LOCAL MUTUAL FUNDS AND EXECUTIVE COMPENSATION

by

Jin Zhang

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LOCAL MUTUAL FUNDS AND EXECUTIVE COMPENSATION

by

JIN ZHANG, B.S.,M.S.

DISSERTATION

Presented to the Faculty of

The University of Texas at Dallas

in Partial Fulfillment

of the Requirements

for the Degree of

DOCTOR OF PHILOSOPHY IN

MANAGEMENT SCIENCE

THE UNIVERSITY OF TEXAS AT DALLAS

August, 2008

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ACKNOWLEDGEMENTS

I would first like to acknowledge my deepest gratitude to Dr. Suresh Radhakrishnan, my mentor and thesis advisor, for his continual support at various stages of my doctoral studies. His unbounded energy and enthusiasm have been a great source of inspiration. He spent long hours to give me guidance. His guidance kept me in the right direction when I was unable to focus. This dissertation would not have been possible without his wisdom, feedback, and support. Words are not enough to thank Suresh for the role he has played in my life.

I am highly indebted to Dr. Ashiq Ali, Dr. William M. Cready and Dr. Xu Li for serving on my dissertation committee and providing valuable guidance and insight. They have been very kind and supportive throughout the doctoral program and especially for this dissertation. Clearly, their help has made this dissertation possible. I thank all of them for their guidance and support.

Thanks also go to all my colleagues and friends at the University of Texas at Dallas. I am very thankful to Dorothy Thompson, Hiu-leong Tsang, Ling Liu, Yue Zhang, Lucy Xie, Weining Zhang and Ali Coskun for their friendship and support.

No word can help me repay the debt I owe to my parents. I am truly grateful to my parents for their endless support. Lastly and most importantly, I thank my husband, Dongfeng Wang, for his love, affection and support throughout my life.

May, 2008

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LOCAL MUTUAL FUNDS AND EXECUTIVE COMPENSATION

Publication No. _____

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The University of Texas at Dallas, 2008

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I examine the association between local mutual fund holdings and executive compensation. I show that local mutual fund holdings are more positively associated with pay-for-performance sensitivity than nonlocal mutual fund holdings. This suggests that local mutual funds influence executive compensation, leading to higher pay-for-performance sensitivity. I find that local mutual fund holdings are more positively associated with the level of executive compensation than nonlocal mutual fund holdings. Additionally, I find that (1) the positive association between local mutual fund holding and option-grant sensitivity and (2) the positive association between local mutual fund holding and the level of executive compensation are driven by firms with low managerial ownership. This suggests that local mutual funds are more likely to influence pay-for-performance sensitivity of executives in firms where agency problem of separation of ownership and control is more severe, as proxied by low managerial ownership, and the higher pay-for-performance sensitivity imposes more risk on managers, requiring that risk-averse managers be paid more than they otherwise would be paid.

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CHAPTER 1

INTRODUCTION

Institutional investors in general choose between influencing firms' management, which benefits all investors and trading for their private benefits (Kahn and Winton, 1998; Maug, 1998; Shleifer and Vishny, 1986).[1] When the benefits from influencing firms' management exceed the costs, institutional investors will monitor and influence rather than trade (Chen et al. 2007). The costs of influencing firms' management, such as costs of gathering and analyzing information, are likely to be lower for local mutual funds than nonlocal mutual funds. Geographical proximity provides the local mutual fund managers easier access to firms' management and board of directors, and thus, costs of obtaining information about the firm is lower than their nonlocal mutual fund counterparts. Furthermore, local mutual fund managers can gain a deeper understanding of the firm's culture, and thus are more likely to effectively influence firms' management. Consistent with these arguments, Gasper and Massa (2007) show that those local mutual fund managers are in a better position to influence firms' management in corporate governance-related issues.

Institutional investors, consisting of local mutual funds, nonlocal mutual funds, and other institutional investors, are likely to influence corporate decisions. For example, Brickley et al.(1988), Bushee (1998), and Chen et al. (2007) show that institutional investors exert influence on antitakeover amendments, R&D investment decisions, and corporate mergers, respectively.

[1] I use the term *firms' management* broadly to include managers and board of directors.

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Institutional investors are also likely to influence executive compensation. In recent years, activist institutional investors have often voiced their opinion that executive compensation should be linked to corporate performance (Gillian and Starks, 2000; Smith, 1996, Hartzell and Starks, 2003). Institutional investors don't have complete information regarding executives' activities and the firm's investment opportunities, and they do not know what actions the executive will take or which of these actions will increase shareholder wealth, i.e., the hidden action and hidden information agency problems (Prendergast, 1999). In these situations, compensation is designed to provide executives with incentives to choose and implement actions that increase shareholders' wealth. Executive compensation plans that tie executives' welfare to shareholder wealth, i.e., higher pay-for-performance sensitivity, induce executives to take actions that help enhance shareholders' wealth. Hartzell and Starks (2003) find a positive association between institutional ownership concentration and the pay-for-performance sensitivity of executive compensation. These results are consistent with the notion that concentrated institutional investors influence executive compensation, leading to higher pay-for-performance sensitivity.

To summarize, I argue that institutional investors are likely to influence executive compensation. Local mutual funds, which have a lower cost of influencing firms' management due to geographical proximity, are in a better position to influence executive compensation, leading to higher pay-for-performance sensitivity. Thus, I hypothesize that the local mutual funds holdings are more positively associated with pay-for-performance sensitivity than their nonlocal counterparts.

The influence of local mutual funds on firms' management is measured with two proxies: Relative Local Weight and Local Mutual Fund Ownership. I define a mutual fund as

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"local" with respect to a firm if the investment manager is located within a 100-km radius of the firm's headquarters. The first measure of the influence of local mutual funds on firms' management is Relative Local Weight. Following Gasper and Massa (2007), Relative Local Weight is computed as the fraction of the firm held by local mutual funds relative to the total fund holdings in the firm, minus the fraction of the fund assets managed by local mutual funds. The fraction of the fund assets managed by local mutual funds is subtracted from the fraction of the firm held by local mutual funds relative to the total fund holdings in the firm because mutual fund managers are not uniformly located across the U.S. Thus, I control for the location of mutual fund managers. The second measure of influence of local mutual fund on firms' management is Local Mutual Fund Ownership, computed as the fraction of the firm's outstanding shares held by local mutual funds.

I regress change in total compensation on the interaction between change in shareholders' wealth and local (nonlocal) mutual fund holding variables, controlling for change in shareholders' wealth in the previous period, Tobin's q, and market capitalization. I find that Relative Local Weight is positively associated with pay-for-performance sensitivity, and Local Mutual Fund Ownership is more positively associated with pay-for-performance sensitivity than nonlocal Mutual Fund Ownership. The results provide support for the hypothesis that local mutual funds have an advantage relative to nonlocal mutual funds in influencing firms' management in executive compensation.

I find that local mutual fund holdings are more positively associated with the level of executive compensation than nonlocal mutual fund holdings. I also find that (1) the positive association between local mutual fund holding and option-grant sensitivity and (2) the positive association between local mutual fund holding and the level of executive

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compensation are driven by firms with low managerial ownership. This suggests that (1) local mutual funds are more likely to influence pay-for-performance sensitivity of executives in firms where agency problem of separation of ownership and control is more severe, as proxied by low managerial ownership, and (2) the higher pay-for-performance sensitivity imposes more risk on managers, requiring that risk-averse managers be paid more than otherwise.

This study contributes to the literature in the following ways:

First, the positive association between pay-for-performance sensitivity and local mutual fund holdings is consistent with local mutual fund influencing firms' management in executive compensation. There is no apparent consensus in the literature on the explanations for local bias. A number of studies argue that local bias is due to the information advantage local investors possess (Coval and Moskowitz, 1999; Coval and Moskowitz, 2001). However, some studies present evidence that local bias cannot be explained by the information advantage argument (Benartzi, 2001; Huberman, 2001; Zhu, 2002). Based on my findings, a rationale for local bias by mutual funds is likely to be their ability/effectiveness to influence firms' management.

Second, I extend Hartzell and Starks (2003) results on the positive association between pay-for-performance sensitivity and institutional holdings to include local mutual fund holdings. I find results consistent with Hartzell and Starks' (2003) monitoring and influencing firms' management, and thus, provide support for institutional investors' role and local mutual funds' role in particular corporate governance. The results also provide support for the hypothesis that both monitoring by institutional investors and managerial incentive

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compensation could coexist because of a needed interaction between the monitoring of managers and incentive compensation.

Third, since my hypothesis compares local and nonlocal mutual funds, this context controls for clientele effect. In particular, Hartzell and Starks' (2003) results could be driven by the clientele effect: the clientele effect implies that institutional investors buy and hold stocks in firms with higher pay-for-performance sensitivity. If the clientele effect is similar for all institutional investors including local mutual funds, nonlocal mutual funds, and other institutional investors, the hypothesis comparing local mutual funds and nonlocal mutual funds controls for clientele effect.

The remainder of the dissertation is organized as follows: Chapter 2 provides a review of related literature, the motivation and the formation of research questions. Chapter 3 investigates the association between local mutual fund holdings and pay-for-performance sensitivity. Chapter 4 investigates the association between local mutual fund holdings and the level of executive compensation. Chapter 5 provides some concluding remarks.

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CHAPTER 2

BACKGROUND, MOTIVATION AND RESEARCH QUESTIONS

2.1 Background

2.1.1 Investors' Home bias/Local bias

2.1.1.1 Investors' Home Bias

A number of studies show that institutional investors are more likely to hold firms incorporated in the investor's home country than firms incorporated in foreign countries (Edison and Warnock, 2003; French and Poterba, 1991; Lewis, 1999; Kang and Stulz, 1997; Tesar and Werner, 1995). This is referred to as the "home bias." [2]

French and Poterba (1991) construct estimates of the international equity portfolio holdings of investors in the U.S., Japan, and Britain. They document that U.S. investors allocate nearly 94 percent of their funds to domestic securities, even though the U.S. equity market comprised less than 48 percent of the global equity market in 1989. In addition, Japanese investors allocate nearly 98 percent of their funds to domestic securities, while British investors allocate 82 percent of their funds to domestic securities in 1989. The evidence suggests the presence of home bias.

Tesar and Werner (1995) examine international investment patterns in Canada, Germany, Japan, the UK and the U.S. during the 1970-1990 periods. They document strong

[2] See Table 2.1. for literature review. All the tables are presented at the end of the dissertation.

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evidence of a home bias in these five countries. They show that the foreign holdings of institutional investors in these five countries are well below current limitations on foreign asset holdings of institutional investors. Thus, transaction costs are an unlikely explanation for home bias.

Lewis (1999) uses a simple mean-variance model to explain the equity home bias puzzle. He treats the U.S. market as the domestic asset and the European, Australian and Far Eastern market as the foreign asset. Lewis (1999) shows the foreign share in the minimum-variance portfolio is about 40%, while the observed foreign portfolio share is only 8%. Since no degree of risk intolerance can justify such a low level of foreign portfolio share, the evidence suggests the presence of home bias. Lewis (1999) also examines explanations for home bias in the literature and finds that no single explanation is the definitive one.

Kang and Stulz (1997) use data on foreign stock ownership in Japan from 1975 to 1991 to examine the determinants of the home bias in portfolio holdings. They find that foreign investors invest primarily in large firms in Japan and that foreign investors invest more in small firms that have a high exports to sales ratio. However, that ratio is not important for large firms. Their evidence suggests that a lack of knowledge about a firm's existence is one explanation for home bias.

Edison and Warnock (2003) use U.S. investors' holdings of every stock in nine emerging markets, collected in conjunction with comprehensive surveys, to analyze U.S. investors' portfolios of emerging market securities. They find U.S. investors invest more in firms that are large, have fewer restrictions on foreign ownership, or are cross-listed on U.S. exchange. Their results suggest that information asymmetries play an important role in home bias.

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To summarize, initial explanations for home bias include (See Lewis, 1999 for a review):

1. Domestic stocks provide better hedges for domestic risks.

2. The presence of barriers to international investment, e.g., transaction costs, international taxes, government restrictions, etc.

3. Frictions in goods markets.

Most empirical studies suggest that these effects are too small to account for the degree of home bias observed in the data (Lewis, 1999; Tesar and Werner, 1995). More recent research provides an information based rationale for home bias: a lack of knowledge that a given firm exists, a poor financial environment and low credibility of financial information (Kang and Stulz, 1997; Edison and Warnock, 2003).

2.1.1.2 Investors' Local Bias

The preference for investing close to home also applies to portfolios of domestic stocks: investors exhibit a strong preference for investing in local companies. A number of studies document this phenomenon, referred to as "local bias" (Coval and Moskowitz, 1999; Huberman, 2001; Grinblatt and Keloharju, 2001).

Coval and Moskowitz (1999) investigate whether investors have a preference for geographically proximate investments. They use U.S. mutual fund holdings to show that U.S. mutual fund managers have a bias towards holding local companies in their domestic portfolios. They argue that asymmetric information between local and nonlocal investors may drive the preference for geographical proximity in investments.

Coval and Moskowitz (2001) analyze the equity holdings of a large sample of actively managed mutual funds. They find that fund managers earn substantial abnormal

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returns from their local investments relative to their nonlocal investments. Therefore, they argue that investors trade local securities at an information advantage and the local information advantage leads to local bias.

Empirical study documents local bias in other countries. Grinblatt and Keloharju (2001) focus on open market purchases and sales, as well as investors' holdings in Finnish firms. They find that Finnish investors are more likely to hold, buy, and sell the stocks of Finnish firms that are located close to the investor. They also show that the marginal effect of distance is less for firms that are more nationally known, for distances that exceed 100 kilometers, and for investors with more diversified portfolios.

Huberman (2001) focuses on the geographic distribution of shareholders of Regional Bell Operation Company (RBOC). He finds that investors are much more likely to invest in an RBOC that operates in their areas than in any other RBOC. He argues that familiarity induces investors to hold stocks of local companies. He also points out that such familiarity may not reflect advantageous information.

Benartzi (2001) analyzes stockholdings in employer stock and shows that employees invest 23% of their discretionary retirement plan contributions in company stock. He finds that while employees tend to allocate more to company stock in firms that have done well in the past, these companies do not outperform other firms. He argues that the information advantage argument cannot explain the case for investors' level of stockholdings in the companies for which they work.

Zhu (2002) uses data from a large U.S. discount brokerage to examine individual investors' local bias. Zhu (2002) finds that individual investors tend to invest in companies closer to them relative to the market portfolio. He also finds that individual investors are

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more likely to invest in remote companies that spend heavily on advertising. Zhu (2002) argues that individual investors' local bias is not related to information advantage since accounting numbers and information asymmetry matter less to individual investors' local bias than to that of institutional investors. Familiarity with local companies and ready reaction to local information are explanations for local bias.

To summarize, there is no apparent consensus in the literature on the explanations for local bias. A number of studies argue that local bias is due to information advantage local investors possess (Coval and Moskowitz, 1999; Coval and Moskowitz, 2001). However, some studies present evidence that local bias cannot be explained by the information advantage argument (Benartzi, 2001; Huberman, 2001; Zhu, 2002).

2.1.2 Institutional Investors and Executive Compensation

2.1.2.1 Institutional Investors Activism

Institutional investors have become increasingly important as shareholders in the U.S. financial market. Institutional ownership increased dramatically during the 1980s and 1990s (Gillan and Starks, 2000). As institutional ownership has increased, institutional investors' roles as shareholders have evolved. Institutional investors became more active participants in corporate governance during the late 1990s. A number of studies find that institutional investors influence corporate decisions (Brickely, 1988; Bushee, 1998; Chen, 2007).

Bushee (1998) examines whether institutional investors create or reduce incentives for firms' management to reduce investment in research and development (R&D) to meet short-term earnings targets. They find that firms' management are less likely to cut R&D to reverse an earnings decline when institutional ownership is high. The evidence suggests that

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institutional investors serve a monitoring role in reducing pressures for myopic behavior, e.g., reducing R&D to meet earnings targets.

Brickley et al. (1988) examine the effects of institutional monitoring on antitakeover amendments. They find that institutional investors and other blockholders vote more actively on antitakeover amendments than other investors. They also find that institutional investors that are less subject to management influence, such as mutual funds, and pension funds, are more likely to oppose management than other institutional investors. Their evidence suggests that institutional investors and other blockholders have a strong incentive to be involved in voting on corporate issues, and they can exert influence on antitakeover amendments.

Chen et al. (2007) find that the presence of large independent long-term institutional investors (ILTIs) in bidding firms is associated with significantly fewer bad deals being announced, compared to the case when large ILTIs are absent. Chen et al. (2007) also find a positive association between large ILTI holdings and the probability of a bad bid being reversed, suggesting that large ILTIs encourage managers to walk away from poor corporate mergers.

Gasper and Massa (2007) investigate how local investors affect the way a firm was monitored, the liquidity of its shares, and its stock price. They use the data on local mutual fund holdings to construct a new measure of local ownership. They find that local ownership improves corporate governance and induces value-enhancing decisions, while reducing liquidity. Their results suggest that geographical proximity is an inexpensive way to obtain information about a firm. Local investors can gather valuable information about the firm, which they can use to exert influence.

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2.1.2.2 The Influence of Institutional Investors on Executive Compensation

Institutional investors can influence executive compensation. Institutional investors often voice their opinions that managerial compensation should be linked to corporate performance (Gillan and Starks, 2000; Smith, 1996; Hartzell and Starks 2003). Empirical studies show an association between holdings by one type of institutional investor and executive compensation (Almazan et al., 2005).

Hartzell and Starks (2003) examine the effects of institutional monitoring on executive compensation. They find a positive association between concentrated institutional investors measured by institutional ownership concentration, i.e., the holdings of the top 5 largest institutional investors as a percentage of institutional holdings, and the pay-for-performance sensitivity of executive compensation. They also find a negative association between institutional ownership concentration and the level of executive compensation. These results are consistent with the notion that concentrated institutional investors influence executive compensation.

Almazan et al. (2005) examine the association between costs of monitoring and the effects of institutional monitoring on executive compensation. They find that the effectiveness of institutional investors' monitoring can be influenced by the costs of monitoring. They classify institutional investors into two groups: active institutional investors (investment companies and independent investment advisers) and passive institutional investors (others). They argue that the active institutional investors have lower costs of monitoring than the passive institutional investors. Accordingly, they find that active institutional investors are more positively associated with pay-for-performance sensitivity

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than passive institutional investors, suggesting active institutional investors play a more active monitoring role than the passive institutional investors.

2.2 Motivation and Research Questions

A number of studies argue that local bias is due to information advantage local investors possess. For example, Coval and Moskowitz (1999) argue that asymmetric information between local and nonlocal investors may drive the preference for geographical proximity investments. Coval and Moskowitz (2001) find that local mutual funds earn substantially abnormal returns on their nearby equity holding, suggesting local mutual funds have an information advantage. However, there is no apparent consensus in the literature on whether local investors have any advantage. For example, Zhu (2002) argues that individual investors' local bias is not related to information advantage.

Institutional investors can influence executive compensation. Institutional investors have voiced their opinions that managerial compensation should be linked to corporate performance (Smith, 1996; Gillan and Starks, 2000; Hartzell and Starks, 2003). Hartzell and Starks (2003) find a positive association between concentrated institutional investors measured by institutional ownership concentration, i.e., the holdings of the top 5 largest institutional investors as a percentage of institutional holdings and the pay-for-performance sensitivity of executive compensation. They also find a negative association between concentrated institutional investors and the level of executive compensation. These results are consistent with the notion that concentrated institutional investors influence executive compensation.

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The findings from these two streams of literature, i.e., investor's local bias and institutional investors and executive compensation provide the motivation to examine whether institutional investors' local bias is associated with executive compensation.

