=53.97*0.0278*1000$) or a 0.03% (0.05%) increase over the mean (median) aggregate cash compensation.

In Table 4.5, we observe the effect of takeover vulnerability on executive total compensation using GIM index as a measure of existing anti-takeover provisions of the firm. The structure of the table is similar to that of Table 4.4. The independent variable TOTAL COMPENSATION represents total compensation of executive comprising of salary, bonus, options grants, and other compensation in thousands of dollars. All other independent variables are as defined in Table 4.4. In model 1 and 4, GIM index have positive significant effect on TOTAL COMPENSATION, suggesting that firms with higher level of takeover defense mechanism will have higher total compensation for

⁸⁰ Table 1 reports the standard deviation of GIM index.

⁸¹ Considering only current salary of executives as cash compensation (excluding the bonus) give similar results.

executives. Hence, higher level of managerial power contributes in higher total compensation structure for executives.

Table 4.5: Effect of Existing Level of ATP on Executive Total Compensation: Analysis with GIM Index

This table presents the effect of anti-takeover provisions represented by GIM index on executive compensation. The dependent variable is *TOTAL COMPENSATION_t*, which represents total compensation of executive comprising of salary, bonus, option grants, and other compensation in thousands of dollars. *GIM_{t-1}* index is the Gompers-Ishii-Metrick governance measure for year (*t-1*). *GIM HIGH ATP_{t-1}* portfolio is formed by stocks with *GIM* ≥ 14 in year (*t-1*) and *GIM LOW ATP_{t-1}* portfolio is formed by stocks with *GIM* ≤ 5. All other control variables are defined in the Appendix.

	TOTAL COMPENSATION _t					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-5601.53 (<0.0001)	-5368.40 (<0.0001)	-5330.38 (<0.0001)	-34313.1 (<0.001)	-32603.4 (<0.0001)	-32392.5 (<0.0001)
<i>GIM_{t-1}</i>	23.96 (0.01)			172.79 (0.05)		
<i>GIM HIGH ATP_{t-1}</i>		14.24 (0.90)			202.57 (0.85)	
<i>GIM LOW ATP_{t-1}</i>			-211.49 (0.02)			-1350.39 (0.09)
AGGREG ALL INST HOLD _{t-1}	-764.89 (<0.0001)	-746.47 (<0.0001)	-766.39 (<0.0001)	-5652.5 (<0.0001)	-5514.89 (<0.0001)	-5647.13 (<0.0001)
AGGERG 5-PERC INST _{t-1}	689.76 (0.004)	659.47 (0.006)	670.28 (0.005)	3340.69 (0.12)	3116.5 (0.15)	3173.32 (0.14)
ONE YEAR ABN RETURN _{t-1}	286.08 (<0.0001)	284.99 (<0.0001)	287.09 (<0.0001)	1817.77 (<0.0001)	1812.8 (<0.0001)	1825.43 (<0.0001)
TOBIN Q _{t-1}	-15.94 (0.46)	-21.04 (0.33)	-17.53 (0.41)	-75.62 (0.69)	-114.04 (0.54)	-90.02 (0.63)
TOTAL ASSET _{t-1}	0.01 (<0.0001)	0.01 (<0.0001)	0.01 (<0.0001)	0.078 (<0.0001)	0.08 (<0.0001)	0.08 (<0.0001)
SIZE _{t-1}	974.39 (<0.0001)	981.82 (<0.0001)	977.22 (<0.0001)	6236.59 (<0.0001)	6286.3 (<0.0001)	6261.24 (<0.0001)
BKMK _{t-1}	193.47 (<0.0001)	197.19 (<0.0001)	194.15 (<0.0001)	1363.33 (<0.0001)	1388.6 (<0.0001)	1368.96 (<0.0001)
CEO DUMMY _t	2626.29 (<0.0001)	2625.33 (<0.0001)	2625.96 (<0.0001)			
CEO CHAIR DUMMY _t	-1619.09 (0.002)	-1636.31 (0.002)	-1595.89 (0.003)			
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES
Number of Observations	22443	22443	22443	4532	4532	4532
<i>R</i> ²	0.30	0.30	0.30	0.49	0.49	0.49

In model 1, the effect of GIM index over total compensation implies that a one-standard deviation increase in the GIM index is associated with an increase in total compensation of \$666 ($=23.96*0.0278*1000$). In model 4, the effect of GIM index implies that a one standard deviation increase in the GIM index is associated with an increase in the aggregate total compensation of firms' executive of \$4804 ($=172.79*0.0278*1000$), or a 0.03% (0.06%) increase over the mean (median) aggregate total compensation. The indicator variable GIM HIGH ATP has insignificant effect (models 2 and 5). The effect of GIM LOW ATP over total compensation of executives is negative and significant, in both models 3 and 6. Overall, the results in this table imply that firms with high ATP pay higher total compensation to its executives as compared to firms with low ATP, supporting managerial entrenchment hypothesis.

In Table 4.6, we perform the analysis using BCF index as our proxy for firm's existing anti-takeover provisions. *BCF* index is the Bebchuk-Cohen-Ferrell governance measure. We define an indicator variable *BCF LOW ATP* which takes the value one if BCF index of the firm is below 3 and zero otherwise. All other variables are as defined in Table 4. In models 1 and 2, we observe the effect on CASH COMPENSATION and in models 3 and 4 we observe the effect on TOTAL COMPENSATION. We observe that BCF index has a positive significant effect on both cash and total compensation (model 1 and 3). Moreover, the effect of the indicator variable BCF LOW ATP is also significant in both models 2 and 4. The results using BCF index therefore also imply that higher level of existing anti-takeover would lead to higher cash and total compensation for executives. Overall, both GIM and BCF indices imply that higher managerial power contributes in obtaining higher cash and total compensation for executives. The results do not seem to support efficient contracting hypothesis, which suggest that due to low likelihood of hostile takeover in firms with high level of existing anti-takeover provisions, lower current compensation for executives can be established by allowing compensation to be deferred.

Table 4.6: Effect of Existing Level of ATP on Executive Compensation: Analysis with BCF Index

This table presents the effect of anti-takeover provisions represented by BCF index on executive compensation. The dependent variables in models 1 and 2 are *CASH COMPENSATION_t*, which represents salary plus bonus of executive for the year t. The dependent variables in model 3 and 4 are *TOTAL COMPENSATION_t*, which represents total compensation of executive comprising of salary, bonus, option grants, and other compensation. *BCF_{t-1}* index is the Bebchuk-Cohen-Ferrell governance measure for year (t-1). *BCF LOW ATP_{t-1}* portfolio is formed by stocks with $BCF \leq 2$. All other control variables are defined in the Appendix.

	CASH COMPENSATION _t		TOTAL COMPENSATION _t	
	Model 1	Model 2	Model 3	Model 4
Intercept	-385.71 (0.07)	-338.04 (0.12)	-5584.8 (<0.0001)	-5293.11 (<0.0001)
BCF _{t-1}	16.07 (0.006)		102.47 (<0.0001)	
BCF LOW ATP _{t-1}		-39.07 (0.009)		-195.39 (0.0002)
AGGREG ALL INST HOLD _{t-1}	-126.96 (0.005)	-123.22 (0.006)	-845.81 (<0.0001)	-809.37 (<0.0001)
AGGREG 5- PERCENT _{t-1}	115.85 (0.09)	110.91 (0.11)	769.13 (0.001)	726.98 (0.002)
ONE YEAR ABN RETURN _{t-1}	32.56 (0.004)	32.25 (0.004)	268.22 (<0.0001)	267.12 (<0.0001)
TOBIN Q _{t-1}	-57.30 (<0.0001)	-58.17 (<0.0001)	-17.29 (0.42)	-23.55 (0.27)
TOTAL ASSET _{t-1}	0.005 (<0.0001)	0.005 (<0.0001)	0.010 (<0.0001)	0.010 (<0.0001)
SIZE _{t-1}	219.52 (<0.0001)	219.81 (<0.0001)	981.64 (<0.0001)	982.95 (<0.0001)
BKMK _{t-1}	55.62 (<0.0001)	55.79 (<0.0001)	186.92 (<0.0001)	189.14 (<0.0001)
CEO DUMMY _t	699.85 (<0.0001)	699.58 (<0.0001)	2626.38 (<0.0001)	2624.41 (<0.0001)
CEO CHAIR DUMMY _t	-333.89 (0.05)	-328.42 (0.05)	-1432.54 (0.01)	-1401.03 (0.01)
Year Fixed Effect	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES
Number of Observations	24032	24032	22272	22272
Adjusted R ²	0.30	0.30	0.30	0.30

Next, we examine whether the level of takeover vulnerability influence pay-for-performance sensitivity of executives. The pay-for-performance sensitivity is computed

as the change in value of executives' stocks option award for every dollar change in the value of firm's common equity. The computation of pay-for-performance sensitivity is explained in Section 4.2.1. The results suggest (not reported in a table) that firms with higher anti-takeover provisions have lower pay-for-performance sensitivity. However, after controlling for industry level fixed effects, the influence of level of ATP over pay-for-performance sensitivity becomes insignificant. We obtain similar results for both GIM and BCF index. Hence, the results suggest that the existing level of ATP does not influence the pay-for-performance sensitivity.

4.4. Effect of Changes in Takeover Vulnerability on Executive Compensation

Structure

In this section, we examine whether changes in anti-takeover provisions contribute to any subsequent change in pay structure of executives. We test whether managerial entrenchment hypothesis or efficient contracting hypothesis hold with regard to effect of changes in ATP on executive compensation structure. While considering the changes in takeover vulnerability, we take into account the existing anti-takeover provisions of the firms. In particular, we examine whether the effect of changes in takeover vulnerability on executive pay structure differs between firms with varying management power.

In section 4.4.1, we examine executive compensation structure for portfolio of stocks that experience a change in anti-takeover provisions. In section 4.4.2, we examine the effect of changes in ATP on cash and total compensation and the percentage change in cash and total compensation. In section 4.4.3, we examine effect of changes in ATP on pay-for-performance sensitivity.

4.4.1. Changes in Anti-takeover Provisions and Executive Compensation Structure

In this section, we compare executive compensation structure between portfolio stocks that undergo increase in ATP versus portfolio of stocks that undergo decrease in ATP.

Before looking into the effect of changes in ATP on executive compensation, we discuss briefly the characteristics of the firms that undergo changes in ATP. In Table 4.7, we present the difference in firm characteristics, performance, and governance related measures between stocks that undergo decrease in ATP vs. stocks that undergo increase in ATP. *GIM Decrease* represents portfolio of stocks with a decrease in GIM index in year t compared to the previous year ($t-1$). *GIM Increase* represents portfolio of stocks with an increase in GIM index in year t compared to the previous year ($t-1$). *BCF Decrease* represents portfolio of stocks with a decrease in BCF index in year t compared to the previous year ($t-1$). *BCF Increase* represents portfolio of stocks with an increase in BCF index in year t compared to the previous year ($t-1$).⁸² We observe that aggregate institutional holdings, top 5-percent institutional holdings and also pension fund holdings in portfolio of stocks that undergo decrease in ATP is higher as compared to portfolio of stocks that undergo increase in ATP. This suggests that overall institutional investors undertake monitoring role in improving the disciplinary role of the market for corporate control. Firms that experience decrease in ATP also have higher percentage of independent board and bigger board size. We also observe that firms that undergo increase in ATP have higher stock performance (ONE YEAR ABN RETURN and FIVE YEAR ABN RETURN) as compared to firms that undergo decrease in ATP; however the differences are not statistically significant. Moreover, firms that experience decrease in ATP have lower Tobin-q, higher total assets and are bigger in size.⁸³

⁸² In computing the changes in GIM and BCF indices, we cannot identify which provisions among the 24 (for GIM index) and 6 (for BCF index) cause the changes in GIM and BCF indices respectively. Hence, we cannot test whether certain takeover provisions have higher implications over executive compensation.

⁸³ We do not elaborate on this issue, as the main objective of the paper is to understand the effect of ATP over executive compensation.

