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Managerial Incentives and Takeover Wealth Gains

Dissertation

Ebru Reis

Georgia State University

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MANAGERIAL INCENTIVES AND TAKEOVER WEALTH GAINS

BY

EBRU REIS

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree
of
Doctor of Philosophy
in the Robinson College of Business
of
Georgia State University

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ACCEPTANCE

This dissertation was prepared under the direction of the candidate's Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor in Philosophy in Business Administration in the Robinson College of Business of Georgia State University.

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ABSTRACT

MANAGERIAL INCENTIVES AND TAKEOVER WEALTH GAINS

By

EBRU REIS

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Committee Chair: Dr. Jayant R. Kale

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This study examines the relationship between managerial equity incentives and takeover wealth gains both for target and acquirer firms. Although there is some research about the effect of acquirer managers' incentives on acquirer wealth gains, this paper is one of the first to investigate the effect of target managers' incentives on the wealth effects of target firms in corporate takeovers. In addition, prior research has focused on the alignment effect of equity incentives in takeovers. However, takeovers provide an opportunity to liquidate personal equity portfolio for managers who hold an undiversified portfolio of their firms' stock. In this study, I identify two hypotheses that potentially explain the effect of target managers' incentives on wealth gains. While i*ncentive alignment* hypothesis predicts a positive relationship, d*iversification driven-liquidity* hypothesis predicts a negative relationship between target managerial incentives and target wealth gains. I use a sample of 656 successful and 104 failed acquisitions over the period 1994-2003 to test these competing hypotheses. I find that for targets that are less (more) diversified, equity incentives are negatively (positively) related to wealth effects. I also find that the target managerial incentives increase the success probability of a takeover bid and this positive effect is less pronounced for diversified target managers. Based on these results, I conclude that incentive alignment argument is dominated by liquidity argument in less diversified target firms, however, holds in diversified firms. For acquirer managers, I do not find any evidence that supports incentive alignment or diversification arguments.

1. Introduction

In corporate takeovers, the firm specific equity holdings of target and acquirer managers provide two different incentives that may affect the takeover wealth effects for firms' shareholders. First, managers stand to share the benefit from the takeover wealth gains via the increase in the value of their firm-specific equity portfolio. Thus, they are induced to take value-maximizing investment decisions. Second, they may use the takeover transaction as an opportunity to obtain liquidity (target managers) or increase the diversification level of the firm (acquirer managers), in order to reduce or eliminate the risk of holding an undiversified firm-specific equity portfolio. In pursuit of diversification, managers may take acquisition decisions at the expense of firms' shareholders. Examining the effectiveness of equity-based compensation in corporate takeovers, prior research has focused on the alignment effect of equity incentives. In this study, I identify two competing hypotheses that potentially explain the effect of target and acquirer CEOs' equity incentives on takeover wealth gains.

Both target and acquirer CEOs share the benefit from takeover wealth gains via the increase in the value of their equity portfolio invested in the firm's stock, thus the equity based incentives of managers are expected to increase the wealth gains to both target and acquiring firm's shareholders. Based on this, the *Incentive Alignment* hypothesis predicts that both target and acquiring firm shareholders' wealth gains from takeovers are positively related to the equity-based incentives of target and acquiring firm managers, respectively.

On the other hand, target manager, who is unable to diversify his equity portfolio due to the trading limitations, may sacrifice takeover premiums in order to benefit from the opportunity of liquidating his equity portfolio through the takeover transaction. The benefit of this opportunity is likely to increase as more of the manager's wealth is linked to the

firm's wealth, thus at higher levels of manager's equity incentives. Therefore, *Diversification driven-liquidity* hypothesis predicts that target wealth gains are decreasing in target CEO's equity incentives. I expect this explanation to be more dominant for the target managers in undiversified firms relative to the target managers in diversified firms.

From acquiring CEO's perspective, in addition to the incentive alignment, diversification objectives may also play a role in determining the relation between equity incentives and acquirer wealth gains. Since acquirer CEO's equity portfolio is not fully diversified, he may undertake value-destroying diversifying acquisitions in order to decrease his risk. Therefore, according to the *Diversification* hypothesis for acquirer CEOs, acquirer firm returns are expected to decrease in the equity incentives of the acquiring CEO, if he is undertaking a diversifying acquisition.

I use a sample of 760 public U.S. target firms, consisting of 656 completed and 104 failed takeovers and examine these competing hypotheses to explain the relationship between managerial incentives and takeover wealth gains in target and acquiring firms. The sample period is from January 1, 1994, to December 31, 2003. A substantial part of this unique sample (275 targets) consists of firms for which CEO compensation data is collected using proxy statements, since the data is unavailable on ExecuComp for the year prior to the acquisition announcement. I define the equity-based incentives (EBI) of the manager as the dollar change in the value of stock and stock options that the CEO holds, for every $100 change in the total shareholders' wealth in the year prior to the acquisition announcement. This measure aims to capture the incentives that motivate a CEO to increase shareholders' wealth.

I measure wealth gains to target and acquiring firms using both percentage *Cumulative Abnormal Returns* (CAR) as well as *Abnormal Dollar Returns.* Although most

studies in takeover wealth gains focus on the announcement CARs, I believe that abnormal dollar returns that accrue to the shareholders around acquisition announcements reflect the net present value to firm shareholders, and capture another important aspect of the takeover decision. I use several control variables, such as attitude of the acquirer, mode of the payment, acquisition technique, multiple bidders, diversification level of target and acquiring firms, governance index of the target firm, size and relative size of the target firm that suggested as determinants of takeover wealth gains in the literature.

I find that in the overall sample of completed takeovers, target managers' incentives do not appear to have a significant effect on target wealth gains. This is possibly because both liquidity and incentive alignment explain the relationship between equity incentives and takeover wealth gains, canceling out each other's effects. In order to examine this issue further, I condition managerial incentives on the level of target diversification to capture the potential different effect of managerial incentives on target wealth gains in diversified versus undiversified firms. This allows me to distinguish between the incentive alignment and liquidity hypotheses. I use alternative measures to identify diversified and undiversified target firms for robustness purposes. The construction of these measures is described in Section 3. I find an asymmetric relation between the effects of EBI on target wealth gains in less diversified versus more diversified firms. Specifically, I find that target wealth effects are decreasing in EBI in the less diversified targets and increasing in EBI in more diversified targets.

Overall, this evidence suggests that while the incentive alignment is dominant in more diversified target firms, the liquidity effect is more pronounced for target CEOs in less diversified firms. These results are robust to alternative measures of wealth gains.

In my analysis of acquirer CEOs' equity incentives and acquirer firm wealth gains, I do not find any evidence supporting the incentive alignment or diversification arguments for acquirer CEOs. This may be attributed to the existence of different factors affecting the relationship between equity incentives of acquirers' CEOs and acquirer wealth gains, which are not included in this analysis. These may especially stem from the significant difference in size between acquiring and target firms.

Next, I examine the effect of the target and acquiring CEO's incentives on the success probability of takeovers by including failed takeovers in my analysis. I find strong evidence that managerial incentives of target managers are positively related to the success probability of takeovers in the overall sample. Finally, I find that while the positive effect of managerial incentives on the success probability of takeover persists in less diversified firms, further supporting the liquidity argument, the relation is weak in more diversified firms.

Overall, my findings provide evidence that liquidity argument dominates in takeovers where targets are less diversified, thus explaining the negative relation between equity-based managerial incentives and takeover gains. Based on my findings, I also conclude that the incentive alignment argument is the dominant explanation for the target managers' motives in the group of diversified firms.

This study builds on the existing literature in several ways. A majority of previous research focuses on the impact of managerial incentives on the acquisition returns for the acquirer shareholders. To the best of my knowledge, this is one of few the studies that examine the relationship between equity-based incentives of target CEOs and target takeover wealth gains. In addition, in examining the relation between managerial incentives and takeover wealth gains, I also consider the diversification driven-liquidity needs of

managers who are forced to hold undiversified equity portfolios. This contributes to the ongoing debate on the effectiveness of incentive pay in aligning the interests of managers with those of shareholders. Finally, analyzing the relationship between acquirer CEO's equity incentives and acquirer firm wealth changes, I did not find any evidence supporting incentive alignment argument inconsistent with Datta et al.'s (2001) results.

The rest of this paper is organized as follows: In the next section, I present a review of the related literature and develop my research hypotheses. Section 3 describes sample selection procedures, construction of main and control variables. Section 4 discusses the empirical findings. Finally, Section 5 provides a summary and concludes the study.