In this dissertation, the following research questions are addressed:

a. Are local mutual funds more likely to influence pay-for performance sensitivity than nonlocal mutual funds?
b. Are local mutual funds more likely to influence the level of executive compensation than nonlocal mutual funds?

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CHAPTER 3

LOCAL MUTUAL FUNDS AND PAY-FOR-PERFORMANCE SENSITIVITY

In this chapter, I examine the association between local mutual fund holdings and pay-for-performance sensitivity. Section 3.1 develops my hypothesis; Section 3.2 presents the sample, variable definition and research design; Section 3.3 addresses my empirical analysis.

3.1 Hypothesis Development

Theoretical work by Shleifer and Vishny (1986), Maug (1998), and Kahn and Winton (1998) highlights the choice institutional investors face between influencing corporate decisions which benefits all investors versus simply trading their shares for private gain. For example, Kahn and Winton (1998) show that there is a trade-off for institutional investors between making gains from trading on their private information and using that same information to influence the corporate decisions. Reflecting this possibility, empirical work is mixed on whether institutional investors influence corporate decisions. Brickley et al. (1988), Bushee (1998), Hartzell and Starks (2003), and Almazan et al. (2005) show that institutional investors exert influence on antitakeover amendments, R&D investment decisions, and CEO compensation. However, Parrino et al. (2003) find that rather than exerting effort to influence firms' management, some institutional investors vote with their feet by selling their shares when they are dissatisfied with corporate performance. Gaspar et al. (2005) find that institutional investors with high-turnover portfolios exert little influence over firms' management, with regard to acquisition decisions.

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Chen et al. (2007) argue that the trade-off between influencing firms' management and trading depends on the costs and benefits of influencing firms' management. They argue that the costs of influencing firms' management decreases with the size of the institutional stake, the independence of the institutional investors, and the length of time the institutional investor has invested in the firm. Chen et al. (2007) also examine the trading activity of independent long-term institutional investors with large ownership stakes and find that they focus on influencing firms' management, rather than trading for profit. Almazan et al. (2005) find that the effectiveness of institutional investors' influencing firms' management can be affected by the costs of influencing firms' management. They classify institutional investors into two groups: active institutional investors (investment companies and independent investment adviser) and passive institutional investors (others). They argue that the active institutional investors have lower costs of influencing firms' management than passive institutional investors. Accordingly, they find that active institutional investors are more positively associated with pay-for-performance sensitivity than passive institutional investors, suggesting that active institutional investors influence executive compensation more intensively than the passive institutional investors. To summarize, institutional investors are likely to influence firms' management if they are likely to be effective, i.e., it is not too costly to do so.

The costs of influencing firms' management, such as costs of gathering and analyzing information, are lower for local mutual funds than nonlocal mutual funds. Geographical proximity provides the local fund managers easier access to firms' management and board of directors, and thus the costs of obtaining information about the firm is lower than their nonlocal mutual fund counterparts. Furthermore, local mutual fund managers can gain a

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deeper understanding of firms' culture and are more likely to influence firms effectively. Consistent with these arguments, Gasper and Massa (2007) show that local mutual fund managers, who are in close proximity to company headquarters, are in a better position to influence firms' management in governance-related issues.

Institutional investors, consisting of local mutual funds, nonlocal mutual funds, and other institutional investors, are likely to influence corporate decisions. For example, Brickley et al. (1988), Bushee (1998), and Chen et al. (2007) show that institutional investors exert influence on antitakeover amendments, R&D investment decisions and corporate mergers, respectively.

Institutional investors are also likely to influence executive compensation. In recent years, activist institutional investors have voiced their opinion that executive compensation should be linked to corporate performance (Gillian and Starks, 2000; Smith, 1996, Hartzell and Starks, 2003). Institutional investors do not have complete information regarding executives' activities and the firm's investment opportunities, and they do not know what actions the executive will take or which of these actions will increase shareholder wealth. This is a characterization of the hidden-action and hidden-information agency problems. Executive compensation is designed to provide executives with incentives to choose and implement actions that increase shareholders' wealth and mitigate the hidden-action and hidden-information agency problems. In particular, executive compensation plans that tie executives' welfare to shareholder wealth, i.e., higher pay-for-performance sensitivity, induce executives to take actions that help enhance shareholders' wealth. Hartzell and Starks (2003) find a positive association between institutional investors' holding concentration and the pay-for-performance sensitivity of executive compensation. These results are consistent

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with the notion that concentrated institutional investors influence executive compensation, leading to higher pay-for-performance sensitivity.[3]

The Securities and Exchange Commission (SEC) introduced mutual fund proxy voting disclosure rules in 2003, due to the concerns that conflicts of interest may cause mutual fund managers to vote in firm proxy contests against the interests of investors. The SEC believed that disclosure of proxy notes would make it more difficult for mutual funds to act against the interest of fellow investors. Several studies examine proxy data. For example, Rothberg and Lilien (2006) find that mutual funds voted 66 percent of the time in managements' favor on issues of compensation. Levitz (2006) find that mutual funds usually support executive compensation plans and oppose shareholder attempts to reign them that compensation. David and Kim (2007), based on an analysis of these newly-revealed proxy votes for 2004, find that the all the cases (45 cases) concerning limiting executive pay were consistently opposed by mutual funds. These results suggest that mutual funds are more likely to influence executive compensation before proxy voting.

Investors' direct control over executive pay is limited. Shareholders can directly approve or veto just two forms of compensation: stock plans and certain tax-advantaged, performance-based plans (Smith and Swan, 2007). Although shareholders have no direct influence over most forms of pay, including salary, perks, retirement plans or how gains on

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[3] Theoretical research suggests that institutional investors' influencing corporate decisions and managerial incentive compensation could coexist because of interaction between influencing corporate decisions and incentive compensation. For example, Chidambaran and John (1999) show the interrelations between influencing corporate decisions and incentive compensation. They develop a theoretical model to investigate the conditions under which it is optimal for managers to cooperate with large institutional investors and facilitate influencing corporate decisions. They show that both the manager's decision to cooperate and the institutional investors' decision to influence firms' management depend on the incentive compensation. In addition, incentive compensation depends on influencing corporate decisions by institutional investors.

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certain stock grants might inflate other forms of compensation in the future, institutional investors can use their proxy voting strength to oppose the reelection of directors they believe do not support their agenda. As such, mutual funds are likely to influence executive compensation before proxy voting since they don't have direct control over most of forms of compensation at proxy voting.

To summarize, I argue that institutional investors are likely to influence compensation, i.e., higher pay-for-performance sensitivity if they can do so effectively, i.e., at a lower cost. Local mutual funds, who have lower costs of influencing firms' management due to geographical proximity, are in a better position to influence executive compensation, leading to higher pay-for-performance sensitivity.

This leads to the following hypothesis:

Hypothesis: Local mutual fund holdings are more positively associated with pay-for-performance sensitivity than their nonlocal counterparts.

A countervailing argument to this hypothesis is based on the institutional investor "clientele effect." Institutional investors could also influence a firm's compensation structure indirectly through their preferences and trading. That is, firms may adopt compensation structures preferred by some investors. For example, executive compensation structures with high pay-for-performance sensitivity may be adopted to attract institutional investors. In support of this hypothesis, Maxey and Wolde (1998) find that executive compensation is a factor in a majority of mutual funds managers' investment decisions based on a survey of mutual fund managers. Institutional investors may self-select into firms with certain executive compensation characteristics, such as, high pay-for-performance sensitivity. As such, an alternative explanation for a positive association between local mutual funds and

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pay-for-performance sensitivity is the "clientele" effect. However, if the clientele effect is similar for all institutional investors including local mutual funds, nonlocal mutual funds and other institutional investors, the hypothesis comparing local mutual funds and nonlocal mutual funds cannot be explained by the clientele effect.

3.2 Sample, Variable Definitions & Research Design

3.2.1 Sample

The sample consists of firms in the Standard & Poor's Executive Comp database from 2004 through 2006. The sample is restricted to this period because CRSP Mutual Fund database provide the zip codes for mutual funds starting from 2004. Institutional holdings (mutual fund holdings) data are collected from the Thomson Financial CDA Spectrum database S34 (S12). The CRSP Mutual Fund database is used to obtain location data (zip code) for each investment manager of the mutual fund. The Bloomberg database is used to obtain location data (zip code) for the headquarters of each company based on companies' CUSIP. Financial statement data are obtained from the CRSP/Compustat merged Quarterly Industrial and Research files. Stock price data are obtained from the CRSP monthly stock return files. To be included in the final sample, a firm must have data available from CRSP, Compustat, Execucomp, CDA Spectrum and Bloomberg for a given year. The sample includes actively managed, equity funds, located in the US. Similar with Gasper et al. (2007), equity funds are defined as the funds with investment objective codes of AG (Aggressive Growth), GI (Growth Income), LG (Long-term Growth), IN (Income) and BL (Balanced). In addition, a firm is required to be held by at least 5 mutual funds because otherwise

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comparing the local and non-local mutual funds are not likely to be relevant. These requirements result in a final sample of 12,008 firm-executive-year observations.

3.2.2 Variable Definitions

3.2.2.1 Measures of Compensation

Data on executive compensation are obtained from the Standard & Poors' EXECOMP database. Following Jensen and Murphy (1990) and Hartzell and Starks (2003), I measure executive compensation as total compensation computed as the sum of salary, bonus, option and stock grants, long term incentive plan payouts, and other compensation.

Following Jensen and Murphy (1990), pay-for-performance sensitivity is defined as the dollar change in executives' wealth associated with a dollar change in the wealth of shareholders. Higher pay-for-performance sensitivity is interpreted as indicating a closer alignment of interests between executives and their shareholders. Change in executives' wealth is measured as change in total compensation, and change in the wealth of shareholders is measured as the difference in market capitalization from period t-1 to period t. I use the change in shareholders' wealth as an explanatory variable and interacted local mutual fund holdings and nonlocal mutual fund holdings with change in shareholders' wealth as in Hartzell and Starks (2003) to capture the incremental effect of mutual funds on pay-for-performance sensitivity (see equation (3.3a) & (3.3b) discussed later).

Following Hartzell and Starks (2003), I also use the Yermack (1995) approach to measure pay-for-performance sensitivity with the option-grant sensitivity. The option-grant sensitivity measures the change in value of the executive options for a dollar change in the value of the firm. This involves calculating the Delta: Delta is measured as $\partial C/\partial P$, where C is the value of the call option and P is the price of the stock.

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Following Yermack (1995), Delta (Δ) is computed as: [4]

$$\Delta = e^{-dt}\Phi\left[\frac{\ln(P/E)+T(r-d+\sigma^2/2)}{\sigma\sqrt{T}}\right] \tag{3.1}$$

The computation of the parameters of equation (3.1) is described below.

P = price of the underling stock at time of award. Following Yermack(1995), I assume that P equals E, the exercise price of the options, because firms usually set exercise price equal to current stock price.

d = ln(1+dividend rate), with dividend rate defined as the last dividend paid during the fiscal year, multiplied by four, divided by year-end stock price. When companies do not pay dividends quarterly, this variable is based on the sum of the entire year's dividends.

r = ln(1+interest rate), where interest rate is the yield on ten-year U.S. Treasury bonds during the last month of the fiscal year.

t = life of the options (in years), equal to the longest period for which options may be granted according to a firm's most recently approved plan. Following Yermack (1995), I set the options' life equal to 10 years, which is the duration of most option grants and is the limit imposed by the Internal Revenue Service (IRS) for options to receive favorable tax treatment since the maximum duration is not reported.

σ = annualized volatility, computed as the square root of the sample variance of daily log of stock returns during the last 120 trading days of the fiscal year, multiplied by 254, the number of trading days in a typical year.

The Delta of the option grant is multiplied with the proportion of options granted where the proportion of options grants is computed as the number of options granted divided

[4] The description of delta is borrowed from Yermack (1995).

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by the number of shares outstanding at the beginning of the year. Next this number is multiplied by 1,000, giving the dollar change in managerial wealth per $1,000 change in shareholder wealth. This option-grant sensitivity measure is an ex-ante flow-based measure of pay-for-performance sensitivity.

3.2.2.2 Measures of Mutual Fund Influence

Data on institutional investors' holdings are obtained from Thomson Financial sets that are also known as CDA/Spectrum S12 ('S-one-two') and S34 ('S-three-four').CDA/Spectrum S12 covers individual mutual funds and CDA/Spectrum S12 covers all investment companies. Mutual Fund (S12) and Investment Company (S34) sets are related and share a similar structure. The basic relationship between the sets come from the fact that almost every fund in the S12 set has a manager in the S34 set, and the latter provides aggregated totals for the holdings of all funds under the manger's control. [5]

Data on mutual funds' holdings are obtained from both the Thomson Financial/ Spectrum database (S12) and the CRSP Survivor Bias Free US Mutual Fund database. Thomson Financial's Mutual Fund Database provides quarterly holdings for each individual fund, and the CRSP Mutual Fund database provides information about individual fund managers. The CRSP Mutual Fund database is used to obtain location data (zip code) for investment managers. The CRSP Survivor Bias Free US Mutual Fund database is merged with Thomson Financial/ Spectrum database of Mutual Fund Holdings. The merging procedure, which follows the suggestion of Gasper and Massa (2007), proceeds as follows. First, the datasets are merged based on fund ticker. Fund ticker is an unofficial way to identify a fund and there is no guarantee that it is unique. Second, an "eye match" is

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performed. That is, I manually compare funds against each other. The quality of this match is very high, and the funds match represents 89% in terms of number of observations.

The Bloomberg database is used to obtain location data (zip code) for the headquarters of each company based on the companies' CUSIP. Next, the corresponding latitude and longitude from the National Zip Code database is obtained. With data on latitudes and longitudes for firms and mutual funds, I calculate the kilometric distance between each firm and the funds that hold the stock.[6] Following Gasper and Massa (2007), the distance $d_{i,j}$ between fund i and stock j is given by:

$$d_{i,j} = \arccos(\text{deglatlon}) * 2\pi r/360, \text{ where deglatlon} = \cos(lat_i)*\cos(lon_i)*\cos(lat_j)*\cos(lon_j) + \cos(lat_i)*\sin(lon_i)*\cos(lat_j)*\sin(lon_j) + \sin(lon_i)*\sin(lon_j) \quad (3.2)$$

where lat and lon are fund and firm latitudes and longitudes, and r is the radius of the earth (approximately 6,378km).

A mutual fund is considered as "local", with respect to a firm, if the investment manager is located within a 100-km radius of the firm's headquarters.

The first measure of influence of local mutual fund on firms' management is Relative Local Weight. Following Gasper and Massa (2007), Relative Local Weight (denoted Rel_Local_Weight) is computed as:

$$\text{Rel\_Local\_Weight} = \frac{\sum_{i \in N_j} V_{i,j}}{\sum_{i \in M} V_{i,j}} - \frac{\sum_{i \in N_j} A_i}{\sum_{i \in M} A_i} \quad (3.3)$$

where N_j is the set of local mutual funds (within 100 km of the headquarters of firm j), M is the universe of mutual funds, $V_{i,j}$ is the dollar value of fund i's stake in stock j, and A_i is the

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[5] For example, Fidelity (MGRNO=27800 in the S34 set) reports as a single entity, aggregating the holdings of all funds in the Fidelity family (such as Magellan, FUNDNO=21858 in the S12 set).

[6] The sample is restricted to firms and funds located in the U.S.

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total asset value of fund i. The first-term in equation (2), i.e., $\frac{\sum_{i \in N_j} V_{i,j}}{\sum_{i \in M} V_{i,j}}$, is Raw Local Weight (denoted Raw_Local_Weight), computed as the fraction of the firm held by local mutual funds relative to the total fund holdings in the firm. The second-term in equation (2), i.e., $\frac{\sum_{i \in N_J} A_i}{\sum_{i \in M} A_i}$, is the fraction of the fund assets managed by funds within the 100km vicinity of firm j. This term is subtracted from Raw_Local_Weight to control for the fact that fund managers are not uniformly located across the U.S. A firm located in a rural area probably has fewer fund managers located within a 100 km vicinity than a firm located in an urban area. A simple comparison of the Raw_Local_Weight would be misleading, because firms in remote locations are likely to have lower ratios of Raw_Local_Weight due to the fact that there are fewer mutual funds around them. Another interpretation of the second-term, i.e., $\frac{\sum_{i \in N_J} A_i}{\sum_{i \in M} A_i}$, is that it measures the expected level of local investment. Hence, equation (2) represents the excess local investment in one firm relative to the benchmark value that would be expected to observe for the particular locality in which the firm is headquartered.

The second measure of influence of local mutual fund on firms' management is Local Mutual Fund Ownership. Local Mutual Fund Ownership (denoted Local_MF_Ownership) is computed as the fraction of shares outstanding that are held by local mutual funds. Correspondingly, Non-local Mutual Fund Ownership (denoted Nonlocal_MF_Ownership) is computed as the fraction of shares outstanding that are held by nonlocal mutual funds. Thus, Local_MF_Ownership plus Nonlocal_MF_Ownership equals the total mutual fund ownership (denoted MF_Ownership). Non Mutual Fund Institutional Ownership (denoted

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NonMF_Ins_Ownership) is computed as the fraction of shares outstanding that are held by institutional investors minus the fraction of shares outstanding that are held by mutual funds.[7]

The difference between the two measures, Rel_Local_Weight and Local_MF_Ownership, are as follows: first, the deflator of Rel_Local_Weight is the number of shares held by mutual funds and not the total number of shares outstanding. Rel_Local_Weight reflects the relative proxy voting strength of local mutual funds, compared to nonlocal mutual funds. The deflator of Local_MF_Ownership is the total number of shares outstanding. This measure reflects the proxy voting strength of local mutual funds. Second, as discussed before, the Rel_Local_Weight measure controls the fact that fund managers are not uniformly located across the US. The second term in equation (2), i.e., $\frac{\sum_{i \in N_J} A_i}{\sum_{i \in M} A_i}$, is used to control for the fact that a firm located in a rural area is likely to have fewer fund managers located within a 100 km vicinity than a firm located in an urban area.

[7] Details on the holdings of individual funds are available in the S12 dataset, while the aggregate for all individual funds is in the S34 dataset. The documentation manual is available in Wharton Research Data Services (http://wrds.wharton.upenn.edu/ds/tfn/manuals/WRDS-TFN200402.pdf) Fund numbers (FUNDNO's) found in the S12 dataset are mapped to the manager numbers (MGRNO's) found S34 dataset a quarterly basis. Institutional investors consistently report manager holdings on a quarterly basis. However, the individual mutual fund holding is only required to be reported semiannually. In my sample, most individual mutual funds do report their holding quarterly. In addition, mutual fund manager holdings in the S34 dataset may be greater than a simple aggregate of its funds because it manages investment vehicles for trusts, pensions, and individuals that are technically not mutual funds. To calculate Non MF institutional Ownership, I first merge S12 set and S34 set together, then subtract all the individual fund holdings that have a manager in S34 set from that managers' aggregate holding.