Table 4.7: Firm Governance, Performance and Characteristics for Changes in ATP

GIM Decrease is portfolio of stocks with decrease in GIM index from the previous year. *GIM Increase* is portfolio of stocks with increase in GIM index from the previous year. *BCF Decrease* is portfolio of stocks with decrease in BCF index from the previous year. *BCF Increase* is portfolio of stocks with increase in BCF index from the previous year.

	GIM Index			BCF Index		
	GIM Decrease Mean (Median) [N]	GIM Increase Mean (Median) [N]	P-value (t-stat)	BCF Decrease Mean (Median) [N]	BCF Increase Mean (Median) [N]	P-value (t-stat)
AGGREG ALL INST HOLD	0.669 (0.683) [670]	0.649 (0.657) [2132]	0.05 (0.03)	0.685 (0.722) [412]	0.667 (0.677) [1203]	0.19 (0.07)
AGGREG 5-PERC INST	0.192 (0.166) [500]	0.186 (0.156) [1616]	0.31 (0.04)	0.201 (0.182) [318]	0.188 (0.161) [928]	0.09 (0.007)
PENSION FUND HOLD	0.0341 (0.031) [658]	0.032 (0.029) [2102]	0.09 (0.0004)	0.035 (0.032) [404]	0.032 (0.029) [1189]	0.04 (0.005)
PERC INDPENDENT DIR	0.845 (857) [497]	0.829 (0.833) [1588]	0.01 (0.01)	0.856 (0.867) [281]	0.836 (0.846) [919]	0.01 (0.009)
BOARD SIZE	10.65 (11) [497]	10.0 (10) [1588]	0.001 (<0.0001)	10.39 (10) [281]	9.93 (9) [919]	0.08 (0.007)
ONE YEAR ABN RETURN	0.071 (-0.019) [822]	0.092 (-0.006) [2515]	0.42 (0.35)	0.002 (-0.047) [486]	0.073 (-0.006) [1368]	0.03 (0.08)
FIVE YEAR ABN RETURN	0.145 (-0.464) [816]	0.188 (-0.454) [2484]	0.70 (0.14)	-0.077 (-0.646) [485]	0.132 (-0.564) [1356]	0.15 (0.43)
TOBIN Q	1.684 (1.34) [762]	1.869 (1.38) [2407]	0.002 (0.002)	1.635 (1.339) [457]	1.845 (1.383) [1327]	0.001 (0.007)
TOTAL ASSET	15414.59 (2723.3) [771]	7670.07 (1320.8) [2420]	<0.0001 (<0.0001)	13574 (2479.85) [461]	7797.9 (1321.56) [1332]	0.002 (<0.0001)
SIZE	7.549 (7.57) [763]	7.078 (7.01) [2408]	<0.0001 (<0.0001)	7.385 (7.431) [458]	7.136 (7.043) [1327]	0.003 (0.004)
BKMK	0.512 (0.54) [655]	0.581 (0.51) [2059]	0.26 (0.08)	0.578 (0.548) [392]	0.575 (0.531) [1135]	0.96 (0.20)

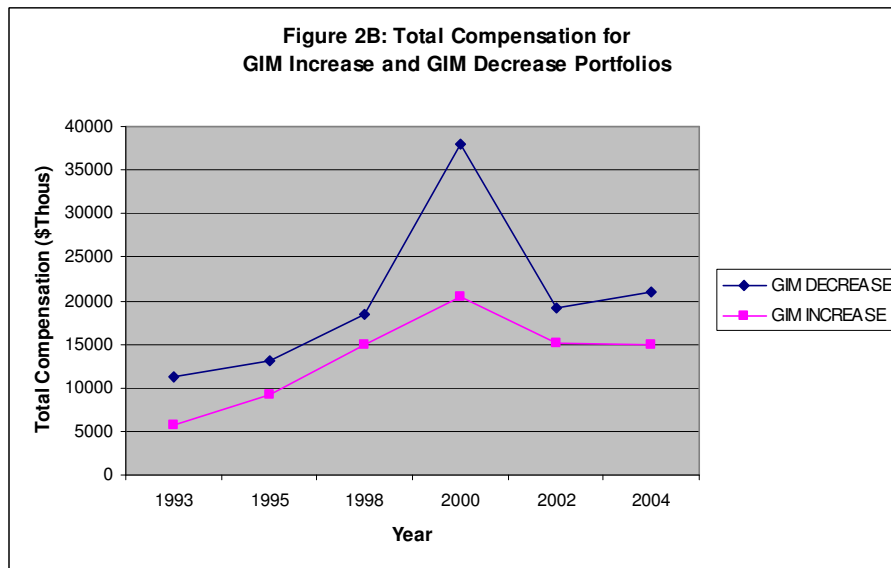
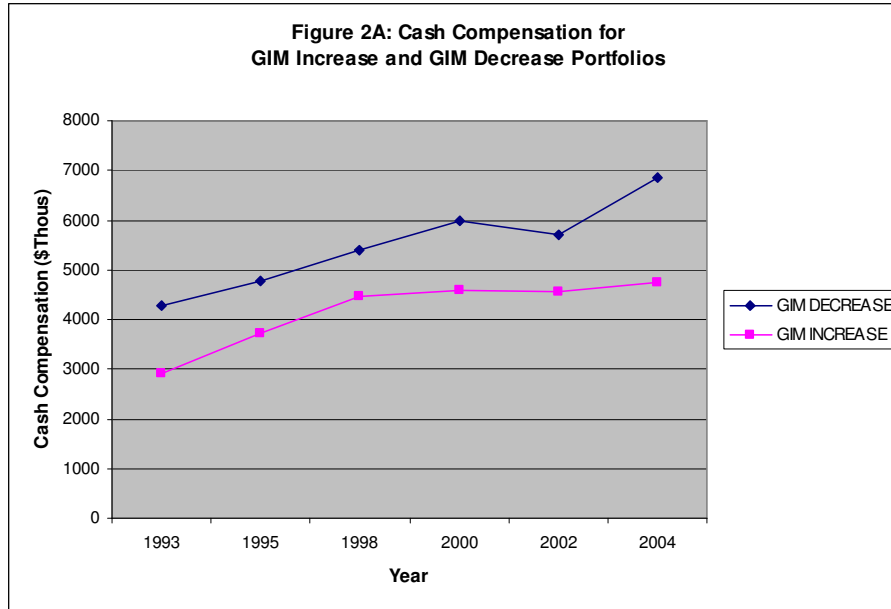


Figure 4.2: Executive Compensation for Stocks with Increase and Decrease in ATP

This figure displays level of executive compensation for portfolio of stocks with an increase and decrease in GIM index. *GIM DECREASE* represents portfolio of stocks with a decrease in GIM index in year t compared to the previous year ($t-1$). *GIM INCREASE* represents portfolio of stocks with an increase in GIM index in year t compared to the previous year ($t-1$). Figure 2A displays the mean of aggregate cash compensation for *GIM DECREASE* and *GIM INCREASE* portfolio of stocks. $CASH\ COMPENSATION_t$ represents salary plus bonus of executive for the year t . Figure 2B displays the mean of aggregate total compensation for *GIM DECREASE* and *GIM INCREASE* portfolio of stocks. $TOTAL\ COMPENSATION_t$ represents total compensation of executive comprising of salary, bonus, option grants, and other compensation.

Now, we examine the effect of changes in ATP on executive compensation structure. Figure 4.2 displays the level of executive compensation for portfolio of stocks with decrease and increase in GIM index for the years 1993-2004 (for the sample years on which changes in GIM index is available). Figure 2.A displays cash compensation for GIM Increase and GIM Decrease portfolios. We observe that cash compensation is higher in all sample years for GIM Decrease portfolio as compared to GIM Increase portfolio. Figure 2.B displays the level of total compensation for GIM Increase and GIM Decrease portfolios. Here also we observe that total compensation is higher for GIM Decrease portfolios in all sample years as compared to GIM Increase portfolios. Hence, we observe that firms which undergo increase in takeover vulnerability by eliminating some anti-takeover provisions pay their executives higher cash and total compensation for all the sample years.

Table 4.8 presents executive compensation structure for portfolio of stocks with increase and decrease in anti-takeover provisions. $CASH\ COMPENSATION_t$ represents salary plus bonus of executive for the year t . $\% \Delta CASH\ COMPENSATION_t$ is the percentage change in cash compensation in year t compared to previous year ($t-1$). $TOTAL\ COMPENSATION_t$ represents total compensation of executive comprising of salary, bonus, option grants, and other compensation. $\% \Delta TOTAL\ COMPENSATION_t$ is the percentage change in total compensation in year t compared to previous year ($t-1$). $PAY\ FOR\ PERFORMANCE_t$ represents the change in the value of options granted to executive per dollar change in shareholder value.

In Panel A, of Table 4.8 we compare compensation between stocks that experience changes in GIM Index with stocks that experience no such change. At the beginning of this section, we have defined *GIM Increase* and *GIM Decrease* portfolio of stocks. *GIM Maintain* represents portfolio of stocks with no changes in GIM index in year ($t-1$) compared to the previous year. Panel A, compares compensation of *GIM*

Increase portfolio with a control sample of *GIM Maintain* matched by 4-digit Standard Industrial Classification (SIC) and size. Panel A, also compares compensation of *GIM Decrease* portfolio with a control sample of *GIM Maintain* matched by 4-digit Standard Industrial Classification (SIC) and size. We provide mean and median compensation of the portfolios and also statistical significance of the difference in mean and median.

In Panel A, we observe that both cash and total compensation for portfolio of stocks that experience any changes (increase or decrease) in GIM Index are higher as compared to portfolio of stocks that experience no such changes. Moreover, percent increase in cash compensation is also higher for stocks that undergo any changes in GIM Index. This suggests that, changes in takeover vulnerability lead to higher compensation, irrespective of increase or decrease in ATP. Hence, with regard to effect of changes in ATP over compensation, we are unable disentangle “management entrenchment” hypothesis with “efficient contracting” hypothesis, when comparison is done with firms with no change in takeover defense mechanisms.

In Panel B, we compare compensation of executives between *GIM Increase* and *GIM decrease* portfolios. Panel B, also reports comparison of compensation between portfolios based on BCF index. For both GIM and BCF indices, we observe that CASH COMPENSATION is higher for portfolio of stocks that experience decrease in index as compared to portfolio of stocks that experience an increase in the index. Moreover, $\% \Delta CASH COMPENSATION_t$ is also higher for portfolio of stocks that experience decrease in GIM or BCF index as compared to portfolio of stocks that experience increase in the index. The differences in mean for both the variables are significant. We further observe that both $TOTAL COMPENSATION_t$ and $\% \Delta TOTAL COMPENSATION_t$ is higher for firms that eliminate anti-takeover provisions as compared to firms that implement more such provisions. The results therefore suggest that eliminating existing anti-takeover provisions would lead to higher cash and total

compensation as compared to firms which incorporate more of such provisions. This is consistent with the efficient contracting hypothesis, which predicts that increase in ATP would facilitate in achieving lower current compensation for executives.

Table 4.8: Changes in Takeover Vulnerability and Executive Compensation

This table presents executive compensation structure for portfolio of stocks with changes in takeover vulnerability. $CASH\ COMPENSATION_t$ represents salary plus bonus of executive for the year t . $\% \Delta CASH\ CPMPENSATION_t$ is the percentage change in cash compensation in year t compared to previous year ($t-1$). $TOTAL\ COMPENSATION_t$ represents total compensation of executive comprising of salary, bonus, option grants, and other compensation. $\% \Delta TOTAL\ COMPENSATION_t$ is the percentage change in total compensation in year t compared to previous year ($t-1$). $PAY\ FOR\ PERFORMANCE_t$ represents the change in the value of options granted to executive per dollar change in shareholder value. GIM index is the Gompers-Ishii-Metirck governance measure. *GIM Decrease* represents portfolio of stocks with a decrease in GIM index in year ($t-1$) compared to its previous year. *GIM Increase* represents portfolio of stocks with an increase in GIM index in year ($t-1$) compared to the previous year. *GIM Maintain* represents portfolio of stocks with no changes in GIM index in year ($t-1$) compared to the previous year. Panel A, compares compensation of *GIM Increase* portfolio with a control sample of *GIM Maintain* matched by 4-digit Standard Industrial Classification (SIC) and size. Panel A, also compares compensation of *GIM Decrease* portfolio with a control sample of *GIM Maintain* matched by 4-digit Standard Industrial Classification (SIC) and size. Panel B compares compensation of executives between *GIM Increase* and *GIM decrease* portfolios. Panel B also reports comparison of compensation between portfolios based on BCF index. BCF index is the Bebchuk-Cohen-Ferrell governance measure. *BCF Decrease* represents portfolio of stocks with a decrease in BCF index in year ($t-1$) compared to the previous year. *BCF Increase* represents portfolio of stocks with an increase in BCF index in year ($t-1$) compared to the previous year.