2. Related Literature and Development of Hypotheses

2.1. Overview

Several studies focus on the abnormal announcement returns to target and acquirer firms over the last twenty years. Much evidence has been produced showing a sharp difference between acquirer and target returns (For example, see Jensen and Ruback (1983), Jarrell, Brinkley and Netter (1988), Andrade, Mitchell, and Stafford (2001), Fuller, Netter, and Stegemoller (2002), Moeller, Schlingemann, and Stulz (2005)). Although different researchers interpret these results differently, the main finding is takeovers create a positive gain for the combined firm on average. However, a larger portion or almost all of this gain accrues to the target shareholders. Acquirer shareholders do not seem to gain much on average from the acquisition transaction. For example, Moeller, Schlingemann and Stulz (2005) examined a sample of takeovers over 1991-2001 and find that the acquiring firms' shareholders lost an aggregate $216 billion. As a result of these findings, several studies try to explain the underlying motives of acquiring manager for value-destroying acquisition

decisions. Managerial objectives (e.g. diversification, increasing size etc.) (Shleifer and Vishny, (1990)), the desire to gain reputation and prestige (Avery, Chevalier and Schaefer, (1998)), decreasing the probability of being acquired (Gorton, Kahl, Rosen, (2002)) are all suggested as potential motives for managers inducing them to deviate from value-maximizing decisions in takeovers. All these potential motives are consistent with the traditional agency theory (Jensen and Meckling, (1976)), which suggests that managers may prefer to maximize their own wealth or private benefits rather than maximizing the shareholders' wealth when they bear less than 100% of the cost of these investment decisions.

Under the agency theory, the objective of linking manager's compensation with the wealth of the shareholders through stock and/or options holdings of the firm is to align managers with the interest of shareholders and mitigate agency problems between them (Fama (1980), Haugen and Senbet (1981), Shleifer and Vishny (1988), Jensen and Murphy (1994)). Empirically, Agrawal and Mandelker (1987) show that there is a positive relationship between the stock and stock options holdings of managers and firm variance and financial leverage based on a sample of acquiring and divesting firms over the period 1974-1982. This supports the argument that executive equity holdings have a role in reducing agency problems. Consistent with this view, previous research investigating managerial incentives and corporate investment decisions find that firm performance is increasing in the equity holdings of managers. For example, Aggarwal and Samwick (2003) provide empirical evidence that both firm performance and investment are increasing in managerial incentives for a sample of U.S. firms over the period 1993-1998. Lewellen, Loderer and Rosenfeld (1985) and Amihud, Lev Travlos (1990) find that in corporate takeovers bidder management's ownership has a positive impact on bidder announcement

returns. Carline, Linn and Yadav (2002) find that managerial ownership is positively related to the changes in operating performance resulting from an acquisition.

In this paper, I build on this literature by concentrating on the effectiveness of the equity-based compensation (such as stock and stock options) in providing incentives to maximize shareholders' wealth in corporate takeovers[1]. Corporate takeovers provide an ideal setting for testing the incentives of a manager to act in the interest of the shareholders. As takeovers are usually big transactions with a potential to have a significant impact on the stock prices of both target and acquiring firms, they provide perfect opportunity for managers to deviate from value-maximizing behavior in pursuit of consuming perquisites and/or empire-building desires. Therefore, in this study, I explore the existence of alternative explanations that may weaken or strengthen the impact of incentive pay such as diversification driven-liquidity needs of the manager for his own equity portfolio.

2.2. Target Managerial Incentives and Takeover Wealth Gains

A. Incentive Alignment

Based on previously documented evidence, the incentive alignment hypothesis predicts that the equity-based incentives of the target firm CEO are positively related to the wealth gains created in takeovers for target shareholders, since target CEO will share the benefits of the wealth gains via the increase in the value of the equity portfolio (holdings of stocks and stock options) he holds in the firm's stock.

B. Diversification Driven-Liquidity

The equity portfolios of target CEOs are subject to several liquidity constraints, thus they hold undiversified stock and stock options of their own firms. In almost all of the

[1] Hall and Liebman (1998) provide evidence from samples of large U.S. firms that majority of the overall sensitivity of CEO equity-based wealth to changes in stock price comes from stock and stock option holding of the CEO.

cases, the restricted stocks become unrestricted, and unvested options became vested in case of change-in control contractually. Therefore, according to the liquidity hypothesis, target managers who hold large undiversified equity portfolios will be willing to accept lower acquisition premiums to obtain liquidity in order to diversify their personal wealth by investing elsewhere with the payments they received from the takeover deal. However, liquidity argument will lose most of its power in diversified firms where managers have less diversification driven-liquidity needs since they are already holding an equity portfolio of a diversified firm. Therefore, I expect the illiquidity effect to have less impact in the sub-sample of diversified firms.

In addition, if liquidity needs induce target CEO to sacrifice takeover premiums, one would expect that this argument would have some implications in predicting the success probability of a takeover offer given that the management of the target firm usually plays an important role in the negotiations. Based on the liquidity argument, I expect managers motivated by liquidity concerns to exert more effort in the takeover deal to ensure the completion of the deal, thus I predict a positive relationship between the equity-based incentives of managers and the likelihood of the successful takeover.

The predictions of liquidity hypothesis are consistent with Holmstrom and Nalebuff's (1992) theoretical work. In their model, they show that in the presence of non-negligible shareholders, the marginal incentive of the shareholder to tender half of his shares for free is increasing in the ownership of the shareholder in order to increase the chance of success of the deal and to obtain the premium on the remaining half of their holdings. Moreover, Cai and Vijh (2004) argue and document evidence that acquisitions offer an effective exit mechanism for target CEOs to eliminate or reduce these liquidity constraints.

2.3. Acquirer Managerial Incentives and Takeover Wealth Gains

2.3.1. Overview

As discussed in the previous section, empirical evidence shows that the distribution of wealth gain in takeovers is in the favor of the target shareholders most of the time. In other words, target shareholders usually win, whereas the average net wealth gain accrued to the acquirer shareholders is zero or the acquirer do not lose at best.[2] However, these results mask an important observation that there are acquisitions with highly positive returns and negative returns to the acquirer shareholders in the same sample. What differentiates a CEO who undertakes an acquisition, which decreases the acquiring firm's value, from one who increases it?

Similar to the discussion in the previous section for target CEOs, I also explore the effect of acquiring CEO's equity incentives on takeover wealth gains. In this analysis, I also take into consideration his potential managerial objectives for the acquisition suggested in finance literature such as diversification (Morck, Shleifer and Vishny, (1990)), which may shadow his equity–based incentives and induce him to deviate from maximization of shareholder's wealth objective. For example, Morck, Shleifer and Vishny (1990) find results showing that if the target firm is in an unrelated business, this hurts the takeover returns of the acquiring firm shareholders negatively.

A. Incentive Alignment

According to incentive theory of equity-based compensation, a CEO whose wealth is significantly tied to his company's share price will partially internalize the effects of his decisions on the firm value. In other words, since he will partially share both the losses and the gains accrued to the shareholders of the acquiring firm as a result of the acquisition

[2] See Jensen and Ruback (1983), Jarrell, Brickley, and Netter (1988), Andrade, Mitchell, and Stafford (2001) for an extensive review of wealth effects of M&As.

decision, he will have more incentives to identify better target candidates and opportunities to create more positive synergy, and to create more increase in acquiring firm value. Therefore, the incentive alignment hypothesis predicts a positive relationship between the equity-based incentives of the acquiring CEO and acquiring firm takeover wealth gains.

B. Diversification

I conjecture that as size of the equity portfolio of the acquiring manager, thus, his equity incentives increase, he is more likely to engage in acquisitions for the purpose of diversifying his portfolio rather than maximizing shareholders' wealth. Therefore, I expect the relationship between the equity incentives of the acquiring manager and acquiring firm returns to be negative in the group of managers who are undertaking diversifying acquisitions.

2.3.2. Relevant Studies

To the best of my knowledge, the most relevant study has been conducted by Datta, Datta, Raman (2001) examining the relationship between the structure of executive compensation and acquiring firm returns surrounding the deal announcement with a sample U.S. firms that acquired domestic firms over the period 1993-1998. They document a strong positive relation between "equity based compensation" (EBC) and stock price performance around the acquisition announcement, consistent with the incentive alignment hypothesis. However, Datta et al. (2001) measure EBC as the ratio of option granted to total compensation received in the year prior to the acquisition announcement, ignoring the incentives coming from the options granted in the previous years and the stock holdings of CEO. I believe that this is an important omission and needs to be considered in order to appropriately account for managerial equity incentives. I modify their measure in order to

include the incentive effect of previous stock and option grants as well[3]. In this study, I use alignment measures that capture the incentive effects of all options and stock holdings portfolio of both acquiring and target CEO. This provides the opportunity to observe the overall effectiveness of equity incentives used in executive compensation schemes.