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3.2.3 Research Design

3.2.3.1 Executive Compensation Is Total Compensation

I augment Hartzell and Starks (2003) model by including local and nonlocal mutual fund holding variables and estimate the following equations to test the hypothesis. Equation (3.4a) uses the Relative Local Weight measure, while equation (3.4b) uses the Local Mutual Fund Ownership and Non-local Mutual Fund Ownership measures.

$$\Delta \text{ Manager's Compensation}_{i,t} = \alpha_0 + \beta_1 \Delta\text{Shareholder Wealth}_{i,t-1} + \Delta\text{Shareholder Wealth}_{i,t} * [\beta_2 \text{Rel\_Local\_Weight}_{i,t-1} + \beta_3 \text{MF\_Ownership}_{i,t-1} + \beta_4 \text{NonMF\_Ins\_Ownership}_{i,t-1} + \beta_5 \text{Ins\_Concentration}_{i,t-1} + \Sigma \beta_k \text{other control variables}_{i,t}] + \Sigma \beta_y \text{ year dummy variables} \quad (3.4a)$$

$$\Delta\text{Manager's Compensation}_{i,t} = \alpha_0 + \beta_1 \Delta\text{Shareholder Wealth}_{i,t-1} + \Delta\text{Shareholder Wealth}_{i,t} * [\beta_2 \text{Local\_MF\_Ownership}_{i,t-1} \beta_3 \text{Nonlocal\_MF\_Ownership}_{i,t-1} + \beta_4 \text{NonMF\_Ins\_Ownership}_{i,t-1} + \beta_5 \text{Ins\_Concentration}_{i,t-1} + \Sigma\beta_k \text{other control variables}_{i,t}] + \Sigma\beta y \text{ year dummy variables} \quad (3.4b)$$

where Manager's Compensation is measured by total compensation. Total compensation is the sum of the manager's salary, bonus, stock and option grants, and other compensation. ΔManager's Compensation is the change in total compensation between period t-1 and period t. Rel_Local_Weight is computed as Raw_Local_Weight minus the fraction of the fund assets managed by funds within 100km of the stock. Raw_Local_Weight is the fraction of the firm held by local mutual funds relative to the total fund holdings in the firm. Local_MF_Ownership is computed as the fraction of shares outstanding that are held by local mutual funds. Nonlocal_MF Ownership is computed as the fraction of shares outstanding that are held by non local mutual funds. NonMF_Ins_Ownership is computed as the fraction of shares outstanding that are held by institutional investors minus the fraction of shares outstanding that are held by mutual funds. MF_Ownership in equation (3.4a) is total mutual fund ownership, which is equal to Local_MF_Ownership plus

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Nonlocal_MF_Ownership. Ins_Concentration is institutional ownership concentration, defined as the holdings of the top 5 largest institutional investors as a percentage of institutional holdings. ΔShareholder Wealth is defined as the change in market capitalization from period t-1 to t. Market capitalization is the product of shares outstanding(Compustat yearly data 24) and year-end price per share(Compustat yearly data 25), in millions of dollars. [8] Tobin's q is the sum of the market capitalization and book value of assets (Compustat yearly data 6), less book value of common equity (Compustat yearly data 60), all divided by the book value of assets (Compustat yearly data 6). CEO is an indicator variable that equals one if the executive is a CEO, zero otherwise.

Based on the hypothesis, I expect (a) β_2 in equation (3.4a) to be positive, and (b) β_2 to be greater than β_3 in equation (3.4b).

3.2.3.2 Executive Compensation Is Option-Grant-Sensitivity

Following Yermack (1995), Hatzell and Starks(2003), and Almazan et al. (2005), I use option-grant sensitivity to measure pay-for-performance sensitivity. I use option-grant sensitivity to measure pay-for-performance sensitivity for several reasons. First, option-grants become an increasing important component of executive pay (Murphy 1998). Second, analyzing the option grants is important because of the increasing interest by institutional investors in firms' option compensation (Hartzell and Starks, 2003). Thus, if mutual fund influence exists, one would expect it to be prominent in this component of pay. Third, option-grant sensitivity is an ex ante measure, in contrast to ex post pay-for-performance sensitivity regressions based on other forms of compensation (Hatzell and Starks, 2003; Almazan et al.,

[8] Smith and Swan (2007) use the log of market capitalization to measure firm size instead of Hartzell and Starks' (2003) size measure, and find that pay-for-performance sensitivity is decreasing in

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2005). Option-grant sensitivity can be directly calculated using observed option-grant data and is not subject to the noise inherent in using slope coefficient as sensitivity estimates.

To analyze the association between option-grant sensitivity and local mutual fund holdings, I employ a Tobit model. Many firms do not pay their managers with stock options, and even those firms that do use options do not necessarily grant them every year. Tobit model is necessary since option-grant sensitivity is zero for a nontrivial fraction of the sample, but is roughly continuously distributed over positive value. I estimate the following equations to test the hypothesis. Equation (3.5a) uses the Relative Local Weight measure, while equation (3.5b) uses the Local Mutual Fund Ownership and Non-local Mutual Fund Ownership measures.

$$\Delta(\text{Value of Options Granted per \$1000 in Shareholder Wealth})_{i,t} = \alpha_0 + \beta_1 \Delta\text{Shareholder Wealth}_{i,t} + \beta_2 \Delta\text{Shareholder Wealth}_{i,t-1} + \beta_3\ \text{Rel\_Local\_Weight}_{i,t-1} + \beta_4\ \text{MF\_Ownership}_{i,t-1} + \beta_5 \text{NonMF\_Ins\_Ownership}_{i,t-1} + \beta_6\ \text{Ins\_Concentration}_{i,t-1} + \Sigma\ \beta_k\ \text{other control variables}_{i,t} + \Sigma\ \beta_y\ \text{year dummy variables} \quad (3.5a)$$

$$\Delta(\text{Value of Options Granted per \$1000 in Shareholder Wealth})_{i,t} = \alpha_0 + \beta_1 \Delta\text{Shareholder Wealth}_{i,t} + \beta_2 \Delta\text{Shareholder Wealth}_{i,t-1} + \beta_3\ \text{Local\_MF\_Ownership}_{i,t-1} + \beta_4\ \text{Nonlocal\_MF\_Ownership}_{i,t-1} + \beta_5 \text{NonMF\_Ins\_Ownership}_{i,t-1} + \beta_6\ \text{Ins\_Concentration}_{i,t-1} + \Sigma\ \beta_k\ \text{other control variables}_{i,t} + \Sigma\ \beta_y\ \text{year dummy variables}_{t} \quad (3.5b)$$

where ΔValue of Options Granted per $1000 in Shareholder Wealth (option-grant sensitivity) is the dollar change in the value of options granted per $1,000 change in shareholder wealth, calculated using the methodology in Yermack (1995). All other variables are as defined in equation (3.4a) and equation (3.4b).

Based on the hypothesis, I expect (a) β_3 in equation (3.5a) to be positive and (b) that β_3 to be greater than β_4 in equation (3.5b).

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institutional ownership concentration. Following Smith and Swan (2007), I use log of market capitalization to control of size.

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3.3 Empirical Results

In this section, I discuss the results from the empirical analysis. I first provide descriptive statistics for the test and control variables. Then I present results of estimating equation (3.4a), (3.4b), (3.5a), and (3.5b).

3.3.1 Descriptive Statistics

Table 3.1 outlines definitions of variables used in my hypothesis testing.

Table 3.2 provides descriptive statistics. Panel A shows executive compensation variables; Panel B shows the institutional investor holding variables, and Panel C contains descriptive statistics for some firms' characteristic variables. The mean (median) total compensation for the top five executives is about $2.602 (0.720) million. Compared to the mean (median) total compensation of $1.250 (0.645) million in Hartzell and Starks (2003), the mean (median) total compensation in the present sample is considerably larger, consistent with Smith and Swan (2007) who show that compensation levels have increased over time. Hartzell and Starks' (2003) sample period spans 1992-1997, while this sample period spans 2004-2006. Another possible reason for the difference is that the present sample includes larger firms compared to Hartzell and Starks (2003) because of the requirement of at least five mutual funds holdings shares in the firm. The mean (median) market capitalization is $8,962 ($2,207) million. Compared to the mean (median) market capitalization of $3,477 ($870) million, firm size in my sample is considerably larger. The mean (median) option-grant sensitivity is 0.85 (0.42), implying a mean (median) change in option value of $0.85 (0.42) for an $1,000 change in shareholder wealth.

Panel B of Table 3.2 provides descriptive statistics of the local mutual fund variables of the sample. The mean (median) Local_MF_Ownership is 0.86% (0.03%) of the

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outstanding equity, and the mean (median) Nonlocal_MF_Ownership hold 13.45% (12.89%) of the outstanding equity. The mean (median) Rel_Local_Weight in my sample is 0.73% (0.00%). Rel_Local_Weight represents the excess local investment by local mutual fund holdings compared to all of the mutual fund holdings in the firm. Thus, on average, local mutual funds have a 0.73% excess local investment. The Raw_Local_Weight, which is the first term of equation (3.3), represents the proportion of local mutual fund holdings to all mutual fund holdings in firms. The mean (median) Raw_Local_Weight is roughly 5.82% (0.19%). Thus, local mutual funds represent 5.82% of all mutual fund holdings, on average.

To summarize, local mutual fund holdings appear to be small compare to other institutional holdings. However, a small proportion is sufficient to influence firms' management. This is consistent with the informational equilibrium concept proposed by Noe (2002) in his theory of costly stochastic monitoring and informed trading by strategic investors. He shows that equilibrium requires smaller investors to be far more aggressive monitors and traders than large concentrated investors that monitor with only low probability.

Panel C of Table 3.2 provides descriptive statistics for some firms' characteristic variables. The mean (median) share turnover is 2.10 (1.61). Thus, firm has annual volume that is 210% of the outstanding shares, on average. Because of the Execucomp coverage requirement and the requirement of at least five mutual funds holdings shares in firms, the firms are quite large. The mean (median) market capitalization is $8,962 ($2,207) million, while the mean (median) of sales is $6,248 ($1,627) million. The firms are not very highly levered since the mean (median) of Debt/Assets is 0.18 (0.15). The mean (median) of dividend yield is 0.01(0.01), implying the firms have a small dividend yield.

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To gain insights into whether there are systematic differences across the levels of Local_MF_Ownership, I classify the sample into four groups: Local_MF_Ownership is zero, between zero and one percent, between one and five percent and greater than five percent. Table 3.3 provides compensation structure, institutional holding variables and some firm characteristics, for these four groups. Panel A and Panel B show the mean and median, respectively. Total compensation (salary) is lower for column (1), group with zero of Local_MF_Ownership, than other three groups, suggesting managers in the firms without local mutual fund holders that tend to have lower level of compensation. Rel_Local_Weight (Raw_Local_Weight) is increasing in Local_MF_Ownership from column 2 to column 4, suggesting that investors also tend to put a higher portfolio weight on local stocks, if they increase their local holdings. Market capitalization (sales) is higher for column (2) and column (3), groups with Local_MF_Ownership between zero and one percent and between one and five percent, suggesting that large companies tend to have medium-sized local mutual fund investors. Tobit's q is lower for column (1), group with zero of Local_MF_Ownership, than other three groups, suggesting that local mutual fund holders are more likely to invest high-growth firm. Debt/Assets ratio is higher for column (1), group with zero of Local_MF_Ownership, than other three groups, suggesting that local mutual funds are less likely to hold very highly levered stocks.

Table 3.4 provides the Spearman and Pearson correlations between test and control variables employed in the study. The Spearman correlation between change in total compensation and change in shareholder wealth is 0.23 (p-value = 0.00), suggesting that executive compensation is positively associated with firms' performance. The Spearman correlation between change in total compensation and the interaction between change in

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shareholder wealth and Rel_Local_Weight is 0.03 (p = 0.00), suggesting that local mutual funds are likely to increase pay-for-performance sensitivity. The Spearman correlation between total compensation and Rel_Local_Weight is 0.07 (p = 0.00), suggesting that local mutual funds are likely to increase level of compensation.

3.3.2 Test of Hypothesis

3.3.2.1 Executive Compensation Is Total Compensation

I provide the results of equation (3.4a) and (3.4b) in Panel A and Panel B of Table 3.5, respectively. Model (1) reports the results of the regression that include all five of the top executives of the firm as separate observations. Model (2) reports the results of the regression for the CEO only and thus have one observation for each firm-year. Model (3) sums over the executives of a firm and thus again has one observation for each firm-year. Model (2) and Model (3) mitigate the potential problem of executive compensation being correlated among executives in a firm. In all regression estimates, the standard errors are corrected using the Huber-White-Sandwich procedure to compute the t-statistics using firm as the cluster.

Panel A of Table 3.5 presents the results of estimating equation (3.4a), i.e., using Rel_Local_Weight. The coefficient on Rel_Local_Weight in Model (1) is 0.161 (t = 2.12), in Model (2) is 0.337 (t = 1.80), and in Model (3) is 0.380 (t = 1.29). In terms of the economic significance of these results, the effects of local mutual fund influence are also relatively large. These results are consistent with the prediction that local mutual funds influence executive compensation, leading to higher pay-for-performance sensitivity. [9] Consistent with

[9] As an additional sensitivity analysis, I compute the average executive compensation for each firm-year. As such, I again have one observation for each firm-year. I do this because not every firm has

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Hartzell and Starks (2003), the coefficient on Ins_Concentration is significant from zero for all three models, suggesting that concentrated institutional investors influence pay-for-performance sensitivity. The coefficients on the other control variables, when significant, are consistent with the predictions in prior study (Hartzell and Starks, 2003).

Panel B of Table 3.5 presents the results of estimating equation (3.4b), i.e., using Local_MF_Ownership and Nonlocal_MF_Ownership. From Model (1), the coefficient on Local_MF_Ownership is 1.265(t = 2.35), and the coefficient on Nonlocal_MF_Ownership is 0.015 (t = 0.09). The difference is statistically different from zero (F = 12.74). From Model (2), the coefficient on Local_MF_Ownership is 2.988 (t = 2.37), and the coefficient on Nonlocal_MF_Ownership is 0.027 (t = 0.06). The difference is statistically different from zero (F = 8.43). From Model (3), the coefficient on Local_MF_Ownership is 3.833 (t = 1.48), and the coefficient on Nonlocal_MF_Ownership is -0.328 (t = -0.35). The difference is statistically different from zero (F = 4.53). Consistent with Hartzell and Starks (2003), the coefficient on Ins_Concentration is significant from zero for all three models, suggesting that concentrated institutional investors influence pay-for-performance sensitivity. The coefficients on the other control variables, when significant, are consistent with the predictions in prior study (Hartzell and Starks, 2003).

3.3.2.2 Executive Compensation Is Option-Grant Sensitivity

I provide the results of equation (3.5a) and (3.5b) in Panel A and Panel B of Table 3.6, respectively. Model (1) reports the results of the regression that include all five of the top

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five top executives. Thus, summing across executives may induce variation in compensation due to size of the total compensation package. The results are qualitatively similar to Model (3).

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executives of the firm as separate observations. Model (2) reports the results of the regression for the CEO only and thus have one observation for each firm-year.

Panel A of Table 3.6 presents the results of estimating equation (3.5a), i.e., using Rel_Local_Weight. The coefficient on Rel_Local_Weight in Model (1) is 0.365 (Chi-square = 13.43) and in Model (2) is 0.818(Chi-square = 4.42). The estimates from Model (1) imply that one percent increase in Rel_Local_Weight is associated with a $0.004 change in option-grant sensitivity. Similarly, the estimates from Model (2) imply that one percent increase in Rel_Local_Weight is associated with a $0.008 increase in option-grant sensitivity. Inconsistent with Hartzell and Starks (2003), the coefficient on Ins_Concentration is not significant from zero in Model (1) and Model (2), suggesting that concentrated institutional investors don't influence option-grant sensitivity. The coefficients on the other control variables, when significant, are consistent with the predictions in prior studies (Hartzell and Starks, 2003).

Panel B of Table 3.6 presents the results of estimating equation (3.5b), i.e., using Local_MF_Ownership and Nonlocal_MF_Ownership. From Model (1), the coefficient on Local_MF_Ownership is 1.684 (Chi-square = 7.90) and the coefficient on Nonlocal_MF_ Ownership is 0.456 (Chi-square = 5.04). The difference is statistically different from zero. From Model (2), the coefficient on Local_MF_Ownership is 4.401 (Chi-square = 3.55) and the coefficient on Nonlocal_MF_Ownershipis is not significant from zero. Inconsistent with Hartzell and Starks (2003), the coefficient on Ins_Concentration is negatively significant from zero in Model (1) and Model (2), suggesting that concentrated institutional investors

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negatively influence pay-for-performance sensitivity.[10] The coefficients on the other control variables, when significant, are consistent with the predictions in prior studies (Hartzell and Starks, 2003).

Taken together, Table 3.5 and Table 3.6 show a more positive association between local mutual fund holdings and pay-for-performance sensitivity than their nonlocal counterparts, suggesting that local mutual funds can more intensively influence the structure of executive compensation, i.e., pay-for-performance sensitivity.

3.3.3 Further Analysis

3.3.3.1 Control for Additional Factors

Studies of institutional investors and studies of executive compensation document that both institutional investor holdings and executive compensation are associated with a number of firm characteristics. In this section, I control for these firm characteristics. For example, both institutional investment (Sias and Starks, 1997) and executive compensation (Murphy, 1998) have been documented to relate to firm size. Following Almazan et al. (2005), I include net sales to control for size effect.

Empirical research shows that executive compensation is related to firm growth opportunities (Smith and Watts, 1992; Harvey and Shrieves, 2001). Following Almazan et al. (2005), I use four variables to control for the firm's investment and growth opportunities: Tobin's q ratio, the respective ratios of research and development expenses, advertising

[10] The Hartzell and Starks (2003) result of a positive association between institutional ownership concentration and option grant sensitivity does not hold when I use Hartzell and Starks (2003) model. While this may be due to difference in sample, Smith and Swan (2007) show that the Hartzell and Starks (2007) result does not hold when firm size is measured as log of market capitalization instead of market capitalization.

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expenses, and capital expenditures to property, plant and equipment (R&D/PPE, advertising/PPE and capital expenditures/PPE). Since research and development and capital expenditures are often missing in Compustat when they equal to zero, I set missing values to zero and include these indicator variables in my tests. I also set advertising expenses to zero when it is missing in Compustat. I include controls for the firm's leverage, (debt/assets), dividend policy (dividend yield), cash flow (cash flow/PPE), and asset productivity ratio (PPE/sales).

These control variables are computed based on the following variables from the annual Compustat data: assets is data 6; PPE is data 8; debt is data 9; sales is data 12; cash flow is data 13, dividends per share is data 21; capital expenditures is data 30; research and development expense is data 45; and advertising expense is data 46.

Empirical research shows that executive compensation is related to firm risk (Aggarwal and Samwick, 1999). Following Aggarwal and Samwick (1999) and Almazan et al. (2005), I control for firm risk by calculating each firm's dollar volatility, which is in turn calculated by multiplying the standard deviation of each firm's stock returns by its market capitalization. Empirical research shows that executive compensation is related to firm-specific costs of monitoring (Almazan et al., 2005). Following Almazan et al. (2005), I control for firm-specific costs of monitoring. Firm-specific cost of monitoring is defined as the inverse of the firm’s share turnover, where share turnover is computed by the annual volume divided by the average shares outstanding for the year and is winsorized at the 1% level.

Table 3.7 shows a more positive association between local mutual fund holdings and pay-for-performance sensitivity than their nonlocal counterparts, controlling for the above

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firm-specific variables. Table 3.8 shows a more positive association between local mutual fund holdings and option-grant sensitivity than their nonlocal counterparts, controlling for the above firm-specific variables. This suggests that local mutual funds can more intensively influence the structure of executive compensation, i.e., pay-for-performance sensitivity.

The coefficients on the control variables confirm previous findings (Himmelberg et al. 1999; Smith and Watts, 1992; Almazan et al., 2005). For example, I find that option-grant sensitivity is positively related to R&D expenses and inversely related to a firm's dividend yield. These results are consistent with the Smith and Watts (1992) finding that firms with more growth opportunities provide more incentive compensation for their executives. The option-grant sensitivity is negatively related to the percentage of the firm owned by executives, which is consistent with Himmelberg et al.'s (1999) and Almazan et al. (2005) result for managerial ownership.