	N	GIM Increase Mean (Median) [N]	GIM Maintain Mean (Median) [N]	t-test for difference (Wilcoxon-test for difference)	N	GIM Decrease Mean (Median) [N]	GIM Maintain Mean (Median) [N]	t-test for difference (Wilcoxon-test for difference)
CASH COMPENSATION _t	1778	4706.46 (3564.71)	4055.38 (3139.94)	<0.0001 (<0.0001)	599	6473.31 (4661.54)	5040.77 (4121)	0.0001 (<0.0001)
% Δ CASH CPMPENSATION _t	1778	0.157 (0.104)	0.148 (0.102)	0.46 (0.29)	599	0.208 (0.104)	0.131 (0.101)	0.03 (0.22)
TOTAL COMPENSATION _t	1770	13934.44 (7872.51)	12099.03 (6338.55)	0.01 (<0.0001)	597	19458.91 (10479.07)	17618.6 (8963.06)	0.36 (0.0001)
% Δ TOTAL COMPENSATION _t	1767	0.272 (0.076)	0.286 (0.081)	0.71 (0.47)	594	0.323 (0.064)	0.392 (0.107)	0.39 (0.08)
PAY FOR PERFORMANCE _t	1549	1.01 (0.485)	1.07 (0.482)	0.40 (0.36)	479	1.291 (0.627)	1.784 (0.703)	0.14 (0.28)

	GIM Index			BCF Index		
	GIM Decrease Mean (Median) [N]	GIM Increase Mean (Median) [N]	t-test for difference (Wilcoxon-test for difference)	BCF Decrease Mean (Median) [N]	BCF Increase Mean (Median) [N]	t-test for difference (Wilcoxon-test for difference)
CASH COMPENSATION _t	6415 (4656) [642]	4749 (3544) [1905]	<0.0001 (<0.0001)	6546 (4725) [371]	4933 (3580) [1029]	<0.0001 (<0.0001)
% Δ CASH CPMPENSATION _t	0.208 (0.11) [642]	0.161 (0.10) [1905]	0.05 (0.44)	0.249 (0.097) [371]	0.145 (0.103) [1029]	0.005 (0.24)
TOTAL COMPENSATION _t	19632 (10479) [639]	14213 (7892.86) [1897]	<0.0001 (<0.0001)	20341 (11209) [368]	14875 (8332) [1025]	0.0001 (<0.0001)
% Δ TOTAL COMPENSATION _t	0.336 (0.059) [636]	0.264 (0.074) [1894]	0.16 (0.40)	0.394 (0.076) [365]	0.274 (0.064) [1023]	0.10 (0.21)
PAY FOR PERFORMANCE _t	1.319 (0.097) [484]	0.841 (0.108) [1524]	0.31 (0.47)	1.920 (0.119) [267]	0.665 (0.133) [812]	0.06 (0.42)

PAY FOR PERFORMANCE_t is also higher for firms which undergo decrease in anti-takeover provisions as compared to firms that undergo increase in anti-takeover provisions. With regard to pay-for-performance, there is no direct prediction under efficient contracting hypothesis whether increase or decrease of ATP would lead to higher pay-for-performance sensitivity. However, managerial power hypothesis predict that firms that undergo decrease in ATP would have higher pay-for-performance sensitivity. The higher mean pay-for-performance in portfolio of stocks that undergo decrease in ATP as compared to portfolio of stocks that undergo increase in ATP support managerial power hypothesis. The regression analysis in the next section allows us to disentangle between managerial power hypothesis and efficient contracting hypothesis in the context of effect of changes in takeover vulnerability on executive compensation schemes.

4.4.2. Effect of Changes in Takeover Vulnerability on Cash and Total Compensation

Table 4.9 presents the effect of changes in takeover vulnerability on level of cash and total compensation of top executives using GIM index. In the regression analysis we are looking into the effect of changes in ATP in year (t-1) on executive compensation structure in the following year t. In models 1 to 5, we analyze the effect of changes of takeover vulnerability on CASH COMPENSATION. In models 6 to 10 we analyze the effect of changes of takeover vulnerability on TOTAL COMPENSATION. The definitions of these variables are provided in the previous section. The independent variable ΔGIM_{t-1} is change in governance index in year (t-1) as compared to its previous year. $GIM\ INCREASE_{t-1}$ is a dummy variable which takes the value one if GIM index increases in year t-1 as compared to its previous year, and 0 otherwise. $GIM\ DECREASE_{t-1}$ is a dummy variable which takes the value one if GIM index decreases in year t-1 as compared to its previous year, and 0 otherwise. All other control variables are as defined in Table 4.

In model 1, we observe that ΔGIM_{t-1} has a negative significant coefficient over CASH COMPENSATION. In model 2 we observe that GIM INCREASE dummy also has a negative significant effect over CASH COMPENSATION. The results therefore suggest that when a firm's anti-takeover provisions are increased, managers are provided with lower cash compensation in the following year after changes in ATP. These results are consistent with the efficient contracting hypothesis, suggesting that an increase in ATP would allow lowering current compensation of executives by deferring compensation to future, as high ATP reduces likelihood of hostile takeover. Next we examine whether the effect of changes in ATP on level of executive compensation varies with the existing level of managerial power of the firm. In model 3 we incorporate an interaction variable $GIM\ INCREASE_{t-1} * LOW\ ATP$, where LOW ATP represents portfolio of stocks with GIM index equal or below 5. The interaction variable allow us to observe whether the results implying efficient contracting hypothesis in model 1 and 2 is

Table 4.9: Effect of Changes in ATP on Executive Compensation: Analysis with GIM index

This table represents the effect of changes in takeover vulnerability represented by changes in GIM index on the level of executive compensation. The dependent variable in model 1 to 5 is *CASH COMPENSATION_t*, which represents salary plus bonus of executive for the year *t*. The dependent variable in model 6 to 10 is *TOTAL COMPENSATION_t*, which represents total compensation of executive comprising of salary, bonus, option grants, and other compensation. The independent variables are defined in Appendix C. ***, ** and * denote 1%, 5% and 10% level of significance respectively.

	CASH COMPENSATION _t					TOTAL COMPENSATION _t				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Intercept	-387.07	-380.52	-381.98	-404.30	-403.27	-5570.39	-5566.47	-5567.26	-5647.93	-5640.56
ΔGIM_{t-1}	-18.15 **					-101.86 *** (<0.0001)				
GIM INCREASE _{t-1}		-44.38 ***	-49.98 ***				-187.20 ***	-190.53 ***		
GIM INCREASE _{t-1} * LOW ATP			113.39 *					65.82		
GIM DECREASE _{t-1}				18.49	38.92				246.98 ***	326.56 ***
GIM DECREASE _{t-1} * LOW ATP					-246.10 ***					-972.57 ***
AGGREG ALL INST HOLD _{t-1}	-75.11	-76.05	-72.89	-76.57	-79.86	-785.81 ***	-792.59 ***	-790.70 ***	-787.92 ***	-798.33 ***
AGGERG 5-PERC INST _{t-1}	40.32	40.64	41.17	42.47	44.47	630.64 ***	636.54 ***	636.58 ***	634.81 ***	631.81 ***
ONE YEAR ABN RETURN _{t-1}	59.26 ***	59.56 ***	59.12 ***	59.01 ***	58.98 ***	335.57 ***	336.31 ***	336.03 ***	333.94 ***	333.99 ***
TOBIN Q _{t-1}	-68.83 ***	-69.26 ***	-69.65 ***	-69.14 ***	-68.65 ***	-31.27	-33.76	-33.97	-31.03	-29.09
TOTAL ASSET _{t-1}	0.005 ***	0.005 ***	0.005 ***	0.005 ***	0.005 ***	0.01 ***	0.01 ***	0.01 ***	0.01 ***	0.009 ***
SIZE _{t-1}	226.84 ***	226.99 ***	227.36 ***	227.76 ***	227.61 ***	1025.25 ***	1027.54 ***	1027.74 ***	1027.54 ***	1026.53 ***
BKMK _{t-1}	49.21 ***	49.22 ***	49.64 ***	49.94 ***	52.02 ***	205.54 ***	206.91 ***	207.16 ***	207.45 ***	214.84 ***
CEO DUMMY _t	766.89 ***	767.08 ***	766.87 ***	766.97 ***	766.85 ***	2771.17 ***	2772.01 ***	2771.89 ***	2771.31 ***	2771.0 ***
CEO CHAIR DUMMY _t	-457.89 ***	-460.07 ***	-460.09 ***	-457.55 ***	-453.04 ***	-1789.29 ***	-1800.24 ***	-1800.24 ***	-1776.32 ***	-1759.25 ***
Year Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Number of Observations	20346	20346	20346	20346	20346	18871	18871	18871	18871	18871
Adjusted R^2	0.30	0.30	0.30	0.30	0.30	0.32	0.32	0.32	0.32	0.32

stronger or weaker in firms weak in managerial power. We observe that in model 3, the interaction variable has a positive and significant effect on CASH COMPENSATION. This suggests that when a firm weak in managerial power increases its ATP, this does not lead to establish lower current compensation rather the increase level of managerial power play a role in setting up higher cash compensation for executives.

In model 4, we observe that the effect of GIM DECREASE on cash compensation is positive but insignificant. Therefore, increase in takeover vulnerability does not seem to cause any effect on level of cash compensation. In model 5, we observe the effect of interaction variable $GIM\ DECREASE_{t-1} * LOW\ ATP$ is negative and significant. This suggests that firms high in shareholder rights and weak in managerial power would experience a decrease in cash compensation following a decrease in ATP. Hence, low ATP firms display entrenchment phenomenon by decrease in cash compensation when firm eliminate some existing ATP and increase in cash compensation when firm incorporate additional ATP.

In models 6 to 10, we analyze the effect of changes in external monitoring mechanism over TOTAL COMPENSATION of executives. We observe that the effect of ΔGIM_{t-1} (model 6) and $GIM\ INCREASE_{t-1}$ (model 7) on total compensation are negative and significant, suggesting that firms that undergo increase in ATP would have lower total compensation following the changes.⁸⁴ This again supports the efficient contracting hypothesis. The positive insignificant effect of the interaction term $GIM\ INCREASE_{t-1} * LOW\ ATP$ in model 8 suggest that there is no significant difference between high ATP and low ATP portfolios with regard to effect of increase in ATP on executive total compensation.