3. Data Sources, Sample Formation and Variable Definition

3.1. Data Sources and Sample Formation

I use the Worldwide M&A Section of the Securities Data Company (SDC) database to construct a takeover sample. The sample period is restricted to the period from January 1, 1994 to December 31, 2003, since executive compensation data is not available in the Standard and Poor's ExecuComp database before 1992. To start with, I identify *110,765* M&A transactions between years 1994 to 2003 in SDC database. To be included in my takeover sample, I require the following: The transaction is listed as completed with an announcement date in the sample period; the target and acquirer are U.S. firms publicly traded on the AMEX; Nasdaq or NYSE; the transaction is identified as a "merger" or an "acquisition of majority interest" using SDC; the acquirer owns less than 20% of the target equity prior to the offer; the acquirer controls more than 50% of the target equity after the completion of the takeover; the acquirer and target firms have available stock return data around the takeover announcement listed on the Center for Research in Security Prices (CRSP) file. Finally, a transaction is included if executive compensation data for the CEO of the acquirer and target firm is available in ExecuComp database for the year prior to the acquisition year. This database includes S&P 500, Midcap, and Smallcap index firms.

[3] A more detailed discussion of the variables used in this study is given in Section 3.

At this point, I identify 834 acquisitions of which acquiring firm managers' compensation data is available in ExecuComp data. Out of this sample, only 381 acquisitions of which target firm managers' compensation data is available in ExecuComp for the year prior to the announcement year. To increase the sample size for more powerful tests, out of a sample of 453 where the data is not available in ExecuComp, I obtain executive compensation data for 275 target managers of the acquisitions database from the firm's annual proxy statement or 10-K filing, relating to the year before the takeover announcement date. The final sample consists of 656 successful acquisitions. (430 acquirer firms and 656 target firms). Using the same criteria above, I also identify a sample 104 failed takeover offers between years 1994 and 2003 using SDC database. A takeover is identified as "failed" if the status of the offer is "withdrawn" in SDC database.

I collect compensation measures of the CEOs of the target and acquiring firms which include salary, bonus, new stock options awarded, time to maturity of the options granted, Black-Scholes value of new options granted, stocks holdings, the value of in-the-money exercisable/un-exercisable options holding, ownership from ExecuComp database. I collect the same variables except Black-Scholes value of new options granted from proxy statement or 10-K filing of the firm for the set of target managers for which compensation data is not available in ExecuComp. I compute the Black - Scholes value of new options granted for this set of target managers using the Standard and Poor's ExecuComp Modified Black-Scholes Options Valuation Methodology[4].

I collect deal-specific and firm-specific factors from SDC and COMPUSTAT database. The factors I include are whether the acquirer's and target's businesses are in the same industrial category; the method of payment selected for the merger; whether the

[4] See Appendix A for the details of computation of Black-Scholes Value of options.

merger was friendly or hostile; the number of bidders for the target firm; and whether the target's and acquirer's businesses are diversified. Market value of equity of the target and acquirer firms is measured one day prior to the event window. I collect the number of segments and sales of the segments in a firm from COMPUSTAT database for the year prior to the acquisition announcement year to compute the Herfindahl Index of the firm based on segment sales.

3.2. Sample Descriptive Statistics

Panel A of Table 1 reports data on acquisition characteristics. In the sample of 656 successful acquisitions, there are 508 mergers and 148 tender offers, 629 friendly and 27 hostile acquisitions consistent with the evidence of decreasing trend of hostile takeovers in the last decade. The method of payment is all cash in 187 acquisitions, all equity in 297 acquisitions, and a combination of both in 175 acquisitions. 245 acquisitions are classified as related business takeovers if two-digit primary SIC industry codes are the same for the target and acquirer firms and 411 acquisitions are classified as unrelated business takeovers if they are not the same. In 42 acquisitions, there is more than one bidder and in 614 acquisitions, there is only one bidder. The distribution of the sample deal characteristics is similar to the other studies in takeovers.

Panel B of Table 2 reports data on firm characteristics. The mean (median) acquirer firm market capitalization is $22.6 (5.5) billion, the mean (median) target firm market capitalization is $2.5 (0.5) billion and mean (median) the relative market capitalization of the firms is 23.32% (11.76%). This suggests that target firms are significantly smaller than

the acquirer firms. Governance Index is Gompers, Ishii, Metrick's (2003) governance measure[5], which contains a count of various anti-takeover provisions[6].

The mean (median) diversification level of target firms measured by the number of four digit SIC codes reported on SDC for the firm in the acquisition year is (3.22) 3 and the mean (median) diversification level for acquirer firms is 4.89 (5). The mean (median) Herfindahl Index based on segment sales for target firms is 0.85 (1.00), whereas the mean (median) Herfindahl Index for acquirer firms is 0.70 (0.75). Given that acquirer firms are larger than target firms are, I observe a higher diversification level in this group based on both number of SIC codes and Herfindahl Index variables. Out of 656 acquisitions, only 606 targets and 599 acquirers find a match in the COMPUSTAT database for the year prior to the acquisition year. Therefore, I used these sub-samples in my analysis where I included Hefindahl Index as a variable. Mean (median) Firm Specific Risk 1, which is industry-adjusted standard deviation of market model residuals using median value in the industry is 1.95% (0%) for target firms and –2.16% (-2.01%) for acquirer firms. On the other hand, Firm Specific Risk 2, which is industry-adjusted standard deviation of market model residuals using value-weighted industry mean is 2.20% (0.78%) for target firms and 1.65% (0.58%) for acquirer firms. Table 2 presents the distribution of acquisitions by years in which the deal is announced and the average deal value for that year. The yearly trend in the number of deals is consistent with broader trend in the merger activity over the sample period, especially with a high merger activity between 1997 and 2000.

[5] Gompers, Ishii, Metrick's (2003) constructs "Governance Index" for each firm and year by adding one point for every provision that reduces shareholders rights. They look at a sum of 24 provisions, which includes 22 charter provisions, bylaw provisions, firm-level rules, and state laws.

[6] For missing values of "Governance Index" for a firm in a given year, I use the Governance Index value of that firm for the closest year available in the data file. If there is no data available for a firm, I use the median value of the Governance Index in the takeover sample for that firm.

3.3. Construction of Variables

3.3.1. Equity-Based Executive Incentives (EBI)

A. Executive Compensation Components

To measure the equity-based managerial incentives; both stock and option holdings of CEOs of the acquiring and target firms were collected from Standard and Poor's ExecuComp database and manually from Proxy Statements or 10-K filings for the year immediately preceding the acquisition announcement year. Compensation data is classified into seven compensation categories identified in the Summary Compensation Tables of proxy statements. Total compensation consists of all seven components reported in the proxy statement.[7] ExecuComp separately computes the present value of the options granted to executives using a modified Black Scholes method. The following items are collected for the CEO of each acquirer and target firm in the sample for the year prior to the acquisition announcement: a) Salary and bonus; b) number, expiration date and exercise prices of stock options granted; c) number of shares of stock held; d) number of previous stock options held; e) the volatility of the stock price; e) the average dividend payout ratio for the last 3 years.

The market value of managers' stockholdings is valued using the stock price at the end of the fiscal year as provided in ExecuComp database for the year preceding the acquisition announcement. To compute the market value of previously granted stock options I use the Black-Scholes options pricing formula. [8]

Previous studies face a significant difficulty when measuring the manager's equity incentives. One of the problems is equity–linked portion of the compensation being

[7] Annual compensation consists of salary, bonus, and other annual compensation. Other annual compensation includes restricted stocks granted, stock options granted, long-term incentive plan payouts, and other compensation.

[8] See Appendix A for the open form of the formula, parameter assumptions used in calculation and details of the computation of the market value of the options granted and previous options.

cumulative in its incentive effects through years whereas the remaining portion of the compensation is not. As emphasized by Yermack (1995), I believe that it would not be appropriate to use the fraction of the value of the stocks and options granted in one year to the total compensation in that year as a measure of equity incentives. This measure neglects the incentive effects of the previous options, restricted, and unrestricted stocks granted to the manager in the previous years as a part of compensation plan. In addition to that, Jensen and Murphy (1990) suggest that in analyzing executive equity incentives, it is more appropriate to use the incentives that come from the stock and options portfolio of the manager. In addition, Hall and Liebmann (1998) argue that using only pay-performance measures to proxy for the alignment of the manager, while ignoring managerial differences in wealth and risk preferences may generate misleading inferences.