3.3.3.2 Partition Based on Managerial Ownership

It has been recognized that greater managerial ownership mitigates agency problems of shareholders and managers (Jensen and Merckling, 1976; Demsetz, 1983; Lafond and Roychowdhury, 2008). Jensen and Meckling (1976) suggest that managers with small level of ownership fail to maximize shareholders wealth because managers have an incentive to consume perquisites. Corporate assets can be used for the benefit of managers rather than for the benefit of shareholders. Greater managerial ownership helps resolve the agency problem due to separation of ownership and management by aligning managerial interests with shareholders interest (Himmelberg, 1999). Accordingly, under these theories, more managerial ownership leads to greater equity value.

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However, the monotonicity of this relationship between firm value and managerial ownership has been questioned by some studies. For example, Morck, Shleifer, and Vishny (1988) find that firm value is adversely affected by high level of managerial ownership, as managers are entrenched and free from the discipline of their shareholders. Consequently, firm value first increases and then decreases with increases in the managerial ownership. This nonmonotonic relationship is confirmed by Hermalin and Weisbach (1991).

Thus, firms with high level of managerial ownership face less severe agency problem due to separation of ownership and management (Type I agency problems), but more severe agency problems that arise between controlling and noncontrolling shareholders (Type II agency problems). In this section, I examine how these differences in agency problems influence the association between local mutual fund holdings and option-grant sensitivity.

As I discussed earlier, firms with low level of managerial ownership face more severe type I agency problems. To mitigate these problems, local mutual funds are more likely to increase pay-for performance sensitivity of executive compensation of these firms. On the other hand, local mutual funds are less likely to increase pay-for-performance sensitivity where agency problem of separation of management and is less severe, i.e. high level of managerial ownership. The source of high managerial ownership is the accumulation of stock due to equity-based compensation in the previous years. Managers can accumulate significant equity stakes via vesting of restricted stock or via exercises of vested stock options. Local mutual funds have less incentive to influence executive compensation if managers have already held a large percentage of firms. However, firms with a high level of managerial ownership face more severe type II agency problems because of managers'

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significant control over their firms. Type II agency problems are likely to have a differential effect on the association between local mutual funds and pay-for-performance sensitivity.

Thus, I predict that local mutual funds are more likely to influence pay-for-performance sensitivity of executives in firms where agency problem of separation of ownership and control is more severe, as proxied by low managerial ownership. The sample was partitioned into two groups: firms with high managerial ownership and low managerial ownership. I use two proxies for managerial ownership. TOP5 is defined as the number of shares held by top five mangers divided by the total number of share outstanding. CEOOWN is defined as the number of shares held by the CEO divided by the total number of shares outstanding. I use the median of TOP5 or CEOOWN to classify firms into High and Low managerial ownership firms. I use option-grant sensitivity as the measure of pay-for-performance sensitivity.

I provide the results of equation (3.5a) and (3.5b) for low managerial ownership group and high managerial ownership group in Panel A and Panel B of Table 3.9, respectively. Model (4) reports the results of the regression that include firms with high level of TOP5. Model (5) reports the results of the regression that include firms with low level of TOP5. Model (6) reports the results of the regression that include firms with high level of CEOOWN. Model (7) reports the results of the regression that include firms with low level of CEOOWN.

Panel A of Table 3.9 presents the results of estimating equation (3.5a), i.e., using Rel_Local_Weight. The coefficient on Rel_Local_Weight in Model (4) is 0.093 (Chi-square = 0.32), but in Model (5) is 0.565 (Chi-square = 22.56). Similarly, the coefficient on Rel_Local_Weight in Model (6) is -0.133 (Chi-square = 0.72), but in Model (7) is 0.707(Chi-

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square = 30.62). Panel B of Table 3.9 presents the results of estimating equation (3.5b), i.e., using Local_MF_Ownership and Nonlocal_MF_Ownership. The coefficient on Local_MF_Ownership in Model (4) is 1.293 (Chi-square = 1.58), but in Model (5) is 1.929 (Chi-square = 7.88). Similarly, the coefficient on Local_MF_Ownership in Model (6) is 0.272 (Chi-square = 0.08), but in Model (7) is 2.448 (Chi-square = 10.28). Table 3.9 shows that the positive association between option-grant sensitivity and local mutual fund holdings is driven by firms with low level of managerial ownership.

Taken together, Table 3.5 and Table 3.6 show a more positive association between local mutual fund holdings and pay-for-performance sensitivity than their nonlocal counterparts, suggesting that local mutual funds can more intensively influence the structure of executive compensation, i.e., pay-for-performance sensitivity. Table 3.7 and Table 3.8 show that the positive association between local mutual fund holdings and pay-for-performance sensitivity holds after further controlling for additional factors. In Table 3.9, I partition the sample into two groups: firms with high managerial ownership and low managerial ownership. Table 3.9 shows that the positive association between option-grant sensitivity and local mutual fund holdings is driven by firms with low level of managerial ownership.

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CHAPTER 4

LOCAL MUTUAL FUNDS AND THE LEVEL OF COMPENSATION

In this chapter, I further investigate the association between local mutual fund holdings and the level of executive compensation. I first provide the motivation and develop the hypothesis. Then I present the research design and the results of the empirical analysis.

4.1 Hypothesis Development

Empirical studies show that mutual funds are not associated with the level of CEO compensation. David and Kim (2007), based on an analysis of proxy votes for 2004, find that the proposals to limit executive compensation (45 cases) were opposed by mutual funds. They argue that mutual funds may not vote against firms' management because of the risk of alienating the management. In other words, conflicts of interest may lead to mutual fund managers voting against the proposals to decrease executive compensation. Similarly, Levitz (2006) find that mutual fund managers usually support executive compensation plans and oppose shareholder attempts to reign them in. This suggests that mutual fund managers support firms' management on executive compensation issues.

However, I argue that mutual funds are likely to influence executive compensation not necessarily through their voting power. Even though mutual funds are less likely to oppose firms' management in compensation issues using proxy voting directly, they may influence executive compensation before proxy voting. Investors' direct control over executive pay is limited. Shareholders can directly approve or veto just two forms of compensation: stock plans and certain tax-advantaged, performance-based plans (Smith and

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Swan, 2007). Shareholders have no direct influence over most forms of pay, including salary, perks, retirement plans, severance or how gains on certain stock grants might inflate other forms of compensation in the future. However, institutional investors can use their proxy voting strength to oppose the reelection of directors they believe do not support their agenda. Thus, mutual funds are likely to influence executive compensation before proxy voting since they don't have direct control over most forms of compensation at proxy voting.

To summarize, mutual funds are not likely to vote against management while they may be active in influencing management in an indirect fashion. These countervailing forces provide the motivation to examine whether local mutual fund holdings are associated with level of compensation.

My hypothesis and results in the prior sections show that local mutual fund holdings are more positively associated with pay-for-performance sensitivity than nonlocal mutual fund holdings. Higher pay-for-performance sensitivity is likely to impose more risk on executives. Assuming that executives are on average risk averse, higher risk is likely compensated through a higher level of compensation. This is consistent with the classical principal-agent model (Holmstrom, 1979). For example, Hall and Murphy (2003) argue that risk imposed by higher pay-for-performance sensitivity may drive an increase in the level of compensation over time. This leads to the following conjecture: local mutual fund holdings are more positively associated with the level of compensation than their nonlocal counterparts.

Bebchuk and Fried (2004) provide a rent-seeking view for CEO compensation. They argue that CEO employment contracts are not optimal for shareholders because executives have more power than investors or board of directors. Managerial power arises because

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boards of directors are beholden to the firm's top executives, largely due to management's control over the director nomination process. Weak compensation committees thus do little to protect the firm in its compensation negotiations with the CEO, leading to inappropriately high levels of executive compensation. As such, CEOs are generally overpaid (Bebchuk and Fried, 2003; Bebchuk and Fried, 2004). Hartzell and Starks (2003) provide support for rent seeking view of CEO compensation. They find that institutional ownership concentration is negatively associated with the level of compensation. They argue that institutional investors with concentrated holdings can exert pressure on firms' management to ensure that firms' management does not expropriate rents from shareholders in the form of greater compensation. Extending these arguments to local mutual funds leads to the conjecture that local mutual fund holdings are negatively associated with the level of compensation. [11]

To summarize, the arguments based on (1) "the principal-agent model" and (2) the rent seeking view lead to opposing conjectures, relating local mutual fund holdings and the level of compensation. As such, the association between the level of compensation and local mutual fund holdings is an empirical question.

4.2 Research Design

I augment Hartzell and Starks (2003) model by including local and nonlocal mutual fund holding variables and estimate the following equations. Equation (4.1a) uses the Relative Local Weight measure, while equation (4.1b) uses the Local Mutual Fund Ownership and Non-local Mutual Fund Ownership measures.

[11]It is important to note that the rent seeking hypothesis cannot be ruled out with my research design.

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$$\text{Level of Compensation}_{i,t} = \alpha_0 + \beta_1 \Delta\text{Shareholder Wealth}_{i,t} + \beta_2 \Delta\text{Shareholder Wealth}_{i,t-1} + \beta_3 \text{Rel\_Local\_Weight}_{i,t-1} + \beta_4 \text{MF\_Ownership}_{i,t-1} + \beta_5 \text{NonMF\_Ins\_Ownership}_{i,t-1} + \beta_6 \text{Ins\_Concentration}_{i,t-1} + \Sigma\beta_k \text{other control variables}_{i,t} + \Sigma\beta_y \text{industry indicator variables} + \Sigma\beta_z \text{year dummy variables} \quad (4.1a)$$

$$\text{Level of Compensation}_{i,t} = \alpha_0 + \beta_1 \Delta\text{Shareholder Wealth}_{i,t} + \beta_2 \Delta\text{Shareholder Wealth}_{i,t-1} + \beta_3 \text{Local\_MF\_Ownership}_{i,t-1} + \beta_4 \text{Nonlocal\_MF\_Ownership}_{i,t-1} + \beta_5 \text{NonMF\_Ins\_Ownership}_{i,t-1} + \beta_6 \text{Ins\_Concentration}_{i,t-1} + \Sigma\beta_k \text{other control variables}_{i,t} + \Sigma\beta_y \text{industry indicator variables} + \Sigma\beta_z \text{year dummy variables} \quad (4.1b)$$

where Level of Compensation is measured by total compensation. Total compensation is the sum of the manager's salary, bonus, stock and option grants, and other compensation. All other variables are as defined in equation (3.4a) and equation (3.4b).

4.3 Empirical Results

4.3.1 Results for Estimating Equation (4.1a) and (4.2)

I provide the results of equation (4.1a) and (4.1b) in Panel A and Panel B of Table 4.1, respectively. Model (1) reports the results of the regression that include all five of the top executives of the firm as separate observations. Model (2) reports the results of the regression for the CEO only and thus have one observation for each firm-year. Model (3) sums over the executives of a firm and thus again has one observation for each firm-year. Model (2) and Model (3) mitigate the potential problem of executive compensation being correlated among executives in a firm. In all regression estimates, the standard errors are corrected using the Huber-White-Sandwich procedure to compute the t-statistics using firm as the cluster.

Panel A of Table 4.1 presents the results of estimating equation (4.1a), i.e., using Rel_Local_Weight. The coefficient on Rel_Local_Weight in Model (1) is 360.6 (t = 2.36), in Model (2) is 1,372 (t = 2.62), and in Model (3) is 2,368 (t = 2.15). In terms of the economic

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significance of these results, the effects of local mutual fund influence are also relatively large. The estimates from Model (1) imply that one percent increase in Rel_Local_Weight is associated with a $3,606 increase in total compensation. Similarly, the estimates from Model (2) and Model (3) imply that one percent increase in Rel_Local_Weight is associated with a $13,720 and a $23,680 increase in total compensation, respectively. The coefficients on the control variables, when significant, are consistent with the predictions in prior study (Hartzell and Starks, 2003).

Panel B of Table 4.1 presents the results of estimating equation (4.1b), i.e., using Local_MF_Ownership and Nonlocal_MF_Ownership. From Model (1), the coefficient on Local_MF_Ownership is 1,907(t = 1.95), and the coefficient on Nonlocal_MF_ Ownership is 87.67 (t = 0.26). The difference is statistically different from zero (F =10.54). From Model (2), the coefficient on Local_MF_Ownership is 6,212 (t = 1.89), and the coefficient on Nonlocal_MF_Ownership is -863.8 (t = -0.82). The difference is statistically different from zero (F = 8.11). From Model (3), the coefficient on Local_MF_Ownership is 10,361 (t = 1.64), and the coefficient on Nonlocal_MF_Ownership is -422.6 (t = -0.18). The difference is statistically different from zero (F = 3.43). The coefficients on the control variables, when significant, are consistent with the predictions in prior study (Hartzell and Starks, 2003). To summarize, Table 4.1 shows that local mutual fund holdings are more positively associated with the level of compensation than nonlocal mutual fund holdings.

4.3.2 Further Analysis

4.3.2.1 Control for Additional Factors

Studies of institutional investors and studies of executive compensation document that both institutional investor holdings and executive compensation are associated with a

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number of firm characteristics. In this section, I control for these firm characteristics. For example, both institutional investment (Sias and Starks, 1997) and executive compensation (Murphy, 1998) have been documented to relate to firm size. Following Almazan et al. (2005), I include net sales to control for size effect.

Empirical research shows that executive compensation is related to firm growth opportunities (Smith and Watts, 1992; and Harvey and Shrieves, 2001). Following Almazan et al. (2005), I use four variables to control for the firm's investment and growth opportunities: Tobin's q ratio, the respective ratios of research and development expenses, advertising expenses, and capital expenditures to property, plant and equipment (R&D/PPE, advertising/PPE and capital expenditures/PPE). Since research and development and capital expenditures are often missing in Compustat when they equal to zero, I set missing values to zero and include these indicator variables in my tests. I also set advertising expenses to zero when it is missing in Compustat. I include controls for the firm's leverage, (debt/assets), dividend policy (dividend yield), cash flow (cash flow/PPE), and asset productivity ratio (PPE/sales).

These control variables are computed based on the following variables from the annual Compustat data: assets is data 6; PPE is data 8; debt is data 9; sales is data 12; cash flow is data 13, dividends per share is data 21; capital expenditures is data 30; research and development expense is data 45; and advertising expense is data 46.

Empirical research shows that executive compensation is related to firm risk (Aggarwal and Samwick, 1999). Following Aggarwal and Samwick (1999) and Almazan et al. (2005), I control for firm risk by calculating each firm's dollar volatility, which is in turn calculated by multiplying the standard deviation of each firm's stock returns by its market

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capitalization. Empirical research shows that executive compensation is related to firm-specific costs of monitoring (Almazan et al., 2005). Following Almazan et al. (2005), I control for firm-specific costs of monitoring. Firm-specific cost of monitoring is defined as the inverse of the firm's share turnover, where share turnover is computed by the annual volume divided by the average shares outstanding for the year and is winsorized at the 1% level.

Panel A of Table 4.2 shows a more positive association between local mutual fund holdings and level of executive compensation than their nonlocal counterparts, controlling for the above firm-specific variables. The coefficients on the control variables confirm previous findings (Almazan et al., 2005; Himmelberg et al. 1999; Smith and Watts, 1992). I find that managers of firms with higher Tobin s q tend to receive lower salaries and total compensation. This association suggests that firms with growth opportunities pay less current compensation, possibly because the managers of these firms can expect to receive more in the future due to the expected growth. As would be expected, executives of larger firms and CEOs earn more.

In summary, the results on the levels of executive compensation are that the level of compensation increases with local mutual fund holdings after controlling for additional factors.

4.3.2.2 Partition Based on Managerial Ownership

In this section, I test the association between level of executive compensation and local mutual fund holdings for the partition sample: firms with high managerial ownership and low managerial ownership. As discussed before, the positive association between local mutual fund holdings and the level of compensation is likely to be driven by higher risk

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induced by higher pay-for-performance sensitivity. In chapter 3, I find that local mutual funds are more likely to influence pay-for-performance sensitivity of executives in firms where agency problem of separation of ownership and control is more severe, as proxied by low managerial ownership. Thus, I expect a positive association between local mutual fund holdings and the level of compensation for low-managerial ownership group.

I provide the results of equation (4.1a) and (4.1b) for low managerial ownership group and high managerial ownership group in Panel A and Panel B of Table 4.3, respectively. Model (4) reports the results of the regression that include firms with high level of TOP5. Model (5) reports the results of the regression that include firms with low level of TOP5. Model (6) reports the results of the regression that include firms with high level of CEOOWN. Model (7) reports the results of the regression that include firms with low level of CEOOWN.

Panel A of Table 4.3 presents the results of estimating equation (4.1a), i.e., using Rel_Local_Weight. The coefficient on Rel_Local_Weight in Model (4) is 217.0 (t = 1.14), but in Model (5) is 595.5 (t = 2.29). Similarly, the coefficient on Rel_Local_Weight in Model (6) is 130.2 (t = 0.68), but in Model (7) is 715.3 (t = 2.97). Panel B of Table 4.3 presents the results of estimating equation (4.1b), i.e., using Local_MF_Ownership and Nonlocal_MF_Ownership. The coefficient on Local_MF_Ownership in Model (4) is 1,717 (t = 1.21), but in Model (5) is 2,771(t = 2.13). Similarly, The coefficient on Local_MF_Ownership in Model (6) 1,493 (t = 1.10), but in Model (7) is 3,291(t = 2.47).

Table 4.3 shows that the positive association between local mutual fund holding and the level of executive compensation documented in Table 4.1 is driven by firms with low managerial ownership.

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4.3.2.3 Control for Option-grant Sensitivity

If the hypothesis based on the principal-agent model is true, then the positive association between local mutual fund holdings and the level of compensation may be driven by higher risk induced by higher pay-for-performance sensitivity. To further test whether the positive association between local mutual funds and the level of compensation is driven by higher pay-for-performance sensitivity, I augment equation (4.1a) and equation (4.1b) by including option-grant sensitivity.

I estimate the following equations: equation (4.2a) uses the Relative Local Weight measure, while equation (4.2b) uses the Local Mutual Fund Ownership and Non-local Mutual Fund Ownership measures.

$$\text{Level of Compensation}_{i,t} = \alpha_0 + \beta_1 \Delta\text{Shareholder Wealth}_{i,t} + \beta_2 \Delta\text{Shareholder Wealth}_{i,t-1} + \beta_3 \text{Rel\_Local\_Weight}_{i,t-1} + \beta_4 \text{MF\_Ownership}_{i,t-1} + \beta_5 \text{NonMF\_Ins\_Ownership}_{i,t-1} + \beta_6 \text{Ins\_Concentration}_{i,t-1} + \beta_7 \text{Option-Grant Sensitivity} + \Sigma \beta_k \text{other control variables}_{i,t} + \Sigma \beta_y \text{industry indicator variables} + \Sigma \beta_z \text{year dummy variables} \quad (4.2a)$$

$$\text{Level of Compensation}_{i,t} = \alpha_0 + \beta_1 \Delta\text{Shareholder Wealth}_{i,t} + \beta_2 \Delta\text{Shareholder Wealth}_{i,t-1} + \beta_3 \text{Local\_MF\_Ownership}_{i,t-1} + \beta_4 \text{Nonlocal\_MF\_Ownership}_{i,t-1} + \beta_5 \text{NonMF\_Ins\_Ownership}_{i,t-1} + \beta_6 \text{Ins\_Concentration}_{i,t-1} + \beta_7 \text{Option-Grant Sensitivity} + \Sigma \beta_k \text{other control variables}_{i,t} + \Sigma \beta_y \text{industry indicator variables} + \Sigma \beta_z \text{year dummy variables} \quad (4.2b)$$

where Level of Compensation is measured by total compensation. Total compensation is the sum of the manager's salary, bonus, stock and option grants, and other compensation. All other variables are as defined in equation (3.4a) and equation (3.4b).