In model 9, we observe that $GIM\ DECREASE_{t-1}$ has a positive significant effect on TOTAL COMPENSATION, suggesting that decrease in ATP would lead to increase

⁸⁴ Additionally we perform regression with respect to percentage change in ATP, and the results are consistent.

in total compensation of executives, emphasizing efficient contracting hypothesis. In model 10, the negative significant effect (p-value 0.001) of the interaction variable $GIM DECREASE_{t-1} * LOW ATP$ suggest that firms weak in existing managerial power would experience decrease in the total compensation of executives following decrease in ATP. Hence, management entrenchment hypothesis seem to drive the compensation outcome of low ATP firms following changes in ATP. The efficient contracting hypothesis following changes in ATP seems to be caused by the firms high in managerial power. We argue that when changes in ATP occur in firms weak in shareholder rights, management power play a role in settling up a compensation contract which protects them from the risk of not receiving deferred compensation. According to Knoeber (1986), ATP itself acts as a disciplinary mechanism in achieving efficient compensation contract by having lower compensation in high ATP firms. Contradicting this view, our results indicate that management entrenchment contribute in obtaining such a contract as a means of securing them from losing deferred compensation.⁸⁵

In Table 4.10, we observe the effect of changes in takeover vulnerability (using GIM index as a proxy) on subsequent percentage change in cash and total compensation of executives. The dependent variable in models 1 to 3 is $\% \Delta CASH COMPENSATION_t$, which is the percentage change in cash compensation in year t compared to previous year (t-1). The dependent variable in models 4 to 6 is $\% \Delta TOTAL COMPENSATION_t$, which is the percentage change in total compensation in year t compared to previous year (t-1). The independent variables are as defined in Table 9. The effects of ΔGIM_{t-1} and $GIM INCREASE_{t-1}$ on percentage change in cash and total compensation are insignificant. In models 3 and 6, $GIM DECREASE_{t-1}$ has positive significant effect on percentage change

⁸⁵ Additionally we control for other forms of internal governance mechanisms, such as, fraction of non-executive directors on the board, board size, executives and directors' stock ownership. The effect of changes of GIM index on executive compensation remains same. We do not report these results as inclusion of these variables decreases the sample size substantially.

Table 4.10: Effect of Changes in ATP on Percentage Change of Executive Compensation: Analysis with GIM index

This table represents the effect of changes in takeover vulnerability represented by changes in GIM index on the level of executive total compensation. The dependent variable in model 1 to 3 is $\% \Delta CASH COMPENSATION_t$, which is the percentage change in cash compensation in year t compared to previous year ($t-1$). The dependent variable in model 4 to 6 is $\% \Delta TOTAL COMPENSATION_t$, which is the percentage change in total compensation in year t compared to previous year ($t-1$). The independent variable ΔGIM_{t-1} is change in governance index in year ($t-1$) as compared to its previous year. $GIM INCREASE_{t-1}$ is a dummy variable which takes the value one if GIM index increases in year $t-1$ as compared to its previous year, and 0 otherwise. $GIM DECREASE_{t-1}$ is a dummy variable which takes the value one if GIM index decreases in year $t-1$ as compared to its previous year, and 0 otherwise. All other control variables are defined in the Appendix.

	% Δ CASH COMPENSATION _{<i>t</i>}			% Δ TOTAL COMPENSATION _{<i>t</i>}		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.446 (0.06)	0.444 (0.06)	0.442 (0.06)	0.189 (0.71)	0.167 (0.74)	0.185 (0.72)
ΔGIM_{t-1}	-0.012 (0.11)			-0.021 (0.21)		
GIM INCREASE _{<i>t-1</i>}		-0.017 (0.34)			0.003 (0.93)	
GIM DECREASE _{<i>t-1</i>}			0.075 (0.006)			0.150 (0.01)
AGGREG ALL INST HOLD _{<i>t-1</i>}	-0.016 (0.76)	-0.017 (0.76)	-0.014 (0.80)	-0.077 (0.51)	-0.079 (0.51)	-0.072 (0.54)
AGGERG 5-PERC INST _{<i>t-1</i>}	-0.039 (0.63)	-0.039 (0.64)	-0.042 (0.61)	0.224 (0.21)	0.227 (0.21)	0.219 (0.22)
ONE YEAR ABN RETURN _{<i>t-1</i>}	-0.029 (0.03)	-0.029 (0.03)	-0.029 (0.03)	-0.047 (0.12)	-0.048 (0.12)	-0.048 (0.12)
TOBIN Q _{<i>t-1</i>}	-0.016 (0.05)	-0.016 (0.05)	-0.015 (0.06)	0.045 (0.01)	0.044 (0.01)	0.046 (0.009)
TOTAL ASSET _{<i>t-1</i>}	0.00001 (0.32)	0.00001 (0.32)	0.00001 (0.31)	0.00001 (0.81)	0.00001 (0.81)	0.0001 (0.80)
SIZE _{<i>t-1</i>}	0.0003 (0.96)	0.001 (0.92)	-0.0002 (0.97)	0.001 (0.92)	0.002 (0.86)	0.0001 (0.99)
BKMK _{<i>t-1</i>}	0.031 (0.01)	0.031 (0.01)	0.031 (0.02)	-0.036 (0.20)	-0.035 (0.21)	-0.037 (0.19)
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES
Number of Observations	3807	3807	3807	3783	3783	3783
Adjusted R ²	0.12	0.12	0.12	0.1	0.1	0.1

in cash and total compensation. This implies that decrease in ATP would lead to subsequent percentage increase in cash and total compensation following changes in ATP. However, an increase in ATP would not lead to any significant percentage changes in cash or total compensation. The results support the notion that increase in takeover vulnerability cause increase in current compensation due to the increase likelihood of executives not receiving deferred compensation due to hostile takeover. However, decrease in takeover vulnerability does not necessarily lead to a decrease of the level of current compensation. This again emphasizes that when a firm's potential for hostile takeover increases, management power influences in obtaining a positive percentage increase in current compensation. However, we do not find any significant difference between high ATP and low ATP firms with regard to effect of changes in ATP on percentage changes in cash and total compensation (results not reported).

In Table 4.11, we examine the effects of changes in external monitoring on level and percentage change of executive cash and total compensation using the BCF index. The independent variable ΔBCF_{t-1} is change in BCF index in year ($t-1$) as compared to its previous year. $BCF INCREASE_{t-1}$ is a dummy variable which takes the value one if BCF index increases in year $t-1$ as compared to its previous year, and 0 otherwise. $BCF DECREASE_{t-1}$ is a dummy variable which takes the value one if BCF index decreases in year $t-1$ as compared to its previous year, and 0 otherwise. All other dependent variables are as defined earlier. From models 1 and 4 we observe that changes in BCF index has a negative significant effect on cash compensation (model 1) and percentage change in cash compensation (model 4). This implies that as BCF index increases the cash compensation and percentage change in cash compensation decrease, supporting the efficient contracting hypothesis. The effect of BCF INCREASE is insignificant in model 2. However, the effect of BCF INCREASE on percentage change in cash compensation (model 5) has a negative significant effect, suggesting firms that undergo increase in anti-

takeover provisions would experience a negative percentage change in cash compensation in the following year.

In models 3 and 6, when we analyze the effect of the dummy BCF DECREASE, the indicator variable has a positive significant effect on cash compensation (model 3) and percentage change in cash compensation (model 6). This again implies that increase in takeover vulnerability lead to an increase in the level of cash and percentage change in cash compensation, emphasizing efficient contracting hypothesis. The results on TOTAL COMPENSATION also highlight similar implications, although the effects on $\% \Delta TOTAL COMPENSATION_t$ are not significant. The results using BCF index do not seem to suggest that there is any significant difference between high ATP and low ATP firms with regard to the effect of changes in ATP on executive compensation structure (results not reported). We explain this by arguing that since BCF index is constructed with only six anti-takeover provisions, the difference between high ATP and low ATP portfolio is marginal with respect to changes in ATP. GIM index is constructed using 24 provisions and the defined low ATP and high ATP portfolios represent significant difference in managerial power.

Table 4.11: Effect of Changes in ATP on Executive Compensation: Analysis with BCF Index.

This table represents the effect of changes in takeover vulnerability represented by changes in BCF index on the level of executive compensation. The dependent variable in model 1 to 3 is $CASH COMPENSATION_t$, which represents salary plus bonus of executive for the year t . The dependent variable in model 4 to 6 is $\% \Delta CASH CPMPENSATION_t$, which is the percentage change in cash compensation in year t compared to previous year ($t-1$). The dependent variable in model 7 to 9 is $TOTAL COMPENSATION_t$, which represents total compensation of executive comprising of salary, bonus, option grants, and other compensation. The dependent variable in model 10 to 12 is $\% \Delta TOTAL COMPENSATION_t$, which is the percentage change in total compensation in year t compared to previous year ($t-1$). The independent variable ΔBCF_{t-1} is change in BCF index in year ($t-1$) as compared to its previous year. $BCF INCREASE_{t-1}$ is a dummy variable which takes the value one if BCF index increases in year $t-1$ as compared to its previous year, and 0 otherwise. $BCF DECREASE_{t-1}$ is a dummy variable which takes the value one if BCF index decreases in year $t-1$ as compared to its previous year, and 0 otherwise. All other control variables are defined in the Appendix.

	CASH COMPENSATION _t			% Δ CASH COMPENSATION _t			TOTAL COMPENSATION _t			% Δ TOTAL COMPENSATION _t		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Intercept	-382.89 (0.10)	-394.19 (0.09)	-404.21 (0.08)	0.467 (0.05)	0.449 (0.06)	0.432 (0.07)	-5562.19 (<0.0001)	-5585.39 (<0.0001)	-5604.69 (<0.0001)	0.184 (0.72)	0.166 (0.74)	0.182 (0.72)
ΔBCF_{t-1}	-28.62 (0.04)			-0.054 (0.0002)			-56.06 (0.23)			0.0002 (0.99)		
BCF INCREASE _{t-1}		-21.66 (0.31)			-0.044 (0.04)			-33.16 (0.63)			0.056 (0.23)	
BCF DECREASE _{t-1}			87.97 (0.009)			0.105 (0.002)			270.58 (0.01)			0.106 (0.15)
AGGREG ALL INST HOLD _{t-1}	-77.39 (0.16)	-78.74 (0.15)	-78.72 (0.15)	-0.009 (0.87)	-0.011 (0.84)	-0.012 (0.83)	-828.97 (<0.0001)	-832.28 (<0.0001)	-829.59 (<0.0001)	-0.09 (0.40)	-0.105 (0.37)	-0.096 (0.42)
AGGREG TOP SPERCENT _{t-1}	53.25 (0.53)	55.94 (0.50)	47.64 (0.57)	-0.032 (0.70)	-0.027 (0.74)	-0.037 (0.66)	673.02 (0.01)	678.81 (0.01)	653.04 (0.01)	0.249 (0.17)	0.251 (0.17)	0.238 (0.19)
ONE YEAR ABN RETURN _{t-1}	58.75 (<0.0001)	58.42 (<0.0001)	59.36 (<0.0001)	-0.029 (0.04)	-0.029 (0.03)	-0.028 (0.04)	341.45 (<0.0001)	340.76 (<0.0001)	343.56 (<0.0001)	-0.052 (0.09)	-0.052 (0.09)	-0.052 (0.09)
TOBIN Q _{t-1}	-70.04 (<0.0001)	-70.19 (<0.0001)	-70.08 (<0.0001)	-0.015 (0.06)	-0.015 (0.06)	-0.015 (0.06)	-30.63 (0.24)	-30.86 (0.24)	-30.74 (0.24)	0.048 (0.007)	0.048 (0.007)	0.048 (0.007)
TOTAL ASSET _{t-1}	0.005 (<0.0001)	0.005 (<0.0001)	0.005 (<0.0001)	0.00001 (0.30)	0.00001 (0.31)	0.00001 (0.31)	0.01 (<0.0001)	0.01 (<0.0001)	0.01 (<0.0001)	0.00001 (0.81)	0.00001 (0.82)	0.00001 (0.81)
SIZE _{t-1}	227.0 (<0.0001)	227.40 (<0.0001)	227.87 (<0.0001)	-0.001 (0.89)	-0.0003 (0.96)	0.0004 (0.96)	1022.39 (<0.0001)	1023.25 (<0.0001)	1024.32 (<0.0001)	0.001 (0.93)	0.002 (0.89)	0.001 (0.94)
BKMK _{t-1}	49.81 (0.0002)	49.73 (0.0002)	51.05 (0.0001)	0.032 (0.01)	0.031 (0.01)	0.032 (0.01)	207.03 (<0.0001)	206.94 (<0.0001)	210.41 (<0.0001)	-0.039 (0.16)	-0.039 (0.17)	-0.038 (0.18)
CEO DUMMY _t	767.12 (<0.0001)	767.08 (<0.0001)	766.92 (<0.0001)				2777.67 (<0.0001)	2777.44 (<0.0001)	2777.38 (<0.0001)			
CEO CHAIR DUMMY _t	-394.0 (0.05)	-395.72 (0.05)	-388.54 (0.05)				-1509.92 (0.01)	-1512.84 (0.01)	-1492.48 (0.02)			
Year Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Number of Observations	20129	20129	20129	3765	3765	3765	18664	18664	18664	3741	3741	3741
Adjusted R ²	0.30	0.30	0.30	0.12	0.12	0.12	0.32	0.32	0.32	0.10	0.10	0.10