B. Proxies for Managerial Equity Incentives

Since there is no complete consensus in measuring equity incentives of managers, I construct three different measures in an attempt to capture different aspects of the issue. I use the pay performance sensitivity of the equity portfolio of target and acquirer firm's CEO in the year prior acquisition announcement date as my first measure of equity-based managerial incentives. The sensitivity of the CEO's portfolio to the firm value is computed as the dollar increase in equity portfolio of the manager for $100 increase in firm value following Jensen and Murphy (1990). I call this measure Equity-based Incentives (EBI) and it is computed as follows:

$$\text{EBI1} = \left(\frac{\text{number of shares held}}{\text{number of outstanding shares}} + \frac{\text{number of options held on company's stock}}{\text{number of outstanding shares}} \times \partial V / \partial P \right) \times 100$$

where $\partial V / \partial P <= 1$ is the dollar change in the Black-Scholes value of the option for $1 change in the stock price.

As alternative measures, I also construct two other variables suggested in the literature as measures of equity incentives of managers (For example see Agrawal, Mandelker (1987), Hall and Liebman (1998)). The second incentive measure, EBI2, is the ratio of the total market value of stocks plus options holdings of the manager to the total compensation in the year prior to the year of the acquisition announcement. The third measure, EBI3, is the ratio of the total market value of stocks plus options holdings of a CEO to the sum of cash and bonus payments in the year prior to the year of acquisition announcement.

C. Summary Statistics

In Panel A and B of Table 3, I present the compensation and incentive measures and equity holdings of target and acquirer firm CEOs in the sample. In all compensation measures except ownership and equity-based incentives, I observe a higher level of compensation for acquirer CEOs than those of target CEOs consistent with evidence that compensation level is higher in large firms (Smith and Watts, 1992, Hall and Liebman, 1998). The mean (median) salary for target CEOs is $466 (400) thousand, and the mean (median) salary for acquirer CEO is $719 (684) thousand which is about 55% (mean) more than target CEOs. The bonus and value of option grants components of acquirer CEO are about five times (median) the corresponding compensation components of the target CEO. The mean (median) total compensation for target CEOs is $3.2 (1.3) million, whereas the mean (median) total compensation for acquirer CEO is 8.5 (3.9) million which is 3.11 (median) times the target CEO. On the other hand, while 26% of the target CEO compensation comes from the sum of restricted stock and options grants, almost half of

acquirer CEO compensation comes from equity components suggesting that the differential compensation of these two groups comes from mainly from equity grants. Similarly, on average the value of options portfolio (including unexercised previous grants) of acquirer CEO is 4.3 times the value options portfolio and the value of stock portfolio is 3.3 times the value stock portfolio of the target CEO.

On the other hand, the mean (median) acquirer CEO ownership is 1.79 (0.18)%, whereas the mean (median) target CEO ownership is 3.69 (0.5). The mean (median) Equity-Based Incentives (EBI) for acquirer CEO measured as the dollar change in the value of CEO's equity portfolio for a $100 change in the shareholders' wealth, is $2.70 (0.86) and the mean (median) EBI for target CEO is $5.37 (2.38). These results are consistent with the evidence of decreasing managerial ownership and pay-performance sensitivities in larger firms (Baker and Hall, 2004).

3.3.2. Takeover Wealth Gains

A. Measurement

I use two measures to capture the wealth gains of the target firm shareholders: Cumulative Abnormal Returns (CAR) and Abnormal Dollar Returns around the acquisition announcement date. Though the literature has focused on CARs, these returns do not capture the change in wealth of acquirer or target firm shareholders as noted by Malastesta (1983). For target and acquirer firm shareholders, the same percentage return changes their wealth more if the target is a large firm rather than small. I use the conventional event study methodology to calculate the acquirer and target firm CARs (CARA and CART respectively). The acquisition is defined to be a contest if there are more than one bid within 365 days of the first bid for the target firm. Target firm CARs are computed over a window that starts 5 days before the announcement date of first bid in the contest and ends on the

announcement date of the successful bid. Similarly, the event window for the acquirers starts 5 days before the first bid of the successful acquiring firm and ends on the announcement date of the successful bid. CARs are measured relative to a CRSP value-weighted market model regression. Returns of 240 days through 300th and 60th days prior to the announcement date were utilized to estimate the market model parameters. Firms are included in the sample if they have at least 100 daily returns available in the estimation period.

Following Bradley, Desai, and Kim (1988), I compute the dollar denominated wealth gains accrued to the target and acquirer firms' shareholders through multiplying cumulative abnormal return by the market capitalization of the firm measured one day before the starting date of the event window. These computed wealth gains are then adjusted using CPI Index to be expressed in 2003 dollars.

$$ACQWEALTH = CARA * ACQ_SIZE \quad (2)$$

$$TARWEALTH = CART * TAR_SIZE \quad (3)$$

$$COMWEALTH = ACQWEALTH + TARWEALTH \quad (4)$$

B. Summary Statistics

In Table 4, the abnormal returns measured over the event window for target and acquirer firms are reported. In Panel A, the median CAR is 20.03%, -1.98%, 1.02% for the target, acquirer, and combined firm, respectively. These results are consistent with the prior documented evidence (e.g. Andrade, Mitchell and Stafford, 2001). In Panel B, the median abnormal dollar return is $102.50, -$50.31, $37.62 million for the target, acquiring, and combined firm.

3.3.3. Proxies for Target CEO's Diversification Driven-Liquidity Needs

I adopt two different approaches to estimate the diversification driven-liquidity needs of target managers. The first one is diversification level of the target firm prior to the takeover and the second one is the firm-specific (idiosyncratic) risk of the target firm.

A. Diversification Level of the Target Firm

I use two alternative measures to proxy the diversification level of the target firm prior to the takeover: Number of businesses the firm is operating in and the Herfindahl index based on segment sales[9]. The diversification level of the target firm is measured using the count of the 4-digit SIC codes as listed in SDC database for the target firm in the year of the acquisition announcement. Herfindahl Index is as the sum of squares of segment sales divided by the total sales of the firm. Herfindahl Index provides a measure of concentration of segment sales and decreases with increasing degree of diversification. If the target manager is holding an equity portfolio of a focused firm, he is more likely to be in need of liquidity to diversify compared to a target manager of a diversified firm. Using the median value of diversification measure, I divide the sample into two groups of diversified and undiversified firms. The median value of diversification measure (number of 4-digit SIC codes) is 3 in the takeover sample used in this study. Specifically, if the diversification level of the firm is below 3, it is categorized as an undiversified firm. If the diversification measure is above or equal to median, the firm is categorized as a diversified firm (Diversification Dummy). On the other hand, the median value of Herfindahl Index is one in the target firm sample[10]. According to this, the median target firm has only one

[9] Berger and Ofek (1999) use Herfindahl Index based on segment sales instead of the number of segments.
[10] The sample reduces to 606 observations when I include Herfindahl Index as a variable, since 50 target firms in the original sample are not covered by COMPUSTAT in the year prior to the takeover announcement.

segment[11]. If the Herfindahl Index is lower than 1, the firm is categorized as a diversified firm (Herfindahl Index Dummy), otherwise it is categorized as a diversified firm.

B. Firm-Specific Risk of the Target Firm

In addition to the diversification level of the target firm, I also use the firm-specific risk of the target firm relative to its industry median as a measure of the diversification driven-liquidity needs of the target manager. Following Jin (2002) I compute the mean squared error from the market model regression as a measure of the firm-specific risk of the firm. I computed two different firms-specific risk measures to proxy for the diversification needs of the target manager. The first one is the firm-specific risk of the target firm relative to the median firm in the industry (Firm Specific Risk 1). The second one is the firm-specific risk of the target firm relative to the value-weighted industry average (Firm Specific Risk 2). The industry is defined at the 2-digit SIC code level of the primary business of the target firm. I require that that there are at least 5 firms in the industry to include the observation in later regression analyses. This decreases the sample size to 609 where firm-specific risk is included as a variable in the regression analysis. If the target firm has a high firm-specific risk relative to its industry, then the target manager is more likely to be in need of liquidity to diversify his equity portfolio compared to the target manager which a has a low firm-specific risk relative to its industry. Therefore, if the target firm has a higher value of firm specific risk than median value of the industry or the value-weighted average of the industry then the firm is categorized as undiversified, otherwise, it is categorized as diversified firm.