I expect β_7 in both equation (4.2a) and equation (4.2b) to be positive, indicating that, on average, managers require a higher level of compensation to compensate for more risk induced by the higher pay-for-performance sensitivity. If the positive association between the level of compensation and local mutual fund holdings is driven by higher pay-for-performance sensitivity, and if option-grant sensitivity is a good proxy for pay-for-

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performance sensitivity, the coefficient on local mutual fund variables will not be significant from zero after controlling for option-grant-sensitivity. As such, I expect (a) β_3 in equation (4.2a) not to be different from zero and (b) β_3 not to be different from β_4 in equation (4.2b).

I provide the results of equation (4.2a) and (4.2b) for low managerial ownership group and high managerial ownership group in Panel A and Panel B of Table 4.4, respectively. Model (4) reports the results of the regression that include firms with high level of TOP5. Model (5) reports the results of the regression that include firms with low level of TOP5. Model (6) reports the results of the regression that include firms with high level of CEOOWN. Model (7) reports the results of the regression that include firms with low level of CEOOWN.

Panel A of Table 4.4 presents the results of estimating equation (4.2a), i.e., using Rel_Local_Weight. The coefficient on Option-grant Sensitivity is significant from zero in Model (4), Model (5), Model (6) and Model (7). The coefficient on Rel_Local_Weight in Model (4) is 163.1 (t = 0.93), but in Model (5) is 350.5 (t = 1.55). Similarly, the coefficient on Rel_Local_Weight in Model (6) is 155.0 (t = 0.85), but in Model (7) is 459.9 (t = 2.03).

Panel B of Table 4.4 presents the results of estimating equation (4.2b), i.e., using Local_MF_Ownership and Nonlocal_MF_Ownership. The coefficient on Option-grant Sensitivity is significant from zero in Model (4), Model (5), Model (6) and Model (7). The coefficient on Local_MF_Ownership in Model (4) is 1,070 (t = 0.82), but in Model (5) is 1,982(t = 1.66). Similarly, The coefficient on Local_MF_Ownership in Model (6) 1,037 (t = 0.82), but in Model (7) is 2,453(t = 1.98). Table 4.4 shows that the association between the level of executive compensation and local mutual fund holding decreases after controlling for Option-Grant Sensitivity.

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To summarize, Table 4.1 shows that local mutual fund holdings are more positively associated with the level of compensation than nonlocal mutual fund holdings. Table 4.2 shows that local mutual fund holdings are more positively associated with the level of executive compensation, after controlling additional factors. Table 4.3 shows that the positive association between local mutual fund holdings and the level of executive compensation is driven by firms with low managerial ownership. Table 4.4 shows that the association between the level of executive compensation and local mutual fund holding decreases after controlling for Option-Grant Sensitivity. This suggests that the higher pay-for-performance sensitivity imposes more risk on managers, requiring that risk-averse managers be paid more than otherwise.

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CHAPTER 5

CONCLUSIONS

5.1 Summary of Results

In this paper, I examine the association between local mutual fund holdings and executive compensation. I hypothesize that local mutual fund holdings are more positively associated with pay-for-performance sensitivity than nonlocal mutual fund holdings, suggesting that local mutual fund influence firms' management in terms of pay-for-performance sensitivity. This association could be driven by the cost-benefit analysis of influencing firms' management versus trading. I argue that costs of influencing firms' management, including costs of gathering and analyzing information, are lower for local mutual funds than nonlocal mutual funds. Geographical proximity provides the local fund managers easier access to firms' management and board of directors, and thus, costs of obtaining information about the firm is lower than their nonlocal mutual fund counterparts. Furthermore, local fund managers can gain a deeper understanding of firms' culture and are more likely to be effectively influence firms' management.

To measure the influence of local mutual funds, I use two measures: Relative Local Weight and Local Mutual Fund Ownership. I find that Relative Local Weight measure is more positively associated with pay-for-performance sensitivity and that Local Mutual Fund Ownership measure is more positively associated with pay-for-performance sensitivity than their nonlocal counterparts. These results provide support for the hypothesis that local mutual funds have advantages in influencing firms' management in executive compensation, leading

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to higher pay-for-performance sensitivity. I find that local mutual fund holdings are more positively associated with the level of compensation than nonlocal mutual fund holdings. I find the positive association between local mutual fund holdings and the level of executive compensation and positive association between local mutual fund holdings and option grant sensitivity are driven by firm with low managerial ownership.

I also find that (1) the positive association between local mutual fund holding and option-grant sensitivity and (2) the positive association between local mutual fund holding and the level of executive compensation are driven by firms with low managerial ownership. This suggests that (1) local mutual funds are more likely to influence pay-for-performance sensitivity of executives in firms where agency problem of separation of ownership and control is more severe, as proxied by low managerial ownership, and (2) the higher pay-for-performance sensitivity imposes more risk on managers, requiring that risk-averse managers be paid more than otherwise.

5.2 Contribution

This study contributes to the literature in the following ways:

First, the positive association between pay-for-performance sensitivity and local mutual fund holdings is consistent with local mutual fund influencing firms' management in executive compensation. There is no apparent consensus in the literature on the explanations for local bias. A number of studies argue that local bias is due to information advantage local investors possess (Coval and Moskowitz, 1999; Coval and Moskowitz, 2001). However, some studies present evidence that local bias cannot be explained by the information advantage argument (Benartzi, 2001; Huberman, 2001; Zhu, 2002). Based on my findings, a

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rationale for local bias by mutual funds is likely to be their ability/effectiveness to influence firms' management.

Second, I extend Hartzell and Starks' (2003) results on the positive association between pay-for-performance sensitivity and institutional holdings to include local mutual fund holdings. I find results consistent with Hartzell and Starks' (2003) monitoring and influencing firms' management, and thus, provide support for institutional investors' role and local mutual funds' role in particular corporate governance. The results also provide support for the hypothesis that both monitoring by institutional investors and managerial incentive compensation could coexist because of a needed interaction between the monitoring of managers and incentive compensation.

Third, since my hypothesis compares local and nonlocal mutual funds, this context controls for clientele effect. In particular, Hartzell and Starks' (2003) results could be driven by the clientele effect: the clientele effect implies that institutional investors buy and hold stocks in firms with higher pay-for-performance sensitivity. If the clientele effect is similar for all institutional investors including local mutual funds, nonlocal mutual funds and other institutional investors, the hypothesis comparing local mutual funds and nonlocal mutual funds controls for clientele effect.

5.3 Future Research

First, future research could be directed on the effects of the Regulation Fair Disclosure on the association between local mutual funds holdings and executive compensation. Local information advantage is likely to be greater after Regulation Fair Disclosure because firms cannot disclose material information only to elected institutional investors and analysts after Regulation Fair Disclosure. Local mutual funds have more

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influence on executive compensation after Regulation Fair Disclosure than their nonlocal counterparts.

Second, future research could examine whether type of institutional investors are more likely to influence executive compensation. Bushee (2001) classifies institutional investors into three groups: transient, dedicated, and quasi-indexers. Dedicated institutional investors are more likely to influence executive compensation since they have a longer holding period.

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APPENDIX

Table 2.1. Literature Review

Panel A: Investors' Home Bias

Literature	Research Question	Main Findings
French and Poterba (1991)	1. Is there any home bias? 2. What accounts for home bias?	1. They document that U.S. equity traders allocate nearly 94 percent of their funds to domestic securities, even though the U.S. equity market comprises less than 48 percent of the global equity market. 2. Local bias is the result of investors' choices, rather than institutional constraints since investors' expected return in their domestic equity market is higher than returns in other markets.
Tesar and Werner (1995)	1. Whether this increased activity in international financial markets and the large volume of cross-border capital flows reflects an increase in the fraction of investment portfolios allocated to foreign securities? 2. Can high transaction costs explain the home bias?	1. There is strong evidence of the home bias in five countries: Canada, Germany, Japan, the UK and the U.S. 2. Diversification of risk is an unlikely explanation for home bias. The turnover rate on foreign securities is relatively higher than the turnover rate in the domestic market. Transaction costs are an unlikely explanation for home bias

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Table 2.1. – Continued

Lewis (1999)	1. Examine the explanations for equity home bias 2. Examine the explanations for equity home bias 3. Are home bias in equities and home bias in consumption linked?	The explanation for home bias in equities is neither sufficient nor necessary for home bias in consumption.
Kang and Stulz, (1997)	Why is there a home bias in Japan?	1. Foreign investors invest more in manufacturing industries, large firms, firms with good accounting performance, firms with low risk, and firms with low leverage in Japan. 2. Foreign investors invest more in small firms that have a high exports to sales ratio, but that ratio is not important for large firms in Japan. 3. The evidence suggests that a lack of knowledge that a firm exists is one explanation for home bias.
Edison and Warnock (2003)	Is there a cross-listing effect on home bias?	1. They find U.S. investors invest more in firms that are large, have fewer restrictions on foreign ownership, or are cross-listed on a U.S. exchange. 2. Their results suggest that information asymmetries play an important role in home bias.

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Table 2.1. – Continued

Panel B: Investors' local bias		
Coval and Moskowitz (1999)	Do investors have a preference for geographically proximate investments?	1. They use U.S. mutual fund holdings to show that U.S. mutual fund managers' have a bias towards holding local companies in their domestic portfolios. 2. They argue that asymmetric information between local and nonlocal investors may drive the preference for geographical proximity in investments.
Grinblatt and Keloharju (2001)	1. Is local bias present for Finnish investors? 2. How does distance, language and culture influence stockholdings and trade?	1. They find that Finnish investors are more likely to hold, buy, and sell the stocks of Finnish firms that are located close to the investor. 2. They also show that the marginal effect of distance is less for firms that are more nationally known, for distances that exceed 100 kilometers, and for investors with more diversified portfolios
Huberman (2001)	1. Why do investors Regional Bell Operating Companies have local bias?	1. They find that investors are much more likely to invest in Regional Bell Operating Companies (RBOCs) that operate in their area than any other RBOC. 2. Investors invest in the familiar while often ignoring the principles of portfolio theory. Familiarity can provide an explanation for local bias.

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Table 2.1. – Continued

Zhu (2002)	1. Is local bias present for individual investors? 2. Why do individual investors have local bias?	1. They find that individual investors tend to invest in companies closer to them relative to the market portfolio. 2. They find that individual investors are more likely to invest in remote companies that spend heavily on advertising. 3. Familiarity with local companies and ready reaction to local information are explanations for local bias.

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Table 2.1. – Continued

Panel C: Institutional Investors Activism		
Bushee (1998)	Whether institutional investors create or reduce incentives for firms' management to reduce investment in research and development (R&D) to meet short-term earnings targets?	1. They find that firms' management are less likely to cut R&D to reverse an earnings decline when institutional ownership is high. 2. The evidence suggests that institutional investors serve a monitoring role in reducing pressures for myopic behavior, e.g., reducing R&D to meet earnings targets.
Brickley et al. (1988)	Can institutional investors influence the corporate decisions on antitakeover amendments?	1. They find that institutional investors and other blockholders vote more actively on antitakeover amendments than other investors. 2. They also find that institutional investors that are less subject to management influence, such as mutual funds, and pension funds, are more likely to oppose management than other institutional investors. 3. Their evidence suggests that institutional investors and other blockholders have a strong incentive to be involved in voting on corporate issues, and they can exert influence on antitakeover amendments.

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Table 2.1. – Continued

Chen et al. (2007)	Which institutional investors monitor firms in which they invest?	1. Chen et al. (2007) find that the presence of large independent long-term institutional investors (ILTIs) in bidding firms is associated with significantly fewer bad deals being announced, compared to the case when large ILTIs are absent. 2. Chen et al. (2007) also find a positive association between large ILTIs holdings and the probability of a bad bid being reversed, suggesting that large ILTIs encourage managers to walk away from poor corporate mergers.
Gasper and Massa (2007)	How do local investors affect the way the firms are monitored, the liquidity of its shares, and its stock price?	1. They find that local ownership improves corporate governance and induces value-enhancing decisions, while reducing liquidity. 2. Their results suggest that geographical proximity is an inexpensive way to obtain information about a firm. Local investors can gather valuable information about the firm, which they can use to exert influence

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Table 2.1. – Continued

Panel D: Institutional investors and Executive Compensation		
Hartzell and Starks (2003)	Can institutional investors influence executive compensation?	1. They find a positive association between concentrated institutional investors measured by institutional ownership concentration, i.e., the holdings of the top 5 largest institutional investors as a percentage of institutional holdings, and the pay-for-performance sensitivity of executive compensation. 2. They also find a negative association between institutional ownership concentration and the level of executive compensation.
Almazan et.al. (2005)	1. Do the costs of monitoring influence the effects of institutional monitoring on executive compensation? 2. Which type of institutional investors influence executive compensation?	1. They find that the effectiveness of institutional investors' monitoring can be affected by the costs of monitoring. 2. They classify institutional investors into two groups: active institutional investors (investment companies and independent investment adviser) and passive institutional investors (others). 3. They find that active institutional investors are more positively associated with pay-for-performance sensitivity than passive institutional investors, suggesting active institutional investors play a more active monitoring role than the passive institutional investors.

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Table 3.1. Variable Definitions

Executive Compensation:		
Total Compensation	=	the sum of the manager's salary, bonus, stock and option grants, and other compensation.
Option-grant Sensitivity	=	the dollar change in the value of options granted per $1,000 change in shareholder wealth, calculated using the methodology in Yermack (1995).
Institutional Ownership:		
Local_MF_Ownership (% of shares outstanding)	=	the fraction of shares outstanding that are held by local mutual funds
Nonlocal_MF_Ownership (% of shares outstanding)	=	the fraction of shares outstanding that are held by non local mutual funds.
NonMF_Ins_Ownership (% of shares outstanding)	=	the fraction of shares outstanding that are held by institutional investors minus the fraction of shares outstanding that are held by mutual funds.
Raw_Local_Weight (%)	=	the fraction of the firm held by local mutual funds relative to the total fund holdings in the firm
Rel_Local_Weight (%)	=	Raw_Local_Weight minus the fraction of the fund assets managed by funds within 100km of the stock.
Ins_Concentration (%)	=	the holdings of the top 5 largest institutional investors as a percentage of institutional holdings.
Firm Characteristics:		
Share Turnover	=	the annual volume divided by the average shares outstanding for the year and is winsorized at the 1% level.
Tobin's q	=	the sum of the market capitalization and book value of assets (Compustat yearly data 6), less book value of common equity (Compustat yearly data 60), all divided by the book value of assets.
Market Capitalization($MM)	=	the product of shares outstanding (Compustat yearly data 24) and year-end price per share(Compustat yearly data 25), in millions of dollars.
ΔShareholder Wealth	=	the change in market capitalization from period t-1 to t.
Debt/Assets	=	the ratio of long-term debt to total assets.

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Table 3.1. – Continued

R&D/PPE	=	the ratio of R&D expenses to net property, plant, and equipment.
R&D Missing	=	the indicator variable for R&D expenses missing data items in Compustat.
PPE/ Sales	=	the ratio of net property, plant, and equipment to sales.
Cash Flow/PPE	=	the ratio of cash flow to net property, plant, and equipment
Advertising/PPE	=	the ratio of Advertising expenses to net property, plant, and equipment
Advertising Missing	=	the indicator variable for Advertising expenses missing data items in Compustat.
Capital Expenditure/PPE	=	the ratio of Capital Expenditure to net property, plant, and equipment
Capital Expenditure Missing	=	the indicator variable for Capital Expenditure missing data items in Compustat.
Percentage Shares Owned	=	the fraction of shares outstanding owned by the executive
Dollar Volatility	=	the product of market capitalization and the annualized standard deviation of the firm's daily logarithmic stock returns over the previous 120 days of the year (in millions of dollars).

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Table 3.2. Descriptive Statistics

Panel A: Executive Compensation

	Mean	Std. Dev.	Q1	Median	Q3
Salary($K)	475.6	289.8	281.5	398.8	591.7
Cash Compensation ($K)	916.5	907.5	390.4	617.7	1,061
Total Compensation($K)	2,602	3,413	720.3	1,399	2,963
ΔTotal Compensation($K)	204.0	1,940	-197.6	93.18	532.2
ΔTotal Compensation/ ΔShareholder Wealth	0.13	182.7	-0.42	0.25	1.42
Option-grant Sensitivity	0.85	1.25	0.18	0.42	0.95

Panel B: Mutual Fund Holdings

	Mean	Std. Dev.	Q1	Median	Q3
Local_MF_Ownership (% of shares outstanding)	0.86	1.83	0.00	0.03	0.89
Nonlocal_MF_Ownership (% of shares outstanding)	13.45	6.62	8.44	12.89	17.45
NonMF_Ins_Ownership (% of shares outstanding)	58.88	16.08	48.68	60.08	69.65
Raw_Local_Weight (%)	5.82	11.02	0.00	0.19	6.66
Rel_Local_Weight (%)	0.73	19.60	0.00	0.00	1.79

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Table 3.2. – Continued

Panel C: Firm Characteristics

	Mean	Std. Dev.	Q1	Median	Q3
Share Turnover	2.10	1.58	1.08	1.61	2.58
Tobin's q	1.98	1.31	1.23	1.59	2.25
Market Capitalization($MM)	8,962	25,148	884.1	2,207	6,721
Sales($MM)	6,248	17,822	631.6	1,627	4,984
Debt/Assets	0.18	0.17	0.03	0.15	0.27
Dividend Yields	0.01	0.02	0.00	0.01	0.02
R&D/PPE	0.33	1.38	0.00	0.00	0.17
R&D Missing	0.43	0.49	0.00	0.00	1.00
PPE Sales	0.37	0.52	0.10	0.18	0.37
Cash Flow/PPE	1.96	17.75	0.34	0.71	1.49
Advertising/PPE	0.14	0.84	0.00	0.00	0.05
Advertising Missing	0.62	0.48	0.00	1.00	1.00
Capital Expenditure/PPE	0.21	0.16	0.11	0.18	0.28
Capital Expenditure Missing	0.06	0.24	0.00	0.00	0.00
Percentage Shares Owned	0.01	0.13	0.00	0.00	0.00
Dollar Volatility	1,902	4,574	267.2	556.9	1,535
ΔShareholder Wealth($MM)	661.9	4,501	-81.10	161.4	722.6

Notes to Table 3.2.:

See Table 3.1. for variable definitions.