4.4.3. Effect of Changes in Anti-takeover Provisions on Pay-for-Performance Sensitivity

In this section, we examine the effect of changes in ATP on pay-for-performance sensitivity, and the results are presented in Table 4.12. The dependent variable PAY FOR PERFORMANCE_{*t*} represents the change in the value of options granted to executive per dollar change in shareholder value.⁸⁶ In models 1 to 4 GIM index is used for analysis and in models 5 to 8 BCF index is used for analysis. The independent variable $\Delta INDEX_{t-1}$ is change in GIM (BCF) index in year (*t-1*) as compared to its previous year. INDEX INCREASE_{*t-1*} is a dummy variable which takes the value one if GIM (BCF) index increases in year *t-1* as compared to its previous year, and 0 otherwise. INDEX DECREASE_{*t-1*} is a dummy variable which takes the value one if GIM (BCF) index decreases in year *t-1* as compared to its previous year, and 0 otherwise. All other control variables related to institutional holdings, firm characteristics and performance variables are defined in the Appendix.⁸⁷

In models 1, we observe that increase in GIM index would lead to lower pay-for-performance sensitivity of executives. The results in model 5 with respect to BCF index also provide similar implications. This supports the notion that increase (decrease) in managerial power would lead to subsequent decrease (increase) in pay-for-performance sensitivity. The effects of INDEX INCREASE in models 2 and 6 are insignificant. However, in models 3 and 7 we observe that effects of INDEX DECREASE are positive and significant. The results therefore indicate that the pay-for performance sensitivity increases significantly when managers increase takeover vulnerability by eliminating some existing anti-takeover provisions of the firm. Supporting the management

⁸⁶ Explained in detail in section 4.2.1

⁸⁷ We also control for other internal governance mechanisms related to board size, fraction of independent directors, managerial and director ownership; and the results are consistent. We do not report these results as inclusion of these variables reduces the sample size significantly.

entrenchment hypothesis, the results suggest that decrease in managerial power likely to align management and shareholder interests.

Table 4.12: Effect of Changes in ATP on Pay-for-Performance of Executive Compensation:

This table analyzes the effect of changes in takeover vulnerability on pay-for-performance of executive compensation. The dependent variable PAY FOR PERFORMANCE_{*t*} represents the change in the value of options granted to executive per dollar change in shareholder value. In model 1 to 3 GIM index is used for analysis and in models 4 to 6 BCF index is used for analysis. The independent variable $\Delta INDEX_t$ is change in GIM (BCF) index in year (*t-1*) as compared to its previous year. $INDEX INCREASE_{t-1}$ is a dummy variable which takes the value one if GIM (BCF) index increases in year *t-1* as compared to its previous year, and 0 otherwise. $INDEX DECREASE_{t-1}$ is a dummy variable which takes the value one if GIM (BCF) index decreases in year *t-1* as compared to its previous year, and 0 otherwise. All other control variables are defined in the Appendix.

	PAY FOR PERFORMANCE _{<i>t</i>}							
	GIM INDEX				BCF INDEX			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-1.169 (0.77)	-1.446 (0.71)	-1.389 (0.72)	-1.386 (0.72)	-0.367 (0.92)	-1.209 (0.76)	-1.632 (0.68)	-1.675 (0.67)
$\Delta INDEX_t$	-0.279 (0.03)				-1.007 (<0.0001)			
INDEX INCREASE _{<i>t</i>}		-0.201 (0.48)				-0.464 (0.18)		
INDEX DECREASE _{<i>t</i>}			1.163 (0.008)	1.265 (0.006)			2.022 (0.0005)	-0.126 (0.89)
INDEX DECREASE _{<i>t</i>} * LOW ATP				-1.427 (0.38)				3.373 (0.003)
AGGREG ALL INST HOLD _{<i>t-1</i>}	-0.579 (0.51)	-0.577 (0.51)	-0.549 (0.53)	-0.576 (0.51)	-0.510 (0.56)	-0.596 (0.50)	-0.531 (0.55)	-0.414 (0.64)
AGGERG 5-PERC INST _{<i>t-1</i>}	0.698 (0.60)	0.737 (0.58)	0.629 (0.64)	0.635 (0.64)	0.665 (0.62)	0.802 (0.55)	0.490 (0.72)	0.399 (0.76)
ONE YEAR ABN RETURN _{<i>t-1</i>}	0.735 (0.001)	0.736 (0.001)	0.727 (0.001)	0.726 (0.001)	0.744 (0.001)	0.743 (0.001)	0.756 (0.001)	0.753 (0.001)
TOBIN Q _{<i>t-1</i>}	-0.027 (0.83)	-0.033 (0.79)	-0.018 (0.89)	-0.017 (0.89)	-0.039 (0.76)	-0.040 (0.75)	-0.023 (0.86)	-0.021 (0.87)
TOTAL ASSET _{<i>t-1</i>}	-0.00001 (0.34)	-0.00001 (0.34)	-0.00001 (0.32)	-0.00001 (0.34)	-0.00001 (0.33)	-0.00001 (0.33)	-0.00001 (0.32)	-0.00001 (0.31)
SIZE _{<i>t-1</i>}	0.313 (0.01)	0.330 (0.01)	0.311 (0.02)	0.311 (0.02)	0.303 (0.02)	0.328 (0.01)	0.335 (0.01)	0.329 (0.01)
BKMK _{<i>t-1</i>}	-0.096 (0.78)	-0.075 (0.82)	-0.087 (0.79)	-0.091 (0.79)	-0.095 (0.78)	-0.085 (0.80)	-0.039 (0.91)	0.015 (0.96)
Year Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES
Number of Observations	2946	2946	2946	2946	2924	2924	2924	2924
Adjusted R ²	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11

In order to separate out the effect of high ATP and low ATP portfolios, we introduce an interaction term $\text{INDEX DECREASE}_t * \text{LOW ATP}$ in models 4 and 8. We examine whether the positive correlation between increase in takeover vulnerability and pay-for-performance sensitivity varies with the existing level of managerial power. That is, we test whether the positive and significant coefficients of INDEX DECREASE in models 3 and 7 are mainly driven by firms strong in shareholder rights and weak in managerial power. In model 4, when we use GIM index, the effect of the interaction variable $\text{INDEX DECREASE}_t * \text{LOW ATP}$ is insignificant. This suggests that firms low in managerial power do not contribute to the positive relation between INDEX DECREASE and $\text{PAY FOR PERFORMANCE}$. The interaction variable in model 8 (using BCF index) $\text{INDEX DECREASE}_t * \text{LOW ATP}$ has positive significant effect, whereas the effect of INDEX DECREASE becomes insignificant. The results therefore imply that considering BCF index, the pay-for-performance sensitivity with respect to decrease in ATP is mainly driven by firms strong in shareholder rights and weak in managerial power.

4.5. Conclusion

We examine the effect of existing anti-takeover provisions of the firm and changes in such provisions on the executive pay structure and on the pay-for-performance sensitivity. We test two competing hypotheses relating anti-takeover provisions with executive compensation structure: managerial entrenchment hypothesis and efficient contracting hypothesis. With regard to the existing level of ATP, our results are consistent with managerial entrenchment hypothesis, indicating higher managerial power in high ATP firms would result in higher cash and total compensation as compared to low ATP firms. The results further indicate that the pay-for-performance sensitivity is lower in high ATP firms, however the effect is weak.

With regard to changes in ATP we find that firms low in managerial power experience lowering of executive compensation when takeover vulnerability is increased and experience increase in current compensation when takeover vulnerability is reduced. Hence, when a low ATP firm experiences an increase in managerial power, this leads to an increase in compensation and when it experience a decrease in managerial power this leads to further decrease in compensation. The change in compensation as a result of change in existing level of ATP in low ATP firms conforms to managerial power hypothesis, which argue that increase (decrease) in managerial power would lead to increase (decrease) in compensation. On the other hand, firms high in managerial power experience increase in current compensation for executives following an increase in takeover vulnerability of the firm and decrease in current compensation following decrease in takeover vulnerability of the firm. The efficient contracting hypothesis seems to be consistent following changes in ATP in the firms already high in managerial power. We argue that when changes in ATP occur in firms weak in shareholder rights, management power play a role in settling up a compensation contract which protects them from the risk of not receiving deferred compensation. According to Knoeber (1986), ATP itself acts as a disciplinary mechanism in achieving efficient compensation contract by having lower compensation in high ATP firms. Contradicting this view, our results indicate that management entrenchment contribute in obtaining such a contract as a means of securing them from losing deferred compensation. The results further display that when a firm goes to higher managerial power to lower managerial power the pay-for-performance sensitivity increases. This relation is mainly driven by the firms which already have higher shareholder rights to begin with, although this is not consistent across different specifications of managerial power.

In summary, this paper analyzes the extent to which takeover disciplinary mechanisms undertake monitoring role in the design of executive compensation. The results support the notion that higher managerial power in high ATP firms generates

higher rents for executives. Moreover, the existing level of managerial power influences the effect of changes in takeover vulnerability on future executive compensation structure. Our results highlight the need to better understand the role of market for corporate control in the design of optimal contract to reduce the agency problem in the context of executive compensation.

CHAPTER 5

CONCLUSIONS

The role of corporate governance mechanisms to reduce the agency problem is receiving increasing attention in recent years. In this dissertation we shed light on two very important corporate governance mechanisms: monitoring by institutional investors and market for corporate control.

In the first essay, we analyze mutual funds' proxy voting behavior on shareholder proposals. We investigate three main questions. What are the factors that influence mutual funds' voting behavior? What is the incentive structure of mutual funds for undertaking an activist role in voting for shareholder proposals? Finally, how do the funds trade surrounding proposal meeting date and voting record release date? The results indicate that mutual funds take management side when they belong to bigger fund families, when they have higher ownership stakes, in dual class stocks, and on proposals related to executive compensations. Mutual fund tend to vote against management on proposals that are likely to increase shareholder wealth and rights, in firms which are less likely to be disciplined by the takeover market, in firms with strong internal governance mechanism in place, and when the gain from monitoring is likely to be higher due to longer investment horizon. The results further indicate that there is a positive reputational effect for the funds which undertake monitoring role in their voting behavior. Mutual funds which provide higher support on shareholder proposals and vote against management experience a positive net asset flow in the following year of voting record release. Moreover, the effect is mostly driven by the repeal of anti-takeover related proposals, which have direct positive shareholder wealth implications. Finally, we find that mutual funds engage in selling their portfolio shares when they provide higher support for shareholder proposals. One explanation could be that mutual funds that

provide support to non-binding shareholder proposals are not very optimistic about the final outcome of the proposals and therefore reduce their holdings. This supports the notion that mutual funds engage in “Wall Street Walk” when they dislike managements’ policy. Nevertheless, they undertake an activist role before selling their shares in order to promote shareholders’ rights in these firms.

The second essay analyzes institutional investors trading behavior of acquiring firm stocks in response to merger announcement. This essay examines the information environment of institutions with regard to merger wealth implications and their ability to respond quickly and correctly to new information released upon merger announcement. We find significant differences between two groups of institutions in trading acquiring firms stocks. We refer investment companies and independent investment advisors as active institutions and find that they increase holdings of acquiring firm stocks significantly for value increasing proposals at the announcement quarter, implying that they are able to extract information from merger wealth implications. Moreover, we find that active institutions overreact to stock proposals at the announcement quarter on the basis of the recent price trend of stock acquirers. Active institutions gradually update their information set and at the final resolution make corrections to their overreaction behavior by displaying their aversion to stock proposals. The trading behavior of active institutions is consistent with “momentum-traders” as presented in Hong and Stein (1999). We find banks, non-bank trust and insurance companies, which we refer to as passive institutions, do not respond to merger wealth effect at the announcement quarter. However, at the final resolution, they update their beliefs and increase holdings of acquiring firm stocks for merger proposals that had a positive market response at the announcement. This suggests a strong under-reaction in passive institutions’ trading strategy. In the light of behavioral model presented by Hong and Stein (1999), passive institutions behave more like “news-watchers,” who are unable to draw inference from stock price and display under-reaction due to gradual diffusion of information.