[11] Alternatively, I also repeat the analysis in this study using the number of segments of the firm reported in COMPUSTAT database instead of the number of 4-digit SIC codes reported for the firm in SDC. COMPUSTAT stops to include the majority of the target firms in the sample for the year the takeover is announced. Only 19 % of the takeover sample is covered by COMPUSTAT in the takeover announcement year. Therefore, I used the number of segments variable for the year prior to the takeover announcement. I find similar results.

3.3.5. Control Variables

Several firm-specific and deal–specific factors potentially affect the wealth gains (losses) from mergers and acquisition as documented in the literature. Among many other proposed variables, there is abundant evidence that the mood of the payment (hostile or friendly), the method of the payment (cash, equity), the type of the offer (tender offer, merger), the diversification of target and acquiring firms, and the relative size of the target firm to the acquiring firm and governance index of the target firm have a significant effect on the real gains accrued to the shareholders.

A. Deal Characteristics

Hostile acquisitions create large positive abnormal returns for the target firm, and large negative returns for the acquiring firm (For example, see Goergen and Renneboog, (2004)). I use dummy variable that is equal to 1 if the mood of the acquisition is hostile, 0 if it is friendly. An acquisition transaction is classified as hostile if the initial reaction variable in the SDC database is identified either as hostile or unsolicited. There is well documented evidence that both the acquirer's and target's share prices respond more positively at the time of the announcement, if the method of payment is cash in an acquisition rather than equity.[12] I use a dummy variable that equals 1, if the consideration paid is all stock, 0 otherwise.

The announcement of tender offers are also associated with higher returns to target and lower returns to acquiring firm relative to the merger announcements. (Jensen and Ruback (1983), Loughran and Vijh (1997)). I use a dummy variable that equals 1 if the offer is a tender offer, 0 if it is a merger. Industry relatedness has also been offered as a

[12] See, for example, Asquith, Bruner, and Mullins (1987), Eckbo, Giammarino and Heinkel (1990), Amihud, Lev and Travlos (1990), Peterson and Peterson (1991), Loughran and Vijh (1997), Fuller, Netter, and Stegemoller (2002).

partial explanation for abnormal returns in acquisitions (For example, Morck et al., 1990). In this study, I defined industrial relatedness using the first two digits of SIC codes of acquiring and target companies. If the acquiring and target firms share the same numbers in the first two digits of their primary SIC codes, the acquisition is considered as related, otherwise it is considered unrelated.

B. Firm Characteristics

The relative size of the target to the size of acquirer is potentially an indicator of the wealth changes (Asquith, Bruner, and Mullins, 1983), Mulherin and Boone (2000), Fuller, Netter, and Stegemoller (2002)). Target size/Acquirer size is the ratio of the market capitalization of the target firm to that of acquirer firm. Market capitalization of each firm equals share price one day before the starting day of the event window multiplied by the number common shares outstanding on the same date. I also include a dummy variable, which equals 1 if there are more than one bidder in the deal for the target. At a basic level, if there are multiple bidders competing to acquire the target, the competition effect is likely to increase the premium paid for the target firm.

I also control for the degree of diversification of the target and acquiring firms prior to the takeover. The degree of diversification is proxied by the number of SIC industry codes listed for the firm in SDC database (Kale, Kini and Ryan, (2003)). In addition, I use Gompers et.al.'s Governance Index of the target firm as a control variable. Governance Index provides a measure of the takeover defense mechanism the target firm adapts. By design, these defense mechanisms make the transfer of the corporate control more difficult for the acquiring firm. Thus, managers who are protected by these provisions are more likely to resist a takeover offer increasing the takeover premium for the target firm.

4. Empirical Results

4.1. Target Managerial Incentives and Target Firm Wealth Gains Surrounding Takeover Announcements

I first examine the effect of equity-based incentives of target managers on the takeover wealth gains for the target shareholders. For the 656 completed acquisitions sample, I run multivariate regressions of target wealth gains on target CEO's managerial incentives, firm and deal characteristics.

The dependent variable in the regressions is either the target firm CARs or the cumulative abnormal dollar returns. I use several control variables documented to affect the acquisition abnormal returns. The control variables include the governance index of the target firm, the attitude of the takeover (hostile or friendly), the mode of the payment (all stock or combination), the acquisition technique (tender offer or merger), relatedness of the business, competition in the bidding environment (single bidder, multiple bidder), the diversification of the target and acquiring firm, the size of the target and relative size of the target and acquiring firms. I also include year dummies to capture the possible effect of changing market conditions during the analysis period. I use OLS regressions when the dependent variable is CARs and median regressions when the dependent variable is abnormal dollar returns to deal with high skewness in the distribution of this variable. [13]

A. Are Target CEOs Aligned with the Interest of Shareholders?

In Table 5, I report the results on the relationship between equity incentives of target manager and target firm takeover wealth gains. According to the incentive alignment

[13] If the data are skewed and non-normal, quantile regression methodology provides a way to get more robust estimates than classic OLS estimates. Median regression minimizes the sum of absolute deviations instead of the sum of squared deviations. See Koenker and Basset (1982) for a discussion of the properties of median regressions. See Jin (2002), Barnes and Hughes (2002) and Aggarwal and Samwick (1999, 2003) for motivations to use Quantile Regressions in finance research.

hypothesis, a target CEO with high equity-based incentives is more likely to behave in the interests of the target shareholders thus, increase the abnormal returns of the acquisition that accrues to the target shareholders. All specifications include year dummies to capture the time trend during the sample period. These year dummies are suppressed to save space.

In Table 5, model 1 and 4 test the relationship between target abnormal returns (CAR in Model 1 and dollar returns in Model 4) and EBI of the target CEO in the sample of completed takeovers. In both models, the coefficient of EBI is statistically insignificant. Although this evidence is not against the incentive alignment hypothesis, it encourages further investigation for the alternative liquidity explanation. Liquidity argument predicts a negative relationship between equity incentives of managers and takeover wealth gains, whereas incentive alignment predicts a positive one. Therefore, these results are not surprising, if there is more than one explanation behind the behavior of the target manager in takeovers.

B. Diversified versus Undiversified Target CEOs

To explore the effect of target managers' equity incentives of on acquisition returns further, I consider the potentially different behavior of target managers in diversified and undiversified firms. I investigate the effect of hypothesized diversification driven-liquidity needs of managers on target wealth gains. Since the manager of the diversified firm already holds an equity portfolio of a diversified firm, I conjecture that he will have less need to liquidate his equity portfolio through the acquisition process compared to a manager who holds an equity portfolio in an undiversified firm. Therefore, I interact the EBI variable with dummy variables defined as 1 if the firm is categorized as diversified using diversification level and Herfindahl Index of the target, 0 otherwise (Models 2,3, 5 and 6 in Table 5). If liquidity argument were true, I would expect a negative sign on the EBI variable in these

models, which shows the effect of equity incentives of managers in undiversified firms on target returns. A positive coefficient on the interaction terms would be consistent with the incentive alignment argument

The results show that the coefficient of EBI is statistically significant and negative in all models 2, 3, 5 and 6 in Table 5, suggesting that primary motivation of target managers is the liquidity need in undiversified firms dominating the alignment effect from equity incentives. In addition, the estimated coefficient of the interaction term of EBI and diversification dummy in Models 2 and 5 is significantly positive at 1% and 5% levels respectively. The estimated coefficient of the interaction term of EBI and Herfindahl Index is positive and significant at 10% level in model 3, positive but not significant at conventional levels in model 6. These results are consistent with the incentive alignment explanation for the managers in diversified firms.

C. Target Firms with High Firm-specific Risk vs. Low Firm-Specific Risk

In Table 6, I report the results of the regression analysis using the firm-specific risk interaction terms instead of diversification level. A higher firm-specific risk provides more incentive to the target manager to liquidate his equity portfolio if the liquidity argument is correct. Firm Specific Risk 1 dummy variable is defined as1 if the target firm has a lower firm-specific risk than the median value in its industry, 0 otherwise. Firm Specific Risk 2 dummy variable is defined as1 if the target firm has a lower firm-specific risk than the value-weighted firm-specific risk in its industry, 0 otherwise. The estimated coefficient of EBI variable in all models in Table 6 are negative but only significant at 10% levels in Models 3 and 4, where the dependent variable is dollar returns. These results provide weak evidence that the target manager's EBI and target firm wealth gains are negatively related in firms where the firm-specific risk is higher relative to the industry, consistent with the

liquidity argument. On the other hand, the estimated coefficients of interaction terms of EBI and firms specific risk dummy variables are positive in the first three models but not significant at conventional levels.