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Table 3.3. Descriptive Statistics

Panel A: Mean (Classified by Local Mutual Fund Ownership)

	Mean				Difference		
	Local_ MF_ Ownership=0	0<Local_ MF_ Ownership<=1 %	1%< Local_ MF_ Ownership< = 5%	Local_ MF_ Ownership>5%	Column (2) minus Column (1) t-statistic	Column (3) minus Column (1) t-statistic	Column (4) minus Column (1) t-statistic
Column #	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Compensation Variables							
Salary($K)	432.3	513.5	528.2	510.0	81.20*	95.88*	77.66*
Total Compensation($K)	1,956	3,074	3,482	2,821	1,118 *	1,526 *	865.3*
ΔTotal Compensation	183.4	146.6	231.3	40.00	-36.74	47.96	-143.3
Option-grant sensitivity	0.84	0.75	0.87	0.75	-0.09*	0.02*	-0.10
Institutional Holding Variables (%)							
Local_MF_Ownership	0.00	0.27	2.36	8.11	0.27*	2.36*	8.11*
Nonlocal_MF_Ownership	13.36	13.65	13.42	12.93	0.29*	0.06	-0.43
NonMF_Ins_Ownership	57.90	58.14	60.90	65.99	0.24*	2.99*	8.09*
Raw_Local_Weight	0.00	2.54	17.32	40.75	2.54*	17.32*	40.75*
Rel_Local_Weight	0.00	-0.67	1.46	17.78	-0.67*	1.46*	17.78*
Characteristic Variables							
Share Turnover	2.10	2.27	1.94	2.48	0.17*	-0.16*	0.38*
Tobin's q	1.86	2.10	2.00	2.08	0.25*	0.14*	0.23*
Market Capitalization($MM)	4,325	12,741	14,622	5,831	8,416 *	10,297*	1,506*
Sales($MM)	3,976	8,793	8,304	4,779	4,817 *	4,328*	803.0
Debt/Assets	0.19	0.16	0.16	0.16	-0.03*	-0.03*	-0.03*
Dividends Yields	0.01	0.01	0.01	0.01	0.00	0.00	-0.01*
R&D/PPE	0.20	0.54	0.27	0.48	0.33*	0.07	0.28*
PPE /Sales	0.38	0.27	0.27	0.20	-0.11*	-0.11*	-0.19*

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Table 3.3. – Continued

Cash Flow/PPE	1.24	2.41	3.48	1.97	1.17*	2.23*	0.73*
Advertising/PPE	0.12	0.16	0.13	0.13	0.04*	0.01	0.01
Capital Expenditure /PPE	0.21	0.23	0.21	0.24	0.03*	0.01	0.03*
Percentage Shares Owned	0.01	0.01	0.01	0.00	-0.01	-0.01	-0.01
Dollar Volatility	1,009	2,692	2,974	1,436	1,683*	1,965 *	427.0*
ΔShareholder Wealth($MM)	362.8	872.3	841.2	434.0	509.5*	478.3*	71.21

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Table 3.3. – Continued

Panel B: Median (Classified by Local Mutual Fund Ownership)

	Median				Difference		
	Local_ MF_ Ownership = 0	0<Local_ MF_ Ownership < = 1%	1%< Local_MF_ Ownership < = 5%	Local_ MF_ Ownership>5%	Column (2) minus Column (1) Z-statistic	Column (3) minus Column (1) Z-statistic	Column (4) minus Column (1) Z-statistic
Column #	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Compensation Variables							
Salary($K)	359.4	436.8	450.0	412.7	77.38*	90.58*	53.27*
Total Compensation($K)	1,142	1,688	1,884	1,758	545.5*	741.6	615.5*
ΔTotal Compensation	84.76	87.43	73.36	40.48	2.67	-11.40*	-44.28*
Option-grant sensitivity	0.45	0.35	0.42	0.48	-0.10*	-0.03*	0.03
Institutional Holding Variables (%)							
Local_MF_Ownership	0.00	0.17	2.16	7.49	0.17*	2.16*	7.49*
Nonlocal_MF_Ownership	12.69	13.31	12.67	11.78	0.63*	-0.02	-0.91
NonMF_Ins_Ownership	59.26	59.47	60.87	64.63	0.21	1.62*	5.38*
Raw_Local_Weight	0.00	1.34	14.56	38.44	1.34*	14.56*	38.44*
Rel_Local_Weight	0.00	0.03	8.64	17.09	0.03*	8.64*	17.09*
Characteristic Variables							
Share Turnover	1.68	1.69	1.57	2.19	0.01*	-0.11*	0.51*
Tobin's q	1.55	1.71	1.59	1.80	0.16*	0.05*	0.25*
Market Capitalization($MM)	1,480	3,289	3,493	2,960	1,808 *	2,013*	1,479*
Sales($MM)	1,230	2,304	1,986	1,472	1,074 *	755.7*	242.6*
Debt/Assets	0.16	0.13	0.13	0.13	-0.03*	-0.02*	-0.02*
Dividends Yields	0.01	0.01	0.01	0.00	0.00	0.00	-0.01*
R&D/PPE	0.00	0.01	0.02	0.09	0.01*	0.02*	0.09*
PPE/Sales	0.20	0.16	0.16	0.15	-0.03*	-0.04*	-0.05*
Cash Flow/PPE	0.61	0.86	0.95	0.74	0.25*	0.34*	0.12*

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Table 3.3. – Continued

Advertising/PPE	0.00	0.00	0.00	0.00	0.00*	0.00	0.00*
Capital Expenditure/PPE	0.18	0.20	0.18	0.21	0.02*	0.01*	0.03*
Percentage Shares Owned	0.00	0.00	0.00	0.00	0.00*	0.00	0.00*
Dollar Volatility	420.8	819.4	841.0	776.4	398.6*	420.2*	355.6*
ΔShareholder Wealth($MM)	122.8	178.1	173.8	230.8	55.28	51.00*	107.9*

Notes to Table 3.3.:

1. See Table 3.1. for variable definitions
2. * denotes significant at 5% level.

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Table 3.4. Cross Section Correlation

	ΔTotal Comp	Rel_ Local_ Weight	Local_ MF_ Own.	Nonlocal_ MF_ Own.	SHs' Wealth	Δ SHs' Wealth	ΔSHs' Wealth *Rel_ Local_ Weight	ΔSHs' Wealth *Local_M F_ Own.	Δ SHs' Wealth * Nonlocal_ MF_ Own.	Δ SHs' Wealth * SHs' Wealth
ΔTotal Compensation	1.00	0.01	-0.01	0.02	0.09	0.23	0.03	0.17	0.23	0.22
	(0.00)	(0.13)	(0.16)	(0.001)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Rel_Local_Weight	0.00	1.00	0.31	-0.09	0.08	0.04	0.32	0.11	0.03	0.05
	(0.93)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Local_MF_Ownership	0.00	0.20	1.00	0.01	0.25	0.05	0.11	0.28	0.05	0.07
	(0.77)	(0.00)	(0.00)	(0.50)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Nonlocal_MF_Ownership	0.01	-0.07	-0.03	1.00	0.21	0.04	-0.02	0.01	0.12	0.05
	(0.11)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.17)	(0.00)	(0.00)
Shareholders' Wealth	0.03	0.01	0.02	-0.03	1.00	0.23	0.07	0.13	0.20	0.30
	(0.00)	(0.12)	(0.03)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ΔShareholders' Wealth	0.12	0.01	0.01	0.02	0.06	1.00	0.18	0.72	0.98	0.98
	(0.00)	(0.57)	(0.26)	(0.08)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ΔShareholders' Wealth * Rel_Local_Weight	0.07	0.22	0.06	-0.02	0.05	0.08	1.00	0.28	0.16	0.19
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ΔShareholders' Wealth *Local_MF _Ownership	0.11	0.04	0.18	0.00	0.03	0.57	0.19	1.00	0.72	0.74
	(0.00)	(0.00)	(0.00)	(0.95)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ΔShareholders' Wealth * Nonlocal_MF_Ownership	0.14	0.00	0.01	0.07	0.03	0.95	0.06	0.52	1.00	0.97
	(0.00)	(1.00)	(0.45)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ΔShareholders' Wealth * Shareholders' Wealth	0.03	0.00	0.00	0.01	-0.03	0.81	0.09	0.42	0.70	1.00
	(0.00)	(0.72)	(0.63)	(0.14)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Notes to Table 3.4.:
1. See Table 3.1. for variable definitions;
2. Pearson correlation coefficients are presented below the diagonal, Spearman correlation coefficients are presented above the diagonal.

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Table 3.5. Pay-for-Performance Sensitivity and Local Mutual Fund Presence

Panel A: Equation (3.4a), Pay-for-Performance Sensitivity and Relative Local Weight

	Dependent Variable: ΔTotal Compensation								
	Model (1): All Executives			Model (2): CEO			Model (3): Sum Across the Executives for a Single Firm-year		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value	Coef.	t-stat	p-value
ΔShareholder Wealth $_{t-1}$	0.009	1.74	0.08	0.027	1.38	0.17	0.070	2.43	0.02
ΔShareholder Wealth $_{t}$ * Rel_Local_Weight $_{t-1}$	0.161	2.12	0.03	0.337	1.80	0.07	0.380	1.29	0.20
*MF_Ownership $_{t-1}$	0.065	0.40	0.69	0.181	0.39	0.70	-0.137	-0.15	0.88
*NonMF_Ins_Ownership $_{t-1}$	0.198	3.41	0.00	0.676	3.73	0.00	1.739	4.96	0.00
*Ins_Concentration $_{t-1}$	0.246	3.43	0.00	0.685	2.67	0.01	0.879	2.17	0.03
* Tobin's q $_{t-1}$	-0.001	-0.20	0.84	0.011	0.80	0.42	0.013	0.54	0.59
*Log (Market Capitalization $_{t-1}$)	-0.018	-6.00	0.00	-0.050	-6.19	0.00	-0.099	-5.87	0.00
*CEO	0.065	4.88	0.00	-	-	-	-	-	-
* Year dummies(average)	0.036	2.54	0.01	0.118	2.71	0.02	0.245	2.73	0.01
* Industry dummies		Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes	
Adj R^2 (%)		6.93			11.85			12.33	
Number of Observations		12,884			2,694			2,930	

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Table 3.5. – Continued

Panel B: Equation (3.4b), Pay-for-Performance Sensitivity and Local Mutual Fund Ownership

Dependent Variable: ΔTotal Compensation

	Model (1): All Executives			Model (2): CEO			Model (3): Sum Across the Executives for a Single Firm-year		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value	Coef.	t-stat	p-value
ΔShareholder Wealth $_{t-1}$	0.009	1.82	0.07	0.028	1.44	0.15	0.073	2.43	0.02
ΔShareholder Wealth $_{t}$									
* Local_MF_Ownership $_{t-1}$(1)	1.265	2.35	0.02	2.988	2.37	0.02	3.833	1.48	0.14
* Nonlocal_MF_Ownership $_{t-1}$(2)	0.015	0.09	0.93	0.027	0.06	0.95	-0.328	-0.35	0.72
* NonMF_Ins_Ownership $_{t-1}$	0.199	3.36	0.00	0.700	3.94	0.00	1.780	5.11	0.00
*Ins_Concentration $_{t-1}$	0.257	3.55	0.00	0.698	2.77	0.01	0.934	2.30	0.02
* Tobin's q $_{t-1}$	-0.001	-0.25	0.81	0.012	0.87	0.38	0.012	0.50	0.62
*Log(Market Capitalization $_{t-1}$)	-0.018	-5.79	0.00	-0.050	-6.20	0.00	-0.101	-5.95	0.00
*CEO	0.067	4.99	0.00	-	-	-	-	-	-
* Year dummies	0.035	2.43	0.02	0.119	2.745	0.015	0.250	2.84	0.01
* Industry dummies		Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes	
F test for (1)-(2) = 0		26.36			8.43			4.53	
		(0.00)			(0.00)			(0.03)	
Adj R^2 (%)		7.02			12.18			12.88	
Number of Observations		12,881			2,693			2,929	

Notes to Table 3.5.:

1. See Table 3.1. for variable definitions;

2. Models:

Equation (3.4a) For Panel A:

$$\Delta \text{ Manager's Compensation}_{i,t} = \alpha_0 + \beta_1 \Delta\text{Shareholder Wealth}_{i,t-1} + \Delta\text{Shareholder Wealth}_{i,t} * [\beta_2 \text{Rel\_Local\_Weight}_{i,t-1} + \beta_3 \text{MF\_Ownership}_{i,t-1} + \beta_4 \text{NonMF\_Ins\_Ownership}_{i,t-1} + \beta_d \text{Ins\_Concentration}_{i,t-1} + \Sigma \beta_k \text{other control variables}_{i,t}] + \Sigma \beta_y \text{ year dummy variables}$$

Equation (3.4b) For Panel B:

$$\Delta\text{Manager's Compensation}_{i,t} = \alpha_0 + \beta_1 \Delta\text{Shareholder Wealth}_{i,t-1} + \Delta\text{Shareholder Wealth}_{i,t} * [\beta_2 \text{Local\_MF\_Ownership}_{i,t-1} + \beta_3 \text{Nonlocal\_MF\_Ownership}_{i,t-1} + \beta_4 \text{NonMF\_Ins\_Ownership}_{i,t-1} + \beta_5 \text{Ins\_Concentration}_{i,t-1} + \Sigma \beta_k \text{other control variables}_{i,t}] + \Sigma \beta_y \text{ year dummy variables}$$

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Table 3.6. Tobit Analysis: Option-Grant Sensitivity and Local Mutual Fund Presence

Panel A: Equation (3.5a), Option-Grant Sensitivity and Relative Local Weight

	Dependent Variable: Option-Grant Sensitivity					
	Model (1): All Executives			Model (2): CEO		
	Coef.	Chi-stat	p-value	Coef.	Chi-stat	p-value
ΔShareholder Wealth $_{t}$	6.752	6.11	0.01	13.810	1.52	0.22
ΔShareholder Wealth $_{t-1}$	8.454	11.58	0.00	14.832	2.20	0.14
Rel_Local_Weight $_{t-1}$	0.365	13.43	0.00	0.818	4.42	0.04
MF_Ownership $_{t-1}$	0.531	7.20	0.01	1.401	3.29	0.07
NonMF_Ins_Ownership $_{t-1}$	0.559	35.76	0.00	1.119	9.36	0.00
Ins_Concentration $_{t-1}$	-0.322	6.45	0.01	-0.850	2.93	0.09
Tobin's q $_{t-1}$	0.079	64.73	0.00	0.188	24.63	0.00
Log (Market Capitalization $_{t-1}$)	-0.162	262.4	0.00	-0.391	97.92	0.00
CEO	1.096	1,272	0.00	-	-	-
Industry dummies		Yes			Yes	
Year dummies		Yes			Yes	
Number of Observations		17,287			3,118	

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Table 3.6. – Continued

Panel B: Equation (3.5b), Option-Grant Sensitivity and Local Mutual Fund Ownership

	Dependent Variable: Option-Grant Sensitivity					
	Model (1): All Executives			Model (2): CEO		
	Coef.	Chi-stat	p-value	Coef.	Chi-stat	p-value
ΔShareholder Wealth $_{t}$	6.759	6.12	0.01	13.854	1.53	0.22
ΔShareholder Wealth $_{t-1}$	8.438	11.53	0.00	14.826	2.20	0.14
Local_MF_Ownership $_{t-1}$	1.684	7.90	0.00	4.401	3.55	0.06
Nonlocal_MF_Ownership $_{t-1}$	0.456	5.04	0.02	1.193	2.27	0.13
NonMF_Ins_Ownership $_{t-1}$	0.558	35.59	0.00	1.116	9.30	0.00
Ins_Concentration $_{t-1}$	-0.332	6.89	0.01	-0.872	3.08	0.08
Tobin's q $_{t-1}$	0.079	64.38	0.00	0.188	24.46	0.00
Log (Market Capitalization $_{t-1}$)	-0.163	264.7	0.00	-0.392	98.52	0.00
CEO	1.096	1,272	0.00	-	-	-
Industry dummies		Yes			Yes	
Year dummies		Yes			Yes	
Number of Observations		17,287			3,118	

Notes to Table 3.6.:

1. See Table 3.1. for variable definitions;

2. Models:

Equation (3.5a) For Panel A:

Δ (Value of Options Granted per \$1000 in Shareholder Wealth) $_{i, t}$ = α_0+$\beta_1$$\Delta$Shareholder Wealth$_{i, t}$+ β_2 ΔShareholder Wealth $_{i, t-1}$+ β_3 Rel_Local_Weight $_{i, t-1}$ + β_4 MF_Ownership $_{i, t-1}$ +β_5NonMF_Ins_Ownership $_{i, t-1}$+ β_6 Ins_Concentration $_{i, t-1}$ +$\Sigma\beta_k$ other control variables $_{i, t}$+ Σ β_y year dummy variables

Equation (3.5b) For Panel B:

Δ (Value of Options Granted per \$1000 in Shareholder Wealth) i, t = α_0+ $\beta_1$$\Delta$Shareholder Wealthi,t +$\beta_2$$\Delta$Shareholder Wealth i, t-1+β_3Local_MF_Ownership i, t-1+β_4 Nonlocal_MF_Ownershipi, t-1 +β_5NonMF_Ins_Ownership i, t-1+ β_6 Ins_Concentration i, t-1 +Σ β_k other control variablesi, t+ $\Sigma\beta_y$ year dummy variables

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Table 3.7. Pay-for-Performance Sensitivity and Local Mutual Fund Presence: Control for Additional Factors

Panel A: Pay-for-Performance Sensitivity and Relative Local Weight

	Dependent Variable: Δ Total Compensation								
	Model (1): All Executives			Model (2): CEO			Model (3): Sum Across the Executives for a Single Firm-year		
	Coef.	t-stat	p-value	Coef.	t-stat.	p-value	Coef.	t-stat.	p-value
ΔShareholder Wealth $_{t-1}$	0.011	1.82	0.07	0.046	1.87	0.06	0.084	2.51	0.01
ΔShareholder Wealth $_{t}$ * Rel_Local_Weight $_{t-1}$	0.219	2.57	0.01	0.553	2.29	0.02	0.905	2.44	0.01
*MF_Ownership $_{t-1}$	0.206	1.21	0.22	0.259	0.55	0.58	-0.268	-0.29	0.77
*NonMF_Ins_Ownership $_{t-1}$	0.084	1.01	0.31	0.088	0.32	0.75	1.436	2.95	0.00
*Ins_Concentration $_{t-1}$	0.121	1.35	0.18	0.277	0.80	0.42	-0.144	-0.26	0.80
* Tobin's q $_{t-1}$	-0.012	-1.79	0.07	0.023	0.77	0.44	-0.013	-0.35	0.73
*Log(Market Capitalization$_{t-1}$)	-0.004	-0.62	0.54	-0.018	-0.75	0.45	-0.066	-1.74	0.08
*CEO	0.078	5.55	0.00	-	-	-	-	-	-
*Costs of Monitoring	-0.004	-0.91	0.36	-0.107	-1.64	0.10	-0.185	-1.76	0.08
*Sales	0.000	-1.35	0.18	0.000	-1.02	0.31	0.000	-0.57	0.57
*Debt/Assets	0.058	0.67	0.51	1.134	3.87	0.00	1.585	3.11	0.00
*Dividend Yields	-0.562	-0.96	0.34	-6.501	-3.84	0.00	-2.908	-1.01	0.31
*R&D/PPE	-0.016	-1.27	0.20	-0.089	-2.44	0.02	-0.083	-1.14	0.25
*R&D Missing	-0.001	-0.03	0.98	0.230	2.92	0.00	0.191	1.34	0.18
*PPE/Sales	0.038	1.67	0.09	0.034	0.47	0.64	0.179	1.34	0.18
*Cash Flow/PPE	0.015	3.43	0.00	-0.002	-0.26	0.80	0.059	3.55	0.00
*Advertising/PPE	-0.025	-0.52	0.60	0.265	1.47	0.14	-0.039	-0.16	0.88

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Table 3.7. – Continued

*Advertising Missing	-0.036	-1.80	0.07	-0.018	-0.34	0.73	-0.114	-1.27	0.20
*Capital Expenditure/PPE	0.035	0.44	0.66	0.052	0.21	0.83	0.495	1.03	0.30
*Capital Expenditure Missing	-0.030	-0.73	0.46	0.090	0.68	0.50	0.005	0.02	0.98
*Percentage Shares Owned	-0.031	-0.29	0.77	-0.554	-0.65	0.52	0.465	0.32	0.75
*Dollar Volatility	0.000	-2.62	0.01	0.000	0.18	0.86	0.000	-1.02	0.31
* Year dummies (Average)	0.017	0.94	0.35	0.049	0.93	0.45	0.155	1.58	0.29
* Industry dummies		Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes	
Adj R^2 (%)		10.60			17.00			18.73	
Number of Observations		11,479			2,439			2,649	