The third essay analyzes whether takeover defense mechanisms protect managers interests with higher compensation schemes, or they results in establishing efficient contract by deferring compensation in future due to lower probability of hostile takeover. By examining the effect of existing ATP and changes in ATP on executive compensation structure, we test two competing hypothesis, “Managerial Power Approach” and “Efficient Compensation Contracting Hypothesis.” With regard to existing level of ATP, our results are consistent with managerial power hypothesis, indicating higher managerial power in high ATP firms would results in higher cash and total compensation as compared to low ATP firms. With regard to changes in ATP, we find that firms already low in managerial power experience lowering of executive compensation when takeover vulnerability is increased and experience increase in current compensation when takeover vulnerability is reduced, which supports managerial power hypothesis. On the other hand, firms already high in managerial power experience increase in current compensation for executives following an increase in takeover vulnerability of the firm and decrease in current compensation following decrease in takeover vulnerability of the firm. The efficient contracting hypothesis seems to be consistent following changes in ATP in the firms high in managerial power. We argue that when changes in ATP occur in firms weak in shareholder rights, management power play a role in settling up a compensation contract which protects them from the risk of not receiving deferred compensation.

Monitoring by institutional investors and market for corporate control are considered to be two important corporate governance mechanisms to reduce agency problem. Institutional investors are the major investor group in the U.S., therefore understanding their monitoring role and trading behavior in important corporate events is getting increasing attention in recent years. The first two essays contribute to the existing literature of the role played by institutional investors in the financial market by shedding light on institutional monitoring in proxy voting decisions and their ability to respond quickly and correctly to one of the most important corporate decisions – mergers and

acquisitions. The third essay analyzes the extent to which market for corporate control influence one of the most important and debatable corporate decisions – executive compensation. All the three essays together contribute to the existing literature of corporate finance by addressing some important and novel questions and suggest direction for future research.

APPENDIX A

MUTUAL FUND VOTING ON SHAREHOLDER PROPOSALS

Appendix A1: Description of Variables of Mutual Funds Vote

Dependent Variables	
PERCENT SUPPORT BY FAMILY $_{pif}$	Percentage of votes cast in support for shareholder proposal p of firm i by all funds in family f .
FUND PERCENT HOLD CHANGE $_{ijt}$	The change in percentage holdings of outstanding stock of firm i by the fund j in the quarter t as compared to the previous quarter.
FUND FLOW $_j$	Objective adjusted net asset flow of fund j over the following year of the filing date of the voting records
Independent Variables	
Fund Related Variables:	
PERCENTGAE SUPPORT TO SHRHLD $_{ji}$	Percentage of votes cast in support for shareholder by a fund j over all shareholder proposals for a stock i
MEDIAN PERCENT SUPPORT BY FUND $_j$	Median percentage of votes cast in support for proposal by a fund j over all shareholder proposals. First compute the percentage of support by a fund over all proposals for a particular stock, then taking the median of this percentage over all stocks by the fund.
FAMILY SIZE	Logarithm of the total net assets of all the funds in the family in the year of shareholder proposal.
FUND SIZE	Logarithm of the total net assets of the fund in the year of shareholder proposal.
BUSINESS TIES FAMILIES	A dummy variable which is equal to one if the fund family is among one of the conflicted ones. Davis and Kim (2006) identify the six most conflicted fund companies in terms of business ties. These are Fidelity, Vanguard, American Funds, Putnam, AIM/Invesco, and T. Rowe Price.
FUND AGE	Logarithm of fund age (years)
OAR	Objective adjusted return of fund over the previous year of the filing date of the voting records.
FOUR-FACTOR ALPHA	The annualize 4-factor alpha. This is computed over the previous three-year period of the filing date of the voting records using monthly returns of the mutual funds, and then annualized.

TRACKING ERROR	Tracking error is the annualized standard deviation of the residuals from the 3-factor model regression. This is computed over the previous three-year period (filing date) using monthly return of mutual funds.
PREV YEAR AVG NAF	Fund objective adjusted net asset flows over the previous 12 months of the filing date of the voting records
FEE	Sum of expense ratio and one seventh of all loads charged by the fund.
S&P STAR	Standard & Poor's Star Rating of the fund in the previous quarter of the voting record release.
Firm Related Variables:	
FIRM SIZE	Natural logarithm of market capitalization of firm in the previous quarter of the proposal
BOOK TO MKT	Book-to-market ratio of the firm in the previous quarter of the proposal
EARNING-PRICE-RATIO	Earnings to Price ratio of the firm in the previous quarter of the proposal
RETURN PAST 90 DAYS	Buy and hold abnormal return of the firm over 90 days prior to proposal meeting date.
HISTORICAL LONG RUN EXCESS RETURN	Buy and hold abnormal return of the firm over five years prior to and ending three months prior to proposal meeting date.
MAJOR STOCK LISTING	Dummy variable, which takes the value 1 if the stock is listed in one of the major stock market.
GIM	Gompers, Ishii, and Metrick (2003) governance score of the firm in the year of the proposal
BCF	Bebchuk, Cohen, and Ferrell (2004) entrenchment index of the firm in the year of the proposal
NUMBER OF PROPOSALS	Number of shareholder proposals for a particular firm
Fund and Other Institutional Holding Related Variables:	
PERCENT SHARE HOLD	Percent of outstanding shares held by the fund family in the quarter of proposal
PREV QTR PERC HOLD BY FUND	Percent of outstanding shares held by the fund in the previous quarter of proposal
ALL INST HOLD	Percent of outstanding shares held by all institutional investors in the previous quarter of proposal
BLOCKHOLDER HOLD	Percent of outstanding shares held by non-management five percent blockholder in the previous quarter of the proposal
INSIDER HOLD	Percent of outstanding shares held by managers and/or directors in the previous quarter of the proposal

Proposal Type (Dummy Variables):	
ANTITAKEOVER	Proposals related to anti-takeover provisions
VOTING ISSUES	Proposals related to voting issues
SHAREHOLDER WEALTH AND RIGHTS	Proposals related to shareholder wealth and rights
EXECUTIVE COMPENSATION	Proposals related to executive compensation
DIRECTOR RELATED	Proposals related to directors and board compensation, size, independence
AUDIT	Proposals related to audit committee
OTHERS	Proposals related social, ethical and general issues

Appendix A2: Descriptive Statistics of the Shareholder Proposal Voting Records

Appendix A2 presents the different kinds of proposals considered in our analysis. We categorize all the sample proposals into six types: ANTITAKEOVER are proposals related to the elimination of anti-takeover measures; VOTING ISSUES are proposals related to voting rules; SHAREHOLDER WEALTH AND RIGHTS are proposals related to shareholder wealth and rights; EXECUTIVE COMPENSATION are proposals related to executive compensation; DIRECTOR RELATED are proposals related director independence, compensation, or board size; AUDIT are the proposals related to audit committee; OTHERS are general types of proposals

PROPOSAL	Freq	% Vote “for”	% Vote “against”	% Vote “abstain”	% Vote “unknown”
ANTITAKEOVER					
Eliminate supermajority provision	343	0.798	0.199	0.003	0.000
Poison pill	1380	0.796	0.187	0.011	0.006
Declassify board	1883	0.629	0.357	0.014	0.000
Golden parachutes	1083	0.531	0.458	0.011	0.000
Opt out state takeover statute	6	0.333	0.667	0.000	0.000
VOTING ISSUES					
One share one vote	29	0.931	0.000	0.069	0.000
Elect nominating committee	76	0.632	0.158	0.184	0.026
Confidential voting	7	0.429	0.571	0.000	0.000
Cumulative voting	859	0.363	0.518	0.119	0.000
Majority Vote Requirement for Directors’ Election	568	0.040	0.949	0.011	0.000
VOTING LEVERAGE	15	0.000	0.800	0.200	0.000
SHAREHOLDER WEALTH AND RIGHTS					
Share repurchase	3	1.000	0.000	0.000	0.000
Shareholder rights	15	1.000	0.000	0.000	0.000
Special meeting	17	0.882	0.000	0.118	0.000
Recapitalization	69	0.725	0.275	0.000	0.000
Expense stock options	1319	0.610	0.376	0.013	0.001
Increase number of outstanding stock	115	0.296	0.635	0.070	0.000
Preemptive rights	18	0.278	0.722	0.000	0.000
Separate CEO chair	1990	0.254	0.727	0.016	0.004
Reincorporation in Delaware	63	0.143	0.762	0.095	0.000
Consider	66	0.121	0.727	0.076	0.076
Stockholder communications	68	0.074	0.912	0.015	0.000
Sell company	79	0.051	0.924	0.025	0.000
Maximize shareholder value	59	0.034	0.966	0.000	0.000
Report political contributions	2515	0.007	0.832	0.160	0.001
Inst. voting recommendation	30	0.000	0.767	0.233	0.000
Change company jurisdiction	128	0.000	0.953	0.047	0.000
Change date annual meeting	117	0.000	0.940	0.060	0.000
Insider notice stock trade	12	0.000	0.333	0.000	0.667
Prohibit CEO in other board	6	0.000	0.667	0.000	0.333
Refrain charitable contributions	525	0.000	0.792	0.208	0.000
Review mutual fund policy	114	0.000	0.947	0.053	0.000
EXECUTIVE COMPENSATION					

Performance goal	498	0.289	0.683	0.028	0.000
Limit severance	12	0.083	0.833	0.000	0.083
Executive compensation	3244	0.076	0.887	0.027	0.010
Restricted shares	498	0.052	0.932	0.012	0.004
Limit awards to executives	1416	0.048	0.937	0.011	0.004
Retention stock	226	0.040	0.925	0.035	0.000
Options executives	306	0.029	0.866	0.095	0.010
DIRECTOR RELATED					
Majority independent board	591	0.213	0.775	0.012	0.000
Director others	529	0.185	0.750	0.053	0.011
Independent board	42	0.167	0.833	0.000	0.000
Board size	97	0.000	1.000	0.000	0.000
Director compensation	148	0.000	0.980	0.000	0.020
AUDIT					
Audit committee	196	0.418	0.531	0.051	0.000
Auditor limit	251	0.084	0.900	0.004	0.012
Audit independence	121	0.083	0.917	0.000	0.000
Audit approval	32	0.000	0.813	0.063	0.125
OTHERS					
EoI report	112	0.286	0.527	0.188	0.000
Sustainability report	370	0.149	0.616	0.235	0.000
Diversity report	90	0.122	0.678	0.200	0.000
Option by race & gender	275	0.040	0.778	0.182	0.000
Genetically modified org	346	0.038	0.685	0.277	0.000
Other proposals	2902	0.033	0.766	0.188	0.013
Labor standards	553	0.031	0.731	0.239	0.000
Greenhouse gas emission	181	0.028	0.691	0.282	0.000
Foreign military sale	118	0.025	0.729	0.246	0.000
Renewable energy	83	0.024	0.723	0.229	0.024
Hazardous pesticides	50	0.020	0.780	0.200	0.000
HIV aids pandemic	239	0.017	0.762	0.222	0.000
Risk disclosure	354	0.014	0.847	0.133	0.006
Environmental reporting	250	0.012	0.820	0.168	0.000
Climate change residual	130	0.008	0.800	0.177	0.015
Ethical military contracts	315	0.006	0.819	0.175	0.000
Animal testing	264	0.004	0.807	0.189	0.000
China principles	376	0.003	0.785	0.213	0.000
Govt. use of product	100	0.000	0.820	0.180	0.000
ILO code of conduct	18	0.000	0.667	0.333	0.000
McBride principle	150	0.000	0.680	0.320	0.000
Radioactive waste	36	0.000	0.611	0.389	0.000
Recycling policy	32	0.000	0.750	0.250	0.000
Vendor Standards	54	0.000	0.722	0.278	0.000
Pay disparity	508	0.049	0.886	0.065	0.000
Executive government ties	105	0.000	0.838	0.162	0.000