Overall, the results provide evidence that target firm returns around acquisition announcement date are decreasing in EBI of the target CEO in undiversified firms, increasing in EBI of the target CEO in diversified firms. The results are very strong when the diversification level (measured either by number of businesses the target firm is operating in or Herfindahl Index based on segment sales) is used a measure of the liquidity needs of the target manager. The analysis provides weaker evidence for the liquidity argument when firm-specific risk is used a measure of the liquidity needs of the target manager. This evidence is consistent with the liquidity hypothesis in explaining the link between managerial incentives and takeover announcement returns of the target firm in more focused firms. It also appears that the incentive alignment argument holds for the CEOs in diversified firms but does not hold for the CEOs in focused firms.

4.2. Acquirer Managerial Incentives and Acquirer Firm Wealth Gains Surrounding Takeover Announcements

In a takeover transaction, the personal wealth of the acquirer CEO is affected by the acquirer takeover returns, since the value of his equity portfolio is linked to the stock price of the acquirer firm. On the other hand, acquirer manager who holds an undversified portfolio of his firm's stock may undertake diversifying acquisitions at the expense of acquirer shareholders in order to reduce his risk. I now investigate the link between equity-based incentives of the acquirer CEO and takeover wealth gains accrued to the acquirer shareholders. For the 656 completed acquisitions sample, I run multivariate regressions of

acquirer wealth gains on acquirer CEO's managerial incentives, firm and deal characteristics.

I use OLS regressions when the dependent variable is CARs and median regressions when the dependent variable is abnormal dollar returns. All specifications include year dummies to capture the time trend during the sample period. These year dummies are suppressed to save space.

A. Are Acquirer CEOs aligned with the interests of shareholders?

In Table 7, I document the results of the regressions that analyze the link between EBI of acquirer CEO and acquirer firm wealth gains in takeovers. According to the incentive alignment theory, I expect that takeover returns of acquiring firm increase in the EBI of acquirer CEO. The dependent variable is acquirer CARs in models 1 and 2 and cumulative abnormal dollar returns in models 3 and 4. In models 1 and 3, I investigate a direct effect between EBI variable and acquirer returns. According these results, acquirer EBI does not seem to affect acquirer returns significantly. This fails to support the findings of Datta et al. (2001). They find evidence for a positive relationship between acquirer CARs and an equity incentive measure defined as the ratio of value of granted options of CEO to the total compensation of the CEO of the acquiring firm one year prior to the acquisition year.

B. Acquirer CEOs in Diversifying versus Related Business Acquisitions

In model 2 and 4 (Table 7), I analyze the effect of EBI for managers who undertake acquisitions in a related business, using an interaction term of EBI with a related business dummy. This dummy is defined as one if the two-digit primary SIC codes of target and acquiring firms are the same, and 0 otherwise. An estimated negative coefficient of EBI in this model would support the argument that acquirer manager is more likely to undertake

value-destroying acquisition decisions in the pursuit of diversifying his equity portfolio, as the level of his EBI increases. On the other hand, a positive coefficient of the interaction term of EBI and related business dummy would support the incentive alignment argument for the managers who acquire a target in the same business. Although the results from model 2 provide findings consistent with these two predictions, the estimated coefficients are not at conventional significance levels.

4.3. Equity-based Managerial Incentives and the Success Probability of Takeovers

In this section, I investigate the effect of managerial incentives on the likelihood of the takeover success to provide further evidence in distinguishing between the liquidity, incentive alignment for target managers. When the issue is examined from the perspective of target firm's CEO, three main attitudes he may take when a takeover bid arrives, become evident. He may try to defeat the bid, negotiate aggressively to receive a better premium or negotiate passively, and be indifferent to the outcome of the takeover bid. There are several factors that potentially influence the attitude of the target firm's CEO to the bid such as his future employment (e.g. losing his job or a new position in the combined firm); the personal benefits (e.g. golden parachute, bonuses, liquidation of stock options, the premium for his own shares in the firm); and pecuniary and non-pecuniary losses (e.g. loss of compensation, prestige) in case of a successful acquisition. CEO of the target firm will choose his attitude to the bid considering the trade-off between the personal benefits and costs as a result of a possible successful acquisition. Consequently, his attitude towards the bid as well the level of effort to influence the outcome will affect the probability of the success of the acquisition. In this framework, I intend to analyze the marginal effect of the equity-based incentives of target CEO on the likelihood of a successful bid.

A. Predictions

What are the possible effects of equity incentives of a target CEO in determining his attitude towards the bid? First, I argue that as equity based incentives of target CEO increase, he is more likely to work towards a successful takeover, as this would maximize his personal benefits. In fact, in a theoretical framework, Holmstrom and Nalebuff (1992) showed that as the ownership of the target manager increases, he is more likely to tender his shares due to two reasons: receiving the value increase from the sale of his shares and increased chance of success since he can affect the outcome of the takeover as a marginal shareholder. Consequently, his willingness to negotiate with the bidder in positive terms tends to increase the probability of a successful takeover. Consistent with this argument, previous research provides evidence that target manager ownership is significantly higher in successful offers as compared to unsuccessful offers (Song and Walking (1993), Duggal and Millar (1994)). These arguments are consistent with the liquidity and incentive alignment hypotheses and predict that higher equity incentives of the target manager positively affect the likelihood of the takeover. On the other hand, we are more likely to observe failed takeovers bids among target managers who attract higher and eventually successful bids or reject a bid because it is very low for the target firm and waits for a higher bid to arrive. The target managers are expected to behave in this way if they are aligned with the interests of the target shareholders through equity incentives. Therefore, I expect the positive relationship between EBI of the target manager and success probability of the takeover to be less pronounced if the incentive alignment is the dominant explanation behind the behavior of the target manager.

In order to examine the effect of target and acquirer managers' equity incentives on the success rate of a takeover offer, in this section I conduct logistic regressions to estimate

the takeover success probability using a sample of 104 failed takeovers identified in SDC database between years 1994-2003, in addition to 656 completed takeovers over the same period. Table 10 describes the results from this analysis. The dependent variable is equal to 1 if it is a successful takeover, and 0 if it is a failed one.

B. Results

I find that in the full sample (Model 1 in Table 8) the effect of target managerial incentives increase the probability of a completed takeover deal with a significance level of 10%, consistent with the liquidity and incentive alignment arguments.

In order to investigate this further, in models 2, 3, 4 and 5 in Table 8, I distinguish the effect for the managers in undiversified and diversified firms by using an interaction term of EBI and diversification dummy variables.

The results show that the effect of managerial incentives stays positive and significant in models 1-3 and positive but not at conventional levels in models 4 and 5 for the managers in more focused target firms providing additional support for liquidity argument. The coefficient of interaction term is negative, however not significant at conventional levels in all five models. This suggests that for diversified target firm managers, EBI is less effective on the likelihood of takeover success relative to the undiversified firms. In summary, the evidence in this analysis provides further support for the liquidity argument to explain the behavior of target managers in undiversified firms in takeover offers.

According to the results in Table 8, EBI of the acquirer CEO affects the success probability of the takeover negatively, in agreement with the incentive alignment hypothesis. The interaction of this term with related business did not provide any statistically significant relationship for the effect of EBI of the acquirer CEO on the

likelihood of the takeover success. The models including these interaction terms are not reported here to save the number of models presented in Table 8.

4.4. Unsuccessful Bidders in Multi-bidder Takeover Deals

In this section, I conduct additional tests to investigate the influence of acquirer CEO's equity incentives on acquisition decisions. Inspired by the similar analyses in Kale, Kini, Ryan's (2003) study, I conjecture that a CEO who is aligned with the interest of shareholders is more likely to complete (withdraw from) a wealth-increasing (wealth-decreasing) takeover. On the other hand, the likelihood of completing a wealth-decreasing takeover is expected to be higher among CEOs whose primary motivation is to benefit from diversification effect on his equity portfolio by undertaking unrelated business acquisitions.