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Table 3.7. – Continued

Panel B: Pay-for-Performance Sensitivity and Local Mutual Fund

	Dependent Variable: Δ Total Compensation								
	Model (1): All Executives			Model (2): CEO			Model (3): Sum Across the Executives for a Single Firm-year		
	Coef.	t-stat	p-value	Coef.	t-stat.	p-value	Coef.	t-stat.	p-value
ΔShareholder Wealth $_{t-1}$	0.011	1.84	0.07	0.043	1.76	0.08	0.086	2.53	0.01
ΔShareholder Wealth $_{t}$ * Local_MF_Ownership $_{t-1}$	1.768	3.16	0.00	3.811	2.14	0.03	7.488	2.48	0.01
* Nonlocal_MF_Ownership $_{t-1}$	0.095	0.55	0.59	0.027	0.06	0.95	-0.373	-0.41	0.68
*NonMF_Ins_Ownership $_{t-1}$	0.086	1.03	0.30	0.150	0.56	0.58	1.422	2.93	0.00
*Ins_Concentration $_{t-1}$	0.123	1.37	0.17	0.200	0.59	0.56	-0.137	-0.24	0.81
* Tobin's q $_{t-1}$	-0.012	-1.78	0.08	0.019	0.62	0.53	-0.024	-0.63	0.53
*Log(Market Capitalization$_{t-1}$)	-0.002	-0.39	0.70	-0.016	-0.63	0.53	-0.057	-1.52	0.13
*CEO	0.077	5.56	0.00	-	-	-	-	-	-
*Costs of Monitoring	-0.005	-1.03	0.30	-0.099	-1.50	0.13	-0.195	-1.88	0.06
*Sales	0.000	-1.48	0.14	0.000	-1.15	0.25	0.000	-0.80	0.42
*Debt/Assets	0.062	0.72	0.47	1.124	3.83	0.00	1.603	3.12	0.00
*Dividend Yields	-0.521	-0.89	0.37	-6.096	-3.53	0.00	-3.552	-1.21	0.23
*R&D/PPE	-0.015	-1.20	0.23	-0.084	-2.30	0.02	-0.073	-1.04	0.30
*R&D Missing	-0.002	-0.09	0.93	0.224	2.85	0.00	0.190	1.38	0.17
*PPE/Sales	0.039	1.72	0.09	0.033	0.44	0.66	0.164	1.23	0.22
*Cash Flow/PPE	0.015	3.47	0.00	-0.002	-0.23	0.82	0.056	3.58	0.00
*Advertising/PPE	-0.026	-0.54	0.59	0.271	1.46	0.14	-0.032	-0.13	0.90

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Table 3.7. – Continued

*Advertising Missing	-0.035	-1.77	0.08	-0.006	-0.11	0.91	-0.128	-1.43	0.15
*Capital Expenditure/PPE	0.033	0.43	0.67	0.043	0.18	0.86	0.431	0.89	0.37
*Capital Expenditure Missing	-0.027	-0.67	0.50	0.078	0.59	0.55	0.040	0.17	0.86
*Percentage Shares Owned	-0.029	-0.27	0.79	-0.520	-0.60	0.55	0.435	0.29	0.77
*Dollar Volatility	0.000	-2.84	0.00	0.000	0.02	0.99	0.000	-1.30	0.19
* Year dummies (Average)	0.018	1.03	0.30	0.056	1.05	0.37	0.158	1.590	0.293
* Industry dummies		Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes	
		31.96			8.96			11.79	
		(0.00)			(0.00)			(0.00)	
Adj R^2 (%)		10.63			16.54			19.59	
Number of Observations		11,477			2,439			2,650	

Notes to Table 3.7.:

See Table 3.1. for variable definitions

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Table 3.8. Option-Grant Sensitivity and Local Mutual Fund Presence; Control for Additional Factors

Panel A: Tobit Analysis: Option-Grant Sensitivity and Relative Local Weight

	Dependent Variable: Option-Grant Sensitivity					
	Model (1): All Executives			Model (2): CEO		
	Coef.	Chi-stat	p-value	Coef.	Chi-stat	p-value
ΔShareholder Wealth $_{t}$	4.964	3.17	0.08	12.050	1.14	0.29
ΔShareholder Wealth $_{t-1}$	4.917	3.49	0.06	10.915	1.08	0.30
Relative Local Weight $_{t-1}$	0.509	23.52	0.00	1.116	7.64	0.01
MF_Ownership $_{t-1}$	0.281	1.76	0.19	1.181	2.10	0.15
NonMF_Ins_Ownership $_{t-1}$	0.328	9.54	0.00	0.682	2.80	0.09
Ins_Concentration $_{t-1}$	-0.165	1.36	0.24	-0.415	0.58	0.44
Tobin's q $_{t-1}$	0.024	4.46	0.03	0.090	4.26	0.04
Log(Market Capitalization$_{t-1}$)	-0.177	172.1	0.00	-0.421	64.35	0.00
CEO	1.030	1,020	0.00	-	-	-
Costs of Monitoring	-0.191	39.13	0.00	-0.427	13.10	0.00
Sales	0.000	2.18	0.14	0.000	0.75	0.39
Debt/Assets	-0.065	0.63	0.43	0.107	0.12	0.73
Dividend Yields	-2.545	14.62	0.00	-0.068	0.00	0.98
R&D/PPE	0.045	28.75	0.00	0.098	10.40	0.00
R&D Missing	-0.118	11.24	0.00	-0.212	2.46	0.12
PPE/Sales	-0.014	0.11	0.74	-0.112	0.53	0.47
Cash Flow/PPE	0.001	1.01	0.32	-0.008	0.77	0.38
Advertising/PPE	-0.019	1.08	0.30	0.015	0.04	0.84
Advertising Missing	-0.121	16.25	0.00	-0.295	6.44	0.01
Capital Expenditure/PPE	0.834	58.09	0.00	1.667	16.17	0.00
Capital Expenditure Missing	0.314	15.60	0.00	0.601	3.81	0.05
Percentage Shares Owned	-0.979	8.47	0.00	-1.577	4.07	0.04
Dollar Volatility	0.000	6.78	0.01	0.000	1.09	0.30
Industry dummies		Yes			Yes	
Year dummies		Yes			Yes	
Number of Observations		14,698			2,821	

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Table 3.8. – Continued

Panel B: Tobit Analysis: Option-Grant Sensitivity and Local Mutual Fund Ownership

	Dependent Variable: Option-Grant Sensitivity					
	Model (1): All Executives			Model (2): CEO		
	Coef.	Chi-stat	p-value	Coef.	Chi-stat	p-value
ΔShareholder Wealth $_{t}$	4.929	3.12	0.08	11.990	1.12	0.29
ΔShareholder Wealth $_{t-1}$	4.835	3.38	0.07	10.801	1.05	0.30
Local_MF_Ownership $_{t-1}$	1.952	9.98	0.00	5.075	4.55	0.03
Nonlocal_MF_Ownership $_{t-1}$	0.168	0.59	0.44	0.904	1.17	0.28
NonMF_Ins_Ownership $_{t-1}$	0.325	9.39	0.00	0.675	2.74	0.10
Ins_Concentration $_{t-1}$	-0.184	1.69	0.19	-0.451	0.69	0.41
Tobin's q $_{t-1}$	0.024	4.35	0.04	0.089	4.17	0.04
Log(Market Capitalization$_{t-1}$)	-0.178	173.60	0.00	-0.422	64.63	0.00
CEO	1.030	1019.15	0.00	-	-	-
Costs of Monitoring	-0.191	39.12	0.00	-0.428	13.16	0.00
Sales	0.000	1.96	0.16	0.000	0.68	0.41
Debt/Assets	-0.064	0.61	0.43	0.108	0.12	0.73
Dividend Yields	-2.507	14.20	0.00	-0.029	0.00	0.99
R&D/PPE	0.046	29.07	0.00	0.098	10.52	0.00
R&D Missing	-0.121	11.84	0.00	-0.218	2.60	0.11
PPE/Sales	-0.020	0.24	0.63	-0.123	0.65	0.42
Cash Flow/PPE	0.001	1.05	0.31	-0.008	0.80	0.37
Advertising/PPE	-0.019	1.11	0.29	0.014	0.04	0.84
Advertising Missing	-0.118	15.30	0.00	-0.287	6.12	0.01
Capital Expenditure/PPE	0.827	57.00	0.00	1.652	15.85	0.00
Capital Expenditure Missing	0.310	15.23	0.00	0.595	3.73	0.05
Percentage Shares Owned	-0.986	8.58	0.00	-1.596	4.16	0.04
Dollar Volatility	0.000	7.19	0.01	0.000	1.16	0.28
Industry dummies		Yes			Yes	
Year dummies		Yes			Yes	
Number of Observations		14,698			2,821	

Notes to Table 3.8:

See Table 3.1 for variable definitions

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Table 3.9. Tobit Analysis: Option-Grant Sensitivity and Local Mutual Fund Presence: Partition Based on Managerial Ownership

Panel A: Equation (3.5a) for Sub-samples of High Managerial Ownership vs. Low Managerial Ownership

	Managerial Ownership = TOP5						**Managerial Ownership = CEOOWN**					
	Model (4):High			Model (5):Low			Model (6):High			Model (7):Low		
	Coef.	Chi.	p	Coef.	Chi.	p	Coef.	Chi.	p	Coef.	Chi.	p
ΔShareholder Wealth $_{t}$	3.200	0.16	0.69	7.487	8.87	0.00	-2.117	0.08	0.78	8.446	9.50	0.00
ΔShareholder Wealth $_{t-1}$	13.98	2.33	0.13	9.237	17.25	0.00	10.04	1.43	0.23	9.996	17.05	0.00
Rel_Local_Weight $_{t-1}$	0.093	0.32	0.57	0.565	22.56	0.00	-0.133	0.72	0.40	0.707	30.62	0.00
MF_Ownership $_{t-1}$	1.107	10.35	0.00	0.056	0.06	0.81	1.248	15.13	0.00	-0.290	1.37	0.24
NonMF_Ins_Ownership $_{t-1}$	1.019	39.74	0.00	-0.051	0.21	0.64	0.823	30.12	0.00	0.170	2.02	0.16
Ins_Concentration $_{t-1}$	-0.796	12.77	0.00	0.162	1.22	0.27	-0.571	7.62	0.01	-0.075	0.22	0.64
Tobin's q $_{t-1}$	0.090	27.07	0.00	0.062	30.37	0.00	0.107	37.40	0.00	0.056	23.45	0.00
Log(Market Capitalization$_{t-1}$)	-0.121	31.81	0.00	-0.216	384.6	0.00	-0.131	43.39	0.00	-0.218	330.2	0.00
CEO	1.221	573.2	0.00	0.981	737.5	0.00	1.126	555.3	0.00	1.069	741.0	0.00
Industry dummies		Yes			Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes			Yes	
Number of Observations		8,524			8,763			8,538			8,749	

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Table 3.9. – Continued

Panel B: Equation (3.5b) for Sub-samples of High Managerial Ownership vs. Low Managerial Ownership

	Managerial Ownership = TOP5						**Managerial Ownership = CEOOWN**					
	Model (4):High			Model (5):Low			Model (6):High			Model (7):Low		
	Coef.	Chi.	p	Coef.	Chi.	p	Coef.	Chi.	p	Coef.	Chi.	p
ΔShareholder Wealth $_{t}$	3.232	0.16	0.69	7.478	8.84	0.00	-2.125	0.08	0.78	8.473	9.54	0.00
ΔShareholder Wealth $_{t-1}$	14.05	2.35	0.12	9.152	16.91	0.00	10.11	1.45	0.23	9.958	16.88	0.00
Local_MF_Ownership $_{t-1}$	1.293	1.58	0.21	1.929	7.88	0.01	0.272	0.08	0.77	2.448	10.28	0.00
Nonlocal_MF_Ownership $_{t-1}$	1.098	9.64	0.00	-0.070	0.09	0.76	1.328	16.02	0.00	-0.473	3.49	0.06
NonMF_Ins_Ownership $_{t-1}$	1.023	40.10	0.00	-0.068	0.38	0.54	0.823	30.12	0.00	0.139	1.35	0.24
Ins_Concentration $_{t-1}$	-0.796	12.78	0.00	0.138	0.88	0.35	-0.566	7.47	0.01	-0.082	0.26	0.61
Tobin's q $_{t-1}$	0.090	27.06	0.00	0.061	29.73	0.00	0.107	37.41	0.00	0.055	22.35	0.00
Log(Market Capitalization$_{t-1}$)	-0.122	32.10	0.00	-0.216	385.4	0.00	-0.131	43.34	0.00	-0.219	332.2	0.00
CEO	1.221	573.1	0.00	0.981	736.3	0.00	1.126	555.3	0.00	1.069	739.4	0.00
Industry dummies		Yes			Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes			Yes	
Number of Observations		8,524			8,763			8,538			8,749	

Notes to Table 3.9.:

See Table 3.1. for variable definitions

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Table 4.1. Level of Executive Compensation and Local Mutual Fund Presence

Panel A: Equation (4.1a), Level of Executive Compensation and Relative Local Weight

	Model (1): All Executives			Model (2): CEO			Model (3): Sum Across the Executives for a Single Firm-year		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value	Coef.	t-stat.	p-value
ΔShareholder Wealth $_{t}$	0.074	9.66	0.00	0.172	6.71	0.00	0.570	8.01	0.00
ΔShareholder Wealth $_{t-1}$	0.050	6.15	0.00	0.136	4.80	0.00	0.383	5.56	0.00
Rel_Local_Weight$_{t-1}$	360.6	2.36	0.02	1,372	2.62	0.01	2,368	2.15	0.03
MF_Ownership $_{t-1}$	206.1	0.62	0.54	-375.2	-0.36	0.72	276	0.12	0.90
NonMF_Ins_Ownership $_{t-1}$	372.4	2.32	0.02	591.1	1.27	0.20	1,523	1.47	0.14
Ins_Concentration $_{t-1}$	520.0	2.08	0.04	1,701	2.48	0.01	2,983	1.93	0.05
Tobin's q $_{t-1}$	-114.4	-3.70	0.00	-400.8	-5.97	0.00	-955.3	-6.05	0.00
Log(Market Capitalization $_{t-1}$)	777.0	31.39	0.00	2,098	27.56	0.00	5,198	30.23	0.00
CEO	2,528	44.92	0.00	-	-	-	-	-	-
Industry dummies		Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes	
Adj R^2 (%)		37.33			59.85			62.35	
Number of Observations		16,670			2,981			3,017	

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Table 4.1. – Continued

Panel B: Equation (4.1b), Level of Executive Compensation and Local Mutual Fund Ownership

	Model (1): All Executives			Model (2): CEO			Model (3): Sum Across the Executives for a Single Firm-year		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value	Coef.	t-stat.	p-value
ΔShareholder Wealth $_{t}$	0.074	9.65	0.00	0.172	6.71	0.00	0.570	8.02	0.00
ΔShareholder Wealth $_{t-1}$	0.050	6.14	0.00	0.136	4.81	0.00	0.383	5.56	0.00
Local_MF_Ownership$_{t-1}$(1)	1,907	1.95	0.05	6,212	1.89	0.06	10,361	1.64	0.10
Nonlocal_MF_Ownership$_{t-1}$ (2)	87.67	0.26	0.79	-863.8	-0.82	0.41	-422.6	-0.18	0.86
NonMF_Ins_Ownership $_{t-1}$	366.0	2.28	0.02	530.2	1.13	0.26	1,519	1.46	0.14
Ins_Concentration $_{t-1}$	509.4	2.04	0.04	1,619	2.37	0.02	2,921	1.88	0.06
Tobin's q $_{t-1}$	-114.6	-3.71	0.00	-404.2	-6.00	0.00	-956.5	-6.04	0.00
Log (Market Capitalization $_{t-1}$)	776.3	31.35	0.00	2,095	27.59	0.00	5,193	30.19	0.00
CEO	2,525	44.89	0.00	-	-	-	-	-	-
Industry dummies		Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes	
F-test for (1) -(2) = 0		10.54			8.11			3.43	
		(0.00)			(0.00)			(0.06)	
Adj R^2 (%)		34.91			59.72			62.31	
Number of Observations		16,670			2,982			3,017	

Notes to Table 4.1.:

1. See Table 3.1. for variable definitions

2. Models:

Equation (4.1a) For Panel A:

Level of Compensation $_{i,t}$ = α_0+ β_1ΔShareholder Wealth $_{i,t}$+ β_2 ΔShareholder Wealth$_{i,t-1}$ + β_3Rel_Local_Weight $_{i,t-1}$ + β_4 MF_Ownership $_{i,t-1}$ +β_5 NonMF_Ins_Ownership $_{i,t-1}$ + β_6Ins_Concentration$_{i,t-1}$ +Σ$\beta_k$other control variables$_{i,t}$ +Σβ_y industry indicator variables+ Σ$\beta_z$year dummy variables

Equation (4.1b)For Panel B:

Level of Compensation $_{i,t}$ = α_0+ β_1ΔShareholder Wealth $_{i,t}$ + β_2 ΔShareholder Wealth $_{i,t-1}$ +β_3 Local_ MF_Ownership $_{i,t-1}$+ β_4 Nonlocal_MF_Ownership$_{i,t-1}$ +β_5NonMF_Ins_Ownership $_{i,t-1}$+ β_6 Ins_Concentration $_{i,t-1}$+Σ $\beta_k$other control variables $_{i,t}$+Σ $\beta_y$industry indicator variables+ Σβ_z year dummy variables

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Table 4.2. Level of Executive Compensation and Local Mutual Fund Presence: Control for Additional Factors

Panel A: Level of Executive Compensation and Relative Local Weight

	Model (1): All Executives			Model (2): CEO		
	Coef.	t-stat	p-value	Coef.	t-stat.	p-value
ΔShareholder Wealth $_{t}$	0.076	10.67	0.00	0.150	5.80	0.00
ΔShareholder Wealth $_{t-1}$	0.049	6.19	0.00	0.128	7.41	0.00
Rel_Local_Weight $_{t-1}$	379.9	2.34	0.02	1,492	2.73	0.01
MF_Ownership $_{t-1}$	273.3	0.78	0.44	-145.6	-0.14	0.89
NonMF_Ins_Ownership $_{t-1}$	68.18	0.39	0.70	208.6	0.41	0.68
Ins_Concentration $_{t-1}$	413.1	1.68	0.09	1,151	1.75	0.08
Tobin's q $_{t-1}$	-138.0	-5.61	0.00	-375.8	-5.63	0.00
Log(Market Capitalization$_{t-1}$)	671.0	26.05	0.00	1,704	19.76	0.00
CEO	2,524	42.15	0.00	-	-	-
Costs of Monitoring	-206.3	-2.61	0.01	-207.7	-1.44	0.15
Sales	0.009	4.45	0.00	0.024	2.57	0.01
Debt/Assets	569.8	3.50	0.00	1,835	4.08	0.00
Dividend Yields	-223.8	-0.14	0.89	-8,926	-2.34	0.02
R&D/PPE	-5.291	-0.55	0.58	33.08	1.37	0.17
R&D Missing	51.78	0.85	0.40	45.40	0.27	0.78
PPE/Sales	-180.5	-2.15	0.03	-575.3	-2.50	0.01
Cash Flow/PPE	-0.714	-2.07	0.04	-1.949	-2.18	0.03
Advertising/PPE	-11.03	-0.39	0.70	-23.34	-0.27	0.78
Advertising Missing	-153.5	-2.82	0.00	-297.6	-1.93	0.05
Capital Expenditure/PPE	465.2	2.17	0.03	935.8	1.77	0.08
Capital Expenditure Missing	-581.0	-3.47	0.00	-1,472	-2.93	0.00
Percentage Shares Owned	-1,214	-2.98	0.00	-12.76	-0.17	0.86
Dollar Volatility	0.069	6.22	0.00	0.174	4.70	0.00
Industry dummies		Yes			Yes	
Year dummies		Yes			Yes	
Adj R^2 (%)		56.62			64.00	
Number of Observations		14,151			2,696	