APPENDIX B

INSTITUTIONAL TRADING IN M&A

Appendix B1: Description of Variables of Institutional Trading in M&A

ANN QTR HOLD CHNG	Aggregate change in active (passive) institutional holdings of acquirer stock in the announcement quarter.
FINAL QTR HOLD CHNG	Aggregate change in active (passive) institutional holdings of acquirer stock in the final resolution quarter.
BET ANN TO FINAL HOLD CHNG	Aggregate change in active (passive) institutional holdings of acquirer stock in the quarter between merger announcement and resolution
PREV QTR HOLD	Aggregate percentage holdings of acquirer stocks by active (passive) institutional investors in the previous quarter before announcement (final resolution).
PREV QTR HOLD CHNG	Aggregate change in active (passive) institutional holdings of acquirer stock in the quarter prior to merger announcement (final resolution).
CAR	Cumulative abnormal return for the combined firm (acquirer and target) at the merger announcement for the event window (-1, +1).
CAR DUMMY	Dummy variable, which is equal to 1 when the combined announcement period abnormal return CAR is positive, and 0 otherwise.
SUCCESS DUMMY	Dummy variable, which is equal to 1 if the final outcome of the M&A proposal is a success and 0 otherwise.
CASH DUMMY	Dummy variable, which is equal to 1 when the method of payment of the merger is by cash and 0 when the method of payment is by stocks or a combination of cash and stocks.
ACQ LOG ASSET	Natural logarithm of market capitalization of acquirer stocks.
DEAL VALUE	Natural logarithm of dollar value of the merger proposal
ACQ BOOK TO MKT	Book-to-market ratio
PREV RET 30 DAY	Buy and hold abnormal return of the acquiring firm over 30 day prior to merger announcement (final resolution).
PREV RET 90 DAY	Buy and hold abnormal return of the acquiring

	firm over 90 day prior to merger announcement (final resolution).
BLOCKHOLDER HOLD	Percentage holdings of five percent blockholder in the quarter of merger announcement (final resolution).
INSIDER HOLD	Percentage holdings of corporate insiders in the quarter of merger announcement (final resolution).

APPENDIX C

ATP AND EXECUTIVE COMPENSATION

Appendix C1: Description of Variables of ATP and Executive Compensation

CASH COMPENSATION _{<i>t</i>}	Salary plus bonus of executive for the year <i>t</i> .
TOTAL COMPENSATION _{<i>t</i>}	Total compensation of executive comprising of salary, bonus, option grants, and other compensation.
PAY FOR PERFORMANCE _{<i>t</i>}	The change in the value of options granted to executive per dollar change in shareholder value.
GIM _{<i>t</i>}	Gompers-Ishii-Metirck governance measure in year <i>t</i> .
GIM HIGH ATP _{<i>t</i>}	Portfolio of stocks with GIM \geq 14 in year <i>t</i> .
GIM LOW ATP _{<i>t</i>}	Portfolio of stocks with GIM \leq 5 in year <i>t</i> .
ΔGIM_t	Change in GIM index in year <i>t</i> as compared to its previous year.
GIM INCREASE _{<i>t</i>}	Dummy variable which takes the value one if GIM index increases in year <i>t</i> as compared to its previous year
GIM DECREASE _{<i>t</i>}	Dummy variable which takes the value one if GIM index decreases in year <i>t</i> as compared to its previous year
BCF _{<i>t</i>}	Bebchuk-Cohen-Ferrell governance measure for year <i>t</i> .
BCF LOW ATP _{<i>t</i>}	Portfolio of stocks with BCF \leq 2 in year <i>t</i> .
ΔBCF_t	Change in BCF index in year <i>t</i> as compared to its previous year.
BCF INCREASE _{<i>t</i>}	Dummy variable which takes the value one if BCF index increases in year <i>t</i> as compared to its previous year
BCF DECREASE _{<i>t</i>}	Dummy variable which takes the value one if BCF index decreases in year <i>t</i> as compared to its previous year
AGGREG ALL INST HOLD _{<i>t</i>}	Aggregate percentage holding by institutional investors in year <i>t</i>
AGGREG 5-PERC INST _{<i>t</i>}	Aggregate holdings of institutions with 5-percent or more holdings in year <i>t</i>
PENSION FUND HOLD _{<i>t</i>}	Aggregate holdings by pension funds in year <i>t</i>
PERC INDEPENDENT DIR	Fraction of board of directors composed of non-executive directors
BOARD SIZE	Size of the board of directors
ONE YEAR ABN RETURN _{<i>t</i>}	Buy and hold abnormal return of the stock over

	the previous one year
TOBIN Q _{<i>t</i>}	Ratio of market value of assets over its book value of assets. Market value of assets is computed as the book value of asset (item 6) minus the book value of common equity (item 60) plus the market value of common equity (item 25*item 199)
TOTAL ASSET _{<i>t</i>}	Book value of assets of the firm in year <i>t</i> . (item 6 of compustat)
SIZE _{<i>t</i>}	Natural logarithm of market capitalization of the stock in year <i>t</i> .
ACQ BOOK TO MKT _{<i>t</i>}	Book-to-market ratio of the stock in year <i>t</i>
CEO DUMMY _{<i>t</i>}	Dummy variable, which takes the value one if the executive is CEO in year <i>t</i> and zero otherwise
CEO CHAIR DUMMY _{<i>t</i>}	Dummy variable, which takes the value one if the CEO is also the chairman of the board in year <i>t</i> and zero otherwise

REFERENCES

- Abowd, John M., David S. Kaplan, 1999, "Executive Compensation: Six Questions that Need Answering," *Journal of Economic Perspectives* 13, 145-168.
- Agarwal, Anup and Charles R. Knoeber, 1998, "Managerial Compensation and the Threat of Takeover," *Journal of Financial Economics* 47, 219-239.
- Agrawal, Anup, Jeffrey F. Jaffe, and Gershon N. Mandelker, 1992, The post-merger performance of acquiring firms: a re-examination of an anomaly, *Journal of Finance* 47, 1605-1621
- Almazan, Andres, Jay C. Hartzell, and Laura T. Starks, 2005, "Active Institutional Shareholders and Cost of Monitoring: evidence from Executive Compensation," *Financial Management* 34, 5-34.
- Ashraf, Rasha, Rajesh Chakrabarti, Richard Fu, and Narayanan Jayaraman, 2007, "Takeover Immunity, Takeovers, and the Market for Non-Executive Directors," Working Paper, Georgia Institute of Technology.
- Amzaleg, Yaron, Uri Ben-Zion, and Ahron Rosenfeld, 2005, "On the Role of Institutional Investors in Corporate Governance: Evidence from Voting of Mutual Funds in Israel," Working Paper, Ben-Gurion University.
- Andrade, G., M. Mitchell, and E. Stafford, 2001, New evidence and perspectives on mergers, *Journal of Economic Perspectives* 15, 103-120.
- Badrinath, Swaminathan G., Sunil Wahal, 2002, Momentum trading by institutions, *Journal of Finance* 57(6), 2449-2478.
- Baker, George, Michael Jensen, and Kevin Murphy, 1988, "Compensation and Incentives: Practice vs. Theory," *Journal of Finance* 43, 593-616.
- Bebchuk, Lucian A., Jesse M. Fried, and David I. Walker, 2002, "Managerial Power and Rent Extraction in the Design of Executive Compensation." *University of Chicago Law Review* 69(3), 751-846.
- Bebchuk, Lucian, Alma Cohen, and Allen Ferrell, 2004, "What Matters in Corporate Governance," Working Paper, Harvard University.
- Becht, Marco, Patrick Bolton, and Ailsa Roell, 2002, "Corporate Governance and Control," Working Paper, European Corporate Governance Institute (ECGI).

Bergstresser, Daniel, and James Poterba, 2002, "Do After-tax Returns Affect Mutual Fund Inflows?" *Journal of Financial economics* 63, 381-414.

Bertrand, Marianne and Sendhil Mullainathan, 2001, "Are CEO's Rewarded for Luck? The Ones Without Principals Are." *Quarterly Journal of Economics*, 901-932.

Bhagat, Sanjai, and Romano, Roberta, 2001, "Event Studies and the Law: Part II - Empirical Studies of Corporate Law," Working Paper, Leeds School of Business and Yale Law School.

Black, Bernard, 1998, Shareholder Activism and Corporate Governance in the U.S., in Peter Newman, ed.: *The New Palgrave Dictionary of Economics and Law* (Macmillan Reference Limited, London and Basingstoke).

Borokhovich, Kenneth A., Kelly R. Brunarski, and Robert Parrino, 1997, "CEO Contracting and Anti-Takeover Amendments." *Journal of Finance* 52(4), 1495-1517.

Brickley, James A., Ronald C. Lease and Clifford W. Smith, 1988, "Ownership Structure and Voting on Antitakeover Amendments," *Journal of Financial Economics* 20, 267-291.

Bruner, R.F., 2002, Does M&A Pay? A survey of evidence for the decision-maker, *Journal of Applied Finance* 12.

Burch, T. R. and B. Swaminathan, 2002, Earnings News and Institutional Trading, Working Paper, Cornell University.

Chen, Xia, Jarrad Harford, and Kai Li, 2006, Monitoring: Which Institutions Matter? *Journal of Financial Economics*, Forthcoming.

Christofferson, Geczy, Musto, and Reed, 2005, "Vote Trading and Information Aggregation," Working Paper, McGill University, University of Pennsylvania, and University of North Carolina at Chapel Hill.

Coates, John C., 2000, "Explaining Variation in Takeover Defenses: Failure in the Corporate Law Market," Working Paper, Harvard Law School.

Coles, Jeffrey, Naveen Daniel, and Lalitha Naveen, 2006, "Managerial Incentives and Risk-taking," *Journal of Financial Economics* 79, 431-468.

Comment, Robert and William G. Schwert, 1995, "Poison or Placebo? Evidence on the Deterrence and Wealth Effects of Modern Anti-takeover Measures," *Journal of Financial Economics* 39, 3-43.

Core, John, and Wayne Guay, 1999, "The Use of Equity Grants to Manage Optimal Equity Incentive Levels," *Journal of Accounting and Economics* 28, 151-184.

Cotter, James F., Anil Shivdasani, and Marc Zenner, 1997, "Do Independent Directors Enhance Target Shareholder Wealth during Tender Offers?" *Journal of Financial Economics* 43, 195-218.

Cremers, Martijn and Vinay Nair, 2005, "Governance Mechanisms and Equity Prices." *Journal of Finance* LX, 2859-2868.

Daniel, Kent, David Hirshleifer, and Avanidhar Subrahmanyam, 1998, Investor Psychology and Security Market Under-and Over-reactions. *Journal of Finance* 53, 1839-1886.

Davis, Gerald F. and E. Han Kim, 2006, "How Do Business Ties Influence Proxy Voting by Mutual Funds?" Forthcoming in *Journal of Financial Economics*. .

De Jong, Abe, Gerard Mertens, and Peter Roosenboom, 2005, "Shareholders' Voting at General Meetings: Evidence from the Netherlands," Working Paper, Rotterdam School of Management.

DelGuercio, Diane, and Paula A. Tkac, 2002, "The Determinants of the Flow of Funds of Managed Portfolios: Mutual Funds versus Pension Funds," *Journal of Financial and Quantitative Analysis*, 37, 523-558.

Demsetz, Harold, 1983, "The Structure of Ownership and the Theory of the Firm," *Journal of Law and Economics* 26, 375-390.

Ertimur, Yonca, Fabrizio Ferri, and Stephen Stubben, 2005, "Board of Directors' Responsiveness to Shareholders: Evidence from Majority-Vote Shareholder Proposals," Working Paper, Duke University, Harvard Business School, and University of North Carolina.