To test these arguments, I identify 60 matched takeover bids (30 successful, 30 withdrawn) out of 42 multi-bidder takeovers in my initial sample[14]. I conduct logistic regressions and report results in Table 9 to analyze the effect of acquirer CEO's EBI on the complete/withdraw decisions in multi-bidder takeovers. In Models 1 and 2 (Table 9), the dependent variable is one for the successful bidder and zero for the unsuccessful bidder if the announcement wealth effect for the successful bidder is positive. The dependent variable is zero for the successful bidder and one for the unsuccessful bidder if the wealth effect for the successful bidder is negative. In Models 3 and 4, the dependent variable is one if the wealth effect for the bidder is positive (successful or unsuccessful), zero otherwise.

In this framework, a positive relationship between the EBI variable and the dependent variable in the logistic regressions would be consistent with the incentive alignment hypothesis for the acquirer CEOs. On the other hand, I expect this relationship to

[14] Out of 42 multi-bidder takeovers identified earlier, 12 observations are dropped due to missing data. For these 12 multi-bidder successful takeovers, executive compensation data is not available for the unsuccessful bidder(s) in the contest. No contest includes more than two bidders in this sub-sample of 30 contests.

be negative in the subgroup of diversifying acquirer CEOs, if diversification argument is true. Therefore, I expect a negative sign on the EBI variable and a positive sign in front of the interaction term of EBI and Related Business Dummy in Models 2 and 4.

In Table 9, the estimated coefficients of EBI (negative) and interaction term of EBI (positive) are consistent with the predictions only in Model 4, however, not at conventional significance levels. In all other specifications, the results also fail to provide statistical significance for the coefficients of EBI terms. Given the previous results for the acquirer CEOs in this study, this is not surprising. Overall, all tests in this study do not provide any evidence for the incentive alignment and diversification arguments for acquirer CEOs.

4.5. Alternative Measures of EBI

The appropriate measure of equity incentives of managers remains a question in finance literature. In this section, I repeat the analysis above using two alternative measures of equity-based incentives of managers to investigate if the results are robust to different incentive measures. The first one, EBI2, is defined as the ratio of the total market value of equity holdings of a manager to the total compensation in the year prior to the year of the acquisition announcement. The second one, EBI3 is defined as the ratio of the total market value of equity of a manager to the sum of cash and bonus payments in the year prior to the year of acquisition announcement.

Table 10 reports the results of the regressions of target CARs on these two alternative EBI variables. In models 1 to 4, where the equity incentive measurement is EBI2, I document very similar results reported before though weaker. The coefficient of EBI2 variable is significant and negative in the first three models and the interaction term of EBI and diversification dummy shows some positive effect on target CARs with a significance level of 10% in model 2. In models 5 to 8, I document the analysis repeated

using equity incentive measure EBI3. The coefficient of EBI 3 variable is negative, significant in models 6 and 7 and the coefficient of interaction term is positive and significant in model 6.

Table 11 reports the results of the regressions of acquirer CARs on these two alternative EBI variables. In consistent with my previous results, I do not document statistically significant effect of EBI on acquirer returns using these two alternative definitions of equity incentives. Based on the findings documented in Tables 10 and 11, I conclude that documented findings are robust to the alternative definitions of EBI suggested in the literature.

5. Summary and Conclusion

In this study, I examine the impact of managerial incentives of target and acquirer CEOs on the wealth gains of target and acquirer firm shareholders, respectively, around takeover announcement date, using a sample of 656 successful and 104 failed U.S. based acquisitions that occur during the period 1994-2003. In addition to the incentive alignment argument, in this paper, I also consider potential impact of diversification driven-liquidity needs of managers on the on the effectiveness of incentive pay.

Overall, I find evidence that takeover wealth gains for the target shareholders are decreasing in the equity-based incentives of the target manager in undiversified firms, consistent with the liquidity hypothesis. However, in cases, where liquidity need is less likely to be an issue (in diversified firms), managerial incentives have a positive effect on the target wealth gains supporting incentive alignment argument. In addition, I also find that the probability of takeover success is increasing in the incentives of the target managers in the full sample of successful and failed takeovers consistent with liquidity argument.

However, the results suggest that this effect may be weaker for the managers in diversified firms.

Based on these findings, I conclude that the liquidity hypothesis is a more likely explanation for the behavior of target managers in less diversified target firms, while the incentive alignment hypothesis appears to dominate the liquidity argument in diversified firms. In addition, in my analysis I did not find any evidence supporting the incentive argument for acquirer managers, inconsistent with Datta et al.'s (2001) findings.

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Appendix A

Calculating CEO Stock Option Incentives

This appendix explains how I calculate the value of a single option and the value of the option portfolio of the CEO.

1- Value of a single option

I calculate the option value using Black-Scholes option pricing formula (Black and Scholes, 1973).

Option value = $Se^{-dt}N(Z) - Xe^{-rt}N(Z - \sigma T^{(0.5)})$

Where $Z = [\ln(S/X) + T(r - d + \sigma^2/2)]/\sigma T^{(0.5)}$

S = price of the underlying stock

X= exercise price of the option

T= time to maturity in years

R= log of risk-free interest rate

σ = expected volatility of the stock returns over the life of the option

N() = cumulative probability function for the normal distribution

2 - Value of previous options portfolio of CEO

Since ExecuComp does not provide exercise price and time to maturity variables for options granted before 1992, I compute fiscal year end value of option portfolio of CEO using the Core and Guay (2002) approximation method. First, using ExecuComp data, I calculate the potential gains from exercising all options at the fiscal year end. Using the number of exercisable and unexercisable options and total realizable gains, I compute the average exercise price separately for the portfolio of exercisable and unexercisable options. I use the

average of past 3 years dividend yield provided in ExecuComp and I set the maturity of the exercisable options to 3 years and the maturity of the unexercisable options 6 years. I then compute the Black-Scholes value of these values using these parameters and add this value to the value of options granted in that year. This sum is used as the total value of options portfolio of the CEO for the prior year of the acquisition announcement.

Table 1
Distribution and Descriptive Statistics of Corporate Acquisitions and Firms Characteristics 1994-2003

The sample consists of 656 completed acquisitions during the period January 1, 1994, to December 31, 2003 listed in SDC database. All acquirer firms and 381 of the target firms have executive compensation data listed in ExecuComp database. For 275 of the acquisitions the executive compensation data has been manually collected from the proxy statements of the target firms. Tender offers and mergers are transactions that are identified by SDC under acquisition technique variable. Hostile refers to the transactions that are identified by SDC either hostile or unsolicited. Related Acquisition refers to the transactions in which the target and acquirer firm have the same industry group as measured with first two-digits of primary SIC codes. The transaction is identified unrelated otherwise. Competition refers to the takeover deals in which there are more than one bidder for the target firm. Market Capitalization of the target and acquirer firms are measured 6 days before the acquisition announcement date. Relative Size is the ratio of the target market capitalization to the acquirer market capitalization. Acquirer (Target) Diversification is the number of the SIC Codes that the Acquiring (Target) Firm has during the year of the acquisition as reported in SDC. Governance Index is Gomper et.al's (2003) governance measure representing the total number of the anti-takeover provisions the target (acquiring) firm holds. Herfindahl Index is the sum of the squared segment sales of the firm divided by the total sales of the firm in the year prior to the takeover announcement year. Firm Specific Risk 1 is the standard deviation of residuals from market model regression relative to the median value in the 2-digit industry level. Firm Specific Risk 2 is the standard deviation of residuals from market model regression relative to the value-weighted average in the 2-digit industry portfolio.