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Table 4.2. – Continued

Panel B: Level of Executive Compensation and Local Mutual Ownership

	Model (1): All Executives			Model (2): CEO		
	Coef.	t-stat	p-value	Coef.	t-stat.	p-value
ΔShareholder Wealth $_t$	0.077	10.98	0.00	0.150	5.79	0.00
ΔShareholder Wealth $_{t-1}$	0.049	6.24	0.00	0.128	7.45	0.00
Local_MF_Ownership$_{t-1}$(1)	2,115	2.11	0.03	7,071	2.13	0.03
NonLocal_MF_Ownership$_{t-1}$(2)	133.3	0.38	0.71	-679.7	-0.65	0.52
NonMF_Ins_Ownership $_{t-1}$	81.23	0.47	0.64	199.4	0.39	0.70
Ins_Concentration $_{t-1}$	390.7	1.60	0.11	1,112	1.69	0.09
Tobin's q $_{t-1}$	-137.6	-5.62	0.00	-377.7	-5.66	0.00
Log(Market Capitalization$_{t-1}$)	668.2	26.14	0.00	1,702	19.74	0.00
CEO	2,527	42.15	0.00	-	-	-
Costs of Monitoring	-204.9	-2.59	0.01	-211.6	-1.46	0.14
Sales	0.009	4.44	0.00	0.024	2.55	0.01
Debt/Assets	569.7	3.50	0.00	1,842	4.11	0.00
Dividend Yields	-209.5	-0.14	0.89	-8,795	-2.32	0.02
R&D/PPE	-5.091	-0.53	0.59	33.84	1.42	0.16
R&D Missing	58.24	0.96	0.34	41.42	0.25	0.80
PPE/Sales	-177.1	-2.10	0.04	-582.1	-2.52	0.01
Cash Flow/PPE	-0.699	-2.03	0.04	-1.895	-2.12	0.03
Advertising/PPE	-11.94	-0.43	0.67	-25.52	-0.30	0.76
Advertising Missing	-156.8	-2.89	0.00	-292.0	-1.90	0.06
Capital Expenditure/PPE	456.2	2.12	0.03	927.5	1.75	0.08
Capital Expenditure Missing	-582.0	-3.48	0.00	-1,478	-2.93	0.00
Percentage Shares Owned	-1,216	-2.99	0.00	-17.34	-0.23	0.82
Dollar Volatility	0.070	6.26	0.00	0.174	4.73	0.00
Industry dummies		Yes			Yes	
Year dummies		Yes			Yes	
F-test for (1)-(2) = 0		11.43			9.87	
		(0.00)			(0.00)	
Adj R^2 (%)		56.68			64.70	
Number of Observations		14,153			2,696	

Notes to Table 4.2:

1. See Table 3.1 for variable definitions

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Table 4.3. Level of Executive Compensation and Local Mutual Fund Presence: Partition Based on Managerial Ownership

Panel A: Equation (4.1 a) for Sub-samples of High Managerial Ownership vs. Low Managerial Ownership

	Managerial Ownership = TOP5						**Managerial Ownership = CEOOWN**					
	Model (4):High			Model (5):Low			Model (4):High			**Low**		
	Coef.	t-stat	p	Coef.	t-stat.	p	Coef.	t-stat.	p	Coef.	t-stat.	p
ΔShareholder Wealth $_t$	0.039	1.64	0.10	0.072	7.72	0.00	0.044	1.87	0.06	0.072	7.45	0.00
ΔShareholder Wealth $_{t-1}$	0.109	6.93	0.00	0.041	4.79	0.00	0.117	7.21	0.00	0.042	4.77	0.00
Rel_Local_Weight $_{t-1}$	217.0	1.14	0.25	595.5	2.29	0.02	130.2	0.68	0.50	715.3	2.79	0.01
MF_Ownership $_{t-1}$	350.7	0.89	0.38	372.0	0.73	0.47	591.2	1.57	0.12	345.1	0.66	0.51
NonMF_Ins_Ownership $_{t-1}$	512.6	2.83	0.00	293.0	1.15	0.25	421.1	2.31	0.02	322.0	1.25	0.21
Ins_Concentration $_{t-1}$	531.9	1.96	0.05	343.1	0.91	0.36	279.6	1.08	0.28	637.5	1.57	0.12
Tobin's q $_{t-1}$	-112.0	-4.36	0.00	-102.1	-2.04	0.04	-96.66	-3.62	0.00	-120.1	-2.35	0.02
Log(Market Capitalization$_{t-1}$)	619.0	19.20	0.00	882.5	26.58	0.00	608.9	20.09	0.00	886.0	25.86	0.00
CEO	1,931	33.68	0.00	3,262	35.26	0.00	2,002	33.26	0.00	3,166	35.36	0.00
Industry dummies		Yes			Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes			Yes	
Adj R^2 (%)		43.60			52,15			45.86			55.37	
Number of Observations		8,268			8,413			8,277			8,398	

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Table 4.3. – Continued

Panel B: Equation (4.1b) for Sub-samples of High Managerial Ownership vs. Low Managerial Ownership

	Managerial Ownership = TOP5						Managerial Ownership = CEOOWN					
	Model (4):High			Model (5):Low			Model (4):High			Model (5):Low		
	Coef.	t-stat	p	Coef.	t-stat.	p	Coef.	t-stat.	p	Coef.	t-stat.	p
ΔShareholder Wealth $_t$	0.039	1.64	0.10	0.072	7.71	0.00	0.044	1.87	0.06	0.071	7.56	0.00
ΔShareholder Wealth $_{t-1}$	0.109	6.93	0.00	0.041	4.78	0.00	0.117	7.22	0.00	0.041	4.73	0.00
Local_MF_Ownership $_{t-1}$	1,717	1.21	0.23	2,771	2.13	0.03	1,493	1.10	0.27	3,291	2.47	0.01
Nonlocal_MF_Ownership $_{t-1}$	247.7	0.62	0.53	163.6	0.32	0.75	557.7	1.46	0.15	118.9	0.23	0.82
NonMF_Ins_Ownership $_{t-1}$	515.5	2.85	0.00	301.1	1.18	0.24	422.5	2.32	0.02	307.9	1.20	0.23
Ins_Concentration $_{t-1}$	531.0	1.96	0.05	296.5	0.79	0.43	277.6	1.06	0.29	593.6	1.47	0.14
Tobin's q $_{t-1}$	-112.0	-4.37	0.00	-103.5	-2.05	0.04	-97.75	-3.65	0.00	-119.9	-2.37	0.02
Log(Market Capitalization$_{t-1}$)	618.7	19.18	0.00	881.2	26.64	0.00	610.2	20.08	0.00	883.0	25.91	0.00
CEO	1,930	33.68	0.00	3,250	35.19	0.00	2,011	33.10	0.00	3,166	35.29	0.00
Industry dummies		Yes			Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes			Yes	
F-test for (1)-(2) = 0		4.66			8.91			1.99			12.40	
		(0.03)			(0.00)			(0.16)			(0.00)	
Adj R^2 (%)		48.60			56.31			45.87			55.26	
Number of Observations		8,268			8,411			8,279			8,397	

Notes to Table 4.3.:

See Table 3.1. for variable definitions

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Table 4.4. Level of Executive Compensation, Local Mutual Fund Presence, and Option-grant Sensitivity

Panel A: Equation (4.2 a) for Sub-samples of High Managerial Ownership vs. Low Managerial Ownership

	Managerial Ownership = TOP5						**Managerial Ownership = CEOOWN**					
	Model (4):High			Model (5):Low			Model (4):High			Model (5):Low		
	Coef.	t-stat	p	Coef.	t-stat.	p	Coef.	t-stat.	p	Coef.	t-stat.	p
ΔShareholder Wealth $_{t}$	0.034	1.51	0.13	0.068	7.92	0.00	0.047	1.96	0.05	0.067	7.66	0.00
ΔShareholder Wealth $_{t-1}$	0.112	7.46	0.00	0.039	4.89	0.00	0.119	7.62	0.00	0.038	4.76	0.00
Rel_Local_Weight $_{t-1}$	163.1	0.93	0.35	350.5	1.55	0.12	155.0	0.85	0.40	459.9	2.03	0.04
MF_Ownership $_{t-1}$	132.5	0.34	0.73	390.5	0.85	0.39	245.5	0.66	0.51	368.4	0.76	0.45
NonMF_Ins_Ownership $_{t-1}$	268.2	1.52	0.13	353.7	1.46	0.14	193.7	1.11	0.27	326.3	1.32	0.19
Ins_Concentration $_{t-1}$	633.2	2.45	0.01	147.0	0.40	0.69	371.5	1.49	0.14	465.9	1.16	0.25
Option-Grant Sensitivity	511.4	15.48	0.00	540.9	11.99	0.00	521.9	15.30	0.00	516.1	12.47	0.00
Tobin's q $_{t-1}$	-141.7	-6.05	0.00	-189.8	-6.38	0.00	-135.2	-5.43	0.00	-161.5	-4.54	0.00
Log(Market Capitalization$_{t-1}$)	675.9	22.08	0.00	976.9	30.52	0.00	672.7	22.94	0.00	967.4	29.29	0.00
CEO	1,552	27.48	0.00	2,850	30.42	0.00	1,654	27.76	0.00	2,741	29.99	0.00
Industry dummies		Yes			Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes			Yes	
Adj R^2 (%)		51.12			58.80			52.66			55.37	
Number of Observations		8,270			8,408			8,283			8,398	

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Table 4.4. – Continued

Panel B: Equation (4.2b) for Sub-samples of High Managerial Ownership vs. Low Managerial Ownership

	Managerial Ownership = TOP5						Managerial Ownership = CEOOWN					
	Model (4):High			Model (5):Low			Model (4):High			Model (5):Low		
	Coef.	t-stat	p	Coef.	t-stat.	p	Coef.	t-stat.	p	Coef.	t-stat.	p
ΔShareholder Wealth $_t$	0.034	1.51	0.13	0.068	7.92	0.00	0.047	1.97	0.05	0.068	7.70	0.00
ΔShareholder Wealth $_{t-1}$	0.112	7.47	0.00	0.039	4.89	0.00	0.119	7.62	0.00	0.038	4.78	0.00
Local_MF_Ownership $_{t-1}$	1,070	0.82	0.41	1,982	1.66	0.10	1,037	0.82	0.41	2,453	1.98	0.05
Nonlocal_MF_Ownership $_{t-1}$	73.93	0.19	0.85	282.6	0.61	0.54	214.5	0.58	0.56	230.9	0.47	0.64
NonMF_Ins_Ownership $_{t-1}$	267.4	1.51	0.13	344.7	1.43	0.15	202.7	1.17	0.24	306.5	1.24	0.22
Ins_Concentration $_{t-1}$	614.3	2.38	0.02	134.2	0.37	0.72	358.9	1.45	0.15	464.1	1.16	0.25
Option-Grant Sensitivity	512.1	15.50	0.00	542.0	12.04	0.00	515.0	15.30	0.00	517.8	12.52	0.00
Tobin's q $_{t-1}$	-142.4	-6.06	0.00	-190.2	-6.39	0.00	-134.0	-5.39	0.00	-162.4	-4.57	0.00
Log(Market Capitalization$_{t-1}$)	676.2	22.08	0.00	976.7	30.56	0.00	670.4	22.85	0.00	967.6	29.28	0.00
CEO	1,557	27.47	0.00	2,849	30.44	0.00	1,650	27.66	0.00	2,739	29.99	0.00
Industry dummies		Yes			Yes			Yes			Yes	
Year dummies		Yes			Yes			Yes			Yes	
F-test for (1)-(2) = 0		2.39			4.01			1.99			6.50	
		(0.12)			(0.05)			(0.16)			(0.01)	
Adj R^2 (%)		51.20			56.31			45.87			57.78	
Number of Observations		8,270			8,411			8,279			8,392	

Notes to Table 4.4.:

See Table 3.1. for variable definitions

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BIBLIOGRAPHY

Aggarwal, R., and A. Samwick. 1999. "The Other Side of the Trade-Off: The Impact of Risk on Executive Compensation." *Journal of Political Economy* 107, 65-105.

Almazan,A., J, C. Hartzell, and L. Starks.,2005. "Active Institutional Shareholders and Cost of Monitoring: Evidence from Executive Compensation." *Journal of Financial Management* 34, 5-34.

Bebchuk, L.A., and J. M. Fried. 2003. "Executive Compensation as an Agency Problem." *Journal of Economic Perspectives* 17, 71-92.

Bebchuk, L.A., and J. M. Fried. 2004. *Pay Without Performance: The Unfulfilled Promise of Executive Compensation*. Cambridge, MA: Harvard University Press.

Benartzi, S. 2001. "Excessive Extrapolation and the Allocation of 401 (k) Accounts to Company Stock." *Journal of Finance*, 1747-1763.

Brickley, J., R. Lease, and C. Smith. 1988. "Ownership Structure and Voting on Antitakeover Amendments." *Journal of Financial Economics* 20, 267-292.

Brickley, J., R. Lease, and C. Smith 1994. "Corporate Voting: Evidence from Charter Amendment Proposals." *Journal of Corporate Finance* 1, 5–31.

Bushee, B. 1998. "The Influence of Institutional Investors on Myopic R&D Investment Behavior." *The Accounting Review* 73, 305-333.

Chen, X., J. Harford, and K. Li. 2007. "Monitoring: Which institutions matter?" *Journal of Financial Economics* 86, 279-305.

Chidambaran, N., and K. John. 1999. "Relationship Investing, Managerial Compensation, and Corporate Governance." Working paper, Tulane University and New York University.

Coval, J., and T. Moskowitz. 1999. "Home Bias at Home: Local Equity Preference in Domestic Portfolios." *Journal of Finance* 54, 2045-2074.

Coval, J., and T. Moskowitz. 2001. "The Geography of the Investment: Informed Trading and Asset Prices." *Journal of Political Economy* 109, 811-841.

www.manaraa.com

David, G.F., and E. H. Kim. 2007. "Business Ties and Proxy Voting by Mutual Funds." *Journal of Financial Economics* 85, 552-570.

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

Edison, H., and F. Warnock. 2003. "U.S. Investors' Emerging Market Equity Portfolios: A Security-Level Analysis." Working Paper, Board of Governors of the Federal Reserve System.

French, K., and J. Poterba. 1991. "Investor Diversification and International Equity Markets." *American Economics Review*, 222-226.

Gaspar J. M., and M. Massa. 2007. "Local Ownership as Private Information: Evidence on the Monitoring-liquidity Trade-off." *Journal of Financial Economics* 83, 751-792.

Gaspar J. M., M. Massa, and P. Matos. 2005. "Shareholder Investment Horizon and the Market for Corporate Control." *Journal of Financial Economics* 76, 135-165.

Gillan, S., and L. Starks. 2000. "Corporate Governance Proposals and Shareholder Activism: The Role of Institutional Investors." *Journal of Financial Economics* 57, 275-305.

Grinblatt, M., and M. Keloharju. 2001. "How Distance, Language, and Culture Influences Stockholdings and Trades." *Journal of Finance* 56, 1053-1073.

Hall, B., and K. Murphy. 2003. "The Trouble with Stock Options." *Journal of Economic Perspectives* 17, 49-70.

Hartzell, J.C., and L. Starks. 2003. "Institutional Investors and Executive Compensation." *Journal of Finance* 58, 2351-2374.

Harvey, K.D., and R. E. Shrieves. 2001. "Executive Compensation Structure and Corporate Govemance Choices." *Journal of Financial Research* 24, 495-512.

Hermalin, B., and M. Weisbach. 1991. "The Elects of Board Compensation and Direct Incentives on Firm Performance." *Financial Management* 20, 101-112.

Himmelberg, C., R. Hubbard, and D. Palia. 1999. "Understanding the Determinants of Managerial Ownership and the Link between Ownership and Performance." *Journal of Financial Economics* 53, 353-384.

Holmstrom, B. 1979. "Moral Hazard and Observability." *Bell Journal of Economics* 10, 74-91.

Huberman, G. 2001. "Familiarity Breeds Investment." *Review of Financial Studies* 14, 659-630.

www.manaraa.com

Jensen, M., and W. Meckling. 1976. "Theory of The Firm: Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics* 3, 305-360.

Jensen, M., and K. Murphy. 1990. "Performance Pay and Top-Management Incentives." *Journal of Political Economy* 98, 225-264.

Kahn, C., and A. Winton. 1998. "Ownership Structure, Speculation, and Shareholder Intervention." *Journal of Finance* 53, 99-129.

Kang, J., and R. Stulz R. 1997. "Why Is There a Home Bias? An Analysis of Foreign Portfolio Equity Ownership in Japan." *Journal of Financial Economics* 46, 3-28.

LaFond, M., and S. Roychowdhury. 2008. "Managerial Ownership and Accounting Conservatism." *Journal of Accounting Research* 46, 101-135.

Levitz, J. 2006. "Do Mutual Fund Managers Back CEO Pay? — Study Finds Firms Failed to Use Voting Power in Favor of Linking Compensation to Performance." *The Wall Street Journal*, 28 March, p. C.1.

Lewis, K. 1999. "Trying to Explain Home Bias in Equity and Consumption." *Journal of Economic Literature* 37, 571-608.

Maug, E. 1998. "Large Shareholders As Monitors: Is There a Trade-off Between Liquidity and Control?" *Journal of Finance* 53, 65-98.

Maxey, D., and R. Wolde. 1998. "CEO Pay May Be Crucial As Funds Shop." *Wall Street Journal* May 26, C25.

Morck, R., A. Shleifer, and R. Vishny. 1988. "Management Ownership and Market Valuation." *Journal of Financial Economics* 20, 293-315.

Murphy, K. 1998. *Executive Compensation. Handbook of Labor Economics*. Ashenfelter, O., and Card, D. (editors), Volume 3. New York: North Holland.

Noe, T. H. 2002. "Investor Activism and Financial Market Structure. *Review of Financial Studies* 15, 289-318.

Parrino, R., R. Sias, and L. Starks. 2003. "Voting with Their Feet: Institutional Ownership Changes around Forced CEO Turnover." *Journal of Financial Economics* 68, 3–46.

Prendergast, C. 1999. "The Provision of Incentives in Firms." *Journal of Economics Literature* 37-63

Rothberg, B., and S. Lilien. 2006. "Mutual Funds and Proxy Voting: New Evidence on Corporate Governance." *Journal of Business & Technology Law* 1, 157-184.

www.manaraa.com

Shleifer, A., and R. Vishny. 1986. "Large Shareholders and Corporate Control." *Journal of Political Economy* 94, 461-48.

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

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

Smith, G. S. and P. L. Swan. 2007. "Too Good to Be True: Do Concentrated Institutional Investors Really Reduce Executive Compensation While Raising Incentives?" Working paper. The University of New South Wales.

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

Tesar, L., and I. Werner.1995. "Home Bias and High Turnover." *Journal of International Money Finance* 14-4, 467-492

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

Zhu, N. 2002. "The Local Bias of Individual Investors," Working paper, Yale School of Management.

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