Fama, Eugene and Michael C. Jensen , 1983, "Separation of Ownership and Control," *Journal of Law and Economics* 26.

Field, L., 1995. Is institutional investment in initial public offerings related to long-run performance of these firms? Working Paper. University of California, Los Angeles.

Field, Laura, Michelle Lowry, 2005, Institutional Versus Individual Investment in IPOs: The Importance of Firm Fundamentals, Working Paper. Pennsylvania State University.

Fisman, Ray, Rakesh Khurana, and Matthew Rhodes-Kropf, 2005, "Governance and CEO Turnover: Do Something or Do the Right Thing?" Working Paper, Columbia University and Harvard University.

Gaver, Jennifer, and Kenneth M. Gaver, 1995, "Compensation Policy and the Investment Opportunity Set," *Financial Management* 24, 19-32.

- Gibson, Scott, Assem Safieddine, and Ramana Sonti, 2004. Smart Investments by Smart Money: Evidence from Seasoned Equity Offerings. *Journal of Financial Economics* 72(3), 581-604.
- Gillan, Stuart L. and Laura T. Starks, 2000, "Corporate Governance Proposals and Shareholder Activism: The Role of Institutional Investors," *Journal of Financial Economics* 57, 275-305.
- Gillan, Stuart L. and Laura T. Starks, 1998, "A Survey of Shareholder Activism: Motivation and Empirical Evidence," *Contemporary Finance Digest* 2, 10-34.
- Gompers, Paul A., Joy L. Ishii, and Andrew Metrick, 2003, "Corporate Governance and Equity Prices," *Quarterly Journal of Economics* 118, 107-155.
- Gompers, Paul A., Joy L. Ishii, and Andrew Metrick, 2005, "Extreme Governance: An Analysis of Dual-Class Firms in the United States," Working Paper.
- Gopalan, Radhakrishana, 2005, Large Shareholder Trading and Takeovers: The Disciplinary Role of Voting With Your Feet. Working Paper. University of Michigan.
- Gordon, Lilli A. and John Pound, 1993, "Information, Ownership Structure, and Shareholder Voting: Evidence from Shareholder-Sponsored Corporate Governance Proposals," *Journal of Finance* 48, 697-718.
- Grinblatt, Mark, Sheridan Titman and Russ Wermers, 1995, "Momentum investment strategies, portfolio performance and herding: A study of mutual fund behavior," *American Economic Review* 85, 1088-1105.
- Grinstein, Yaniv, Roni Michaely, 2005, Institutional holdings and payout policy. *Journal of Finance*, Forthcoming.
- Grossman, Sanford and Oliver Hart, 1980, "Takeover Bids, the Free-Rider Problem, and the Theory of the Corporation," *The Bell Journal of Economics* 11, 42-64.
- Gruber, Martin J., 1996, "Another Puzzle: The Growth in Actively Managed Mutual Funds," *Journal of Finance* 51, 783-810.
- Guay, W. R., 1999, "The Sensitivity of CEO Wealth to Equity Risk: An Analysis of the Magnitude and Determinants," *Journal of Financial Economics* 53, 43-71.
- Hadlock, Charles and Gerald Lumer, 1997, "Compensation, Turnover and Top Management Incentives: Historical Evidence," *Journal of Business* 70, 153-187.
- Hanley, K.W., W. J. Wilhelm, 1995. Evidence on the strategic allocation of initial public offerings. *Journal of Financial Economics* 37, 239-257.

- Harles, David W., and Steven P. Peterson, 1998, "Investor Behavior and the Persistence of Poorly-Performing Mutual Funds," *Journal of Economic Behavior and Organization* 37, 257-276.
- Hartzell, Jay C. and Laura Starks, 2003, "Institutional Investors and Executive Compensation," *Journal of Finance* 6, 2351-2374.
- Harvey, Keith D., and Ronald E. Shrieves, 2001, "Executive Compensation Structure and Corporate Governance Choices," *Journal of Financial Research* 24, 495-512.
- Hong, Harrison and Jeremy Stein, 1999, A Unified Theory of Under-reaction, Momentum Trading and Over-reaction in Asset Markets. *Journal of Finance* 54, 2143-2184.
- Huddart, Steven, 1993, "The Effect of a Large Shareholder on Corporate Value," *Management Science* 39, 1407-1421.
- Huson, Mark, Robert Parrino, and Laura Starks, 2001, "Internal Monitoring Mechanisms and CEO Turnover: A Long-term Perspective," *Journal of Finance* 56, 2265-2297.
- Ippolito, Richard A., 1992, "Consumer Reaction to Measures of Poor Quality: Evidence from the Mutual Fund Industry," *Journal of Law and Economics* 35, 45-70.
- Jain, Prem C., and Joanna Shuang Wu, 2000, "Truth in Mutual Fund Advertising: Evidence in Future Performance and Fund Flows," *Journal of Finance* 55, 937-958.
- Karpoff, Jonathan M., 2001, "The Impact of Shareholder Activism on Target Companies: A Survey of Empirical Findings," Working Paper, University of Washington.
- Karpoff, Jonathan M., Paul H. Malatesta, and Ralph A. Walkling, 1996, "Corporate Governance and Shareholder Initiatives: Empirical Evidence," *Journal of Financial Economics*, 42(3), 365-395.
- Khorana, Ajay, and Henry Servaes, 2004, "Conflict of Interest and Competition in the Mutual Fund Industry," Working Paper.
- Khorana, Ajay, Peter Tufano and Lei Wedge, 2006, "Board Structure, Mergers and Shareholder Wealth: A Study of the Mutual Fund Industry," Forthcoming in *Journal of Financial Economics*.
- Knoeber, Charles R., 1986, Golden Parachutes, Shark Repellents, and Hostile Tender Offers, *American Economic Review* 76, 155-167.
- Knyazeva, Anzhela, 2006, "Delivering on the Dividend Promise: Corporate Governance, Managerial Incentives, and Dynamic Dividend Behavior." Working Paper, New York University.

- Krigman, L., W. Shaw, K. Womack, 1999. The persistence of IPO mispricing and the predictive power of flipping. *Journal of Finance* 48, 65-92.
- Lakonishok, Josef, Andrei Shleifer, and Robert W. Vishny, 1992, "The impact of institutional trading on stock prices," *Journal of Financial Economics* 32, 23-44.
- Lakonishok, Josef, Andrei Shleifer, and Robert W. Vishny, 1994, Contrarian Investment, Extrapolation, and Risk, *Journal of Finance* 49, 1541-1578.
- Loughran, Tim and Anand M. Vijh, 1997, Do long-term shareholders benefit from corporate acquisitions? *Journal of Finance* 52, 1765-1790
- Lynch, Anthony W., and David K. Musto, 2003, "How Investors Interpret Past Returns," *Journal of Finance* 58, 2033-2058.
- Malmendier, Ulrike, Geoffrey Tate, 2004, Who makes acquisitions? CEO overconfidence and the market's reaction, Working Paper, Stanford University.
- Masulis, Ronald W., Cong Wang, and Fei Xie, 2006, "Corporate Governance and Acquirer Returns," Forthcoming in *Journal of Finance*.
- McConnell, John J., and Henry Servaes, 1990, "Additional Evidence on Equity Ownership and Corporate Value," *Journal of Financial Economics* 27, 595-612.
- Mehran, Hamid, 1995, "Executive Compensation Structure, Ownership, and Firm Performance," *Journal of Financial Economics* 38, 163-184.
- Mikkelson, Wayne H., and Megan M. Partch, 1989, "Managers' Voting Rights and Corporate Control," *Journal of Financial Economics* 25, 263-290.
- Mikkelson, Wayne and Megan Partch, 1997, "The Decline of Takeovers and Disciplinary Managerial Turnover," *Journal of Financial Economics* 44, 205-228.
- Mitchell, Mark L. and Erik Stafford, 2000, Managerial decisions and long-term stock price performance, *Journal of Business* 73(3), 287-329
- Moeller, Sara B., Frederik P. Schlingemann, and Rene M. Stulz, 2005, Wealth destruction on a massive scale? A study of acquiring-firm returns in the recent merger wave, *Journal of Finance*, 60 (2), 757-782.
- Morck, Randall, Andrei Shleifer, and Robert Vishny, 1988, "Management Ownership and Market Valuation," *Journal of Financial Economics* 20, 293-315

Murphy, Kevin, "Executive Compensation," 1999, Handbook of Labor Economics, Vol.3.

Nofsinger, J.R., Sias, R.W., 1999, "Herding and Feedback Trading by Institutional and Individual Investors." *Journal of Finance* 54, 2263-2295

Ostrovsky, Michael, and Gregor Matvos, 2006, Cross-Ownership, Returns, and Voting in Mergers: Conflicts of Interests among Shareholders, Working Paper, Stanford Graduate School of Business and Harvard Business School.

Parrino, Robert, Sias, Richard W., and Starks, Laura T., 2003, "Voting with Their Feet: Institutional Ownership Changes around Forced CEO Turnover." *Journal of Financial Economics* 68, 3-46.

Perry, Tod and Marc Zenner 2000, "CEO Compensation in the 1990s: Shareholder Alignment or Shareholder Expropriation?" *Wake Forest Law Review* 35, 123-152.

Qiu, Lily, 2006, Which Institutional Investors Monitor? Evidence from Acquisition Activity, Working Paper, Brown University.

Rau, P. Raghavendra and Theo Vermaelen, 1998, Glamour, value, and the post-acquisition performance of acquiring firms, *Journal of Financial Economics* 49, 223-253

Romano, Roberta, 2001, "Less is More: Making Institutional Investor Activism a Valuable Mechanism of Corporate Governance," *Yale Journal on regulation* 18.

Romano, Roberta, 2003, "Does Confidential Proxy Voting Matter?" Working Paper, National Bureau of Economic Research.

Rothberg, Burton and Steven Lilien, 2005, "Mutual Funds and Proxy Voting: New Evidence on Corporate Governance," Working Paper, Baruch College.

Shivdasani, Anil, 1993, "Board Composition, Ownership Structure, and Hostile Takeovers," *Journal of Accounting and Economics* 16, 167-198.

Shleifer, Andrei and Robert Vishny 1986, "Large Shareholders and Corporate Control," *Journal of Political Economy* 94, 461-488.

Sias, R.W., and Starks, L.T., 1997, "Institutions and Individuals at the Turn-of-the-year," *Journal of Finance* 52, 1543-1562.

Sirri, Erik R., and Peter Tufano, 1998, Costly Search and Mutual Fund Flows," *Journal of Finance* 53, 1589-1622.

Sloan, Richard G., 1993, "Accounting Earnings and Top Executive Compensation," *Journal of Accounting and Economics* 16, 55-100.

Smith, Michael, 1996, "Shareholder Activism by Institutional Investors: Evidence from CalPERS," *Journal of Finance* 51, 227-252.

Smith, Clifford, and Ross Watts, 1992, "The Investment Opportunity Set and Corporate Financing, Dividend, and Financing Policies," *Journal of Financial Economics* 32, 262-292.

Stein, Jeremy C., 1988, "Takeover Threats and Managerial Myopia," *Journal of Political Economy* 96, 61-80.

Stulz, Rene M., 1988, "Managerial Control of Voting Rights: Financial Policies and the Market for Corporate Control," *Journal of Financial Economics* 20, 25-54.

Van Nuys, Karen, 1993, "Corporate Governance through the Proxy Process: Evidence from the 1989 Honeywell Proxy Solicitation," *Journal of Financial Economics* 34, 101-132.

Wermers, R., 1999, "Mutual Fund Herding and the Impact on Stock Prices," *Journal of Finance* 54, 581-622.

Wermers, R., 2000, "Mutual Fund Performance: An Empirical Decomposition into Stock-picking Talent, Style, Transactions Costs, and Expenses," *Journal of Finance* 55, 1655-1695.

Yermack, David, 1995, "Do Corporations Award CEO Stock Options Effectively?" *Journal of Financial Economics* 39, 237-269.

Zeckhauser, R., J. Patel, and D. Hendricks, 1991, "Nonrational Actors and Financial Market Behavior," *Theory and Decision* 1, 257-287.