Panel A:

Acquisition Characteristics	**N**	Merger	Tender Offer	
Mode of acquisition	656	508	148	
		77.44%	22.56%	
		Hostile	Friendly	
Attitude	656	27	629	
		4.12%	95.88%	
		All Cash	All Equity	Cash/Equity
Method of Payment	656	184	297	175
		28.05%	45.27%	26.68%
		Related	Unrelated	
Related Acquisition	656	245	411	
		37.35%	62.65%	
		Multiple bidders	One bidder	
Competition	656	42	614	
		6.40%	93.60%	

(Continued)

Table 1 (Continued)
Distribution and Descriptive Statistics of Corporate Acquisitions and Firms Characteristics
1994-2003

Panel B: Firm Characteristics		**Mean**	**Median**	**Min**	**Max**
Acquirer Market Cap. ($ Millions)	656	22,545.26	5,547.81	141.39	243,142.39
Target Market Cap. ($ Millions)	656	2,453.18	501.97	9.82	47,605.06
Relative Market Cap.(%)	656	23.32	11.76	0.05	138.47
Target Governance Index	656	8.89	9	3	14
Acquirer Governance Index	656	9.08	9	4	15
Target Diversification	656	3.22	3	1	8
Acquirer Diversification	656	4.89	5	1	8
Target Herfindahl Index	606	0.8531	1	0.1627	1
Acquirer Herfindahl Index	599	0.6994	0.7503	0.0869	1
Firm Specific Risk 1 (Target)	609	0.0195	0.0000	-0.0021	0.1529
Firm Specific Risk 2 (Target)	609	0.0220	0.0078	-0.0642	0.1541
Firm Specific Risk 1 (Acquirer)	602	-0.0216	-0.0201	-0.0461	0.0958
Firm Specific Risk 2 (Acquirer)	602	0.0165	0.0058	-0.0005	0.0963

Panel C: Diversification of Target and Acquirer Firms

Number of SIC Codes	Target Firm	Acquirer Firm
1	150	43
2	172	101
3	106	80
4	74	95
5	42	61
6	35	64
7	29	42
8	48	170
Total	656	656
Mean	3.22	4.89
Median	3.00	5.00

Table 2
Distribution of Acquisitions by Year

Year	Number of Deals	% Of Sample	Average Deal Value ($ Millions)
1994	21	3.2	1,303.73
1995	59	9.0	1,811.26
1996	61	9.3	2,187.36
1997	86	13.1	2,438.05
1998	112	17.1	6,120.55
1999	111	16.9	3,500.35
2000	92	14.0	5,927.81
2001	63	9.6	2,720.28
2002	31	4.7	2,489.17
2003	20	3.0	5,428.57
Total	**656**	**100**	**33,927.13**

Table 3
Compensation Characteristics of Target and Acquiring Firm CEO's

The sample consists of 656 completed acquisitions during the period January 1, 1994, to December 31, 2003 listed in SDC database. All acquirer firms and 381 of the target firms have executive compensation data listed in ExecuComp database. For 275 of the acquisitions the executive compensation data has been manually collected from the proxy statements of the target firms. All compensation data is recorded for the year prior to the acquisition announcement date. For each firm the total compensation data is the sum of salary, bonus, other annual, LTIP, value of newly granted options and the value of restricted stock options. Value of previous options portfolio is computed as described in Appendix A. Value of the stock portfolio is computed by multiplying the number of the stock shares the manager holds by the share price measured at the end of the fiscal year. Ownership is computed as the ratio of the stock holdings of the manager to the shares outstanding of the firm as measured at the end of the fiscal year prior to the acquisition year. Equity Based Incentives (EBI) are the dollar change in stock and options portfolio of Target (Acquiring) Firm's CEO for a $100 change in the market capitalization of the Target (Acquiring) Firm as measured one year prior to the announcement year. All variables are winsorized at 1% level.

Compensation Component

Panel A. Target CEO ($ Thousands)	Mean	Median	Min	Max	Median Percentage
Salary	465.52	400.00	74.04	1,300.00	34.77%
Bonus	400.53	144.50	0.00	4,600.00	12.46%
Other Annual	52.72	0.69	0.00	1,283.95	0.05%
Long-tem Incentive Plan Payouts	70.37	0.00	0.00	2,429.70	0.00%
Restricted Stock Grants	198.35	0.00	0.00	24,444.00	2.83%
Value of Options Granted	1,800.42	294.22	0.00	29,724.40	26.20%
Total Compensation	3,215.04	1,255.68	140.00	37,766.11	100.00%
Value of Options Portfolio	9,285.32	2,769.98	0.00	150,094.45	
Value of Stock Portfolio	16,956.74	3,184.37	0.00	275,498.15	
Ownership (%)	3.69	0.5	0	53.98	
EBI (per $100)	5.37	2.38	0.04	53.98	

Panel B. Acquirer CEO ($ Thousands)	Mean	Median	Min	Max	Median Percentage
Salary	719.44	684.15	100.00	2,000.00	17.94%
Bonus	1,153.89	673.99	0.00	8,749.13	17.90%
Other Annual	65.37	0.00	0.00	1,332.71	0.00%
Long-tem Incentive Plan Payouts	348.07	0.00	0.00	7,920.00	0.00%
Restricted Stock Grants	622.14	0.00	0.00	25,707.18	5.03%
Value of Options Granted	5,282.47	1,453.82	0.00	107,687.44	42.21%
Total Compensation	8,445.29	3,900.73	273.19	112,683.45	100.00%
Value of Options Portfolio	37,726.98	11,825.16	0.00	444,525.56	
Value of Stock Portfolio	304,924.55	10,284.65	0.00	17,474,430.12	
Ownership (%)	1.79	0.18	0	37.37	
EBI (per $100)	2.70	0.86	0.02	32.91	

Table 4
Cumulative Abnormal Returns and Dollar Wealth Gains for Target and Acquirer Firms

The sample consists of 656 completed acquisitions during the period January 1, 1994, to December 31, 2003 listed in SDC database. All acquirer firms and 381 of the target firms have executive compensation data listed in ExecuComp database. For 275 of the acquisitions the executive compensation data has been manually collected from the proxy statements of the target firms. The CARs are computed based on market model for target and, acquiring firms. The event window starts 5 days before the date of the first bid for the target firm and ends on the announcement day of the successful bid. The Combined Firm CAR is computed as the market value -weighted sum of the target and acquiring firm CARs. Dollar Wealth gain is computed by multiplying the CAR of the firm by the market capitalization of the firm measured 6 days before the announcement day of the acquisition. Combined dollar wealth gain is computed by summing the target and acquirer firm dollar wealth gains. All variables are winsorized at 1% level.

Panel A

CARs (%)	Mean	Median	Min	Max
Target Firm	24.71	20.03	-24.45	102.02
Acquirer Firm	-2.48	-1.98	-27.02	18.83
Combined Firm	0.72	1.02	-28.74	32.08

Panel B

Dollar wealth gain ($ Millions)	Mean	Median	Min	Max
Target Firm	393.71	102.50	-1,606.91	8,095.31
Acquirer Firm	-673.79	-50.31	-19,403.63	7,433.83
Combined Firm	-265.04	37.62	-19,484.28	12,895.57

Table 5
Equity Based Incentives of Target Firm's CEO and Target Firm Wealth Gains Around Takeover Announcement, with Diversification Level of Target Firm Interactions

The sample consists of 656 completed acquisitions during the period January 1, 1994, to December 31, 2003. The dependent variable is the announcement period Target CARs for Models 1 and 2 Cumulative Abnormal Dollar Returns for the target firm for Models 3 and 4. . The event window starts 5 days before the date of the first bid for the target firm and ends on the announcement day of the successful bid. The main explanatory variable Equity Based Incentives (EBI) is the dollar change in stock and options portfolio of Target Firm's CEO for a $100 change in the market capitalization of the Target Firm as measured one year prior to the announcement year. Diversification Dummy is a binary variable, which equals to 1 if Target Diversification is greater than the median value of diversification in the sample, 0 otherwise. Herfindahl Index Dummy is a binary variable, which equals to 1 if the Herfindahl Index of the Target Firm is less than the median value in the sample, 0 otherwise. Governance Index is Gomper et.al's (2003) governance measure representing the total number of the anti-takeover provisions the target (acquiring) firm holds. Hostile is a dummy variable which is equal to 1if the initial attitude of the acquirer is hostile, 0 if it is friendly. Stock is a dummy variable, which is equal to 1 if the acquisition payment technique includes 100% stocks, and 0 otherwise. Tender is a dummy variable, which is equal to 1 if the acquisition type is tender offer, and 0 if it is a merger. Related Business is a dummy variable, which is equal to 1 if the target and acquirer have the same two-digit SIC code, and 0 otherwise. Competition is a dummy variable, which is equal to 1 if there is more than one bidder for the same target, and 0 otherwise. Acquirer (Target) Diversification is the number of the SIC Codes that the Acquiring (Target) Firm has during the year of the acquisition as reported in SDC . Relative Size is the ratio of log of market capitalization of the Target firm to the log of market capitalization of the Acquiring Firm measured one day before the starting date of the event window. Target Size is the log of market capitalization of the Target Firm measured one day before the starting date of the event window. All variables are winsorized at 1% level and all specifications have year dummies. The numbers in parentheses are t-statistics. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

	OLS Regressions			**Median Regressions**		
	Target CARs			**Target Dollar Returns**		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.6712	0.6729	0.6637	-185,063	-175,067	-165,169
	5.61***	5.66***	5.18***	-3.81***	-4.54***	-4.07***
EBI	-0.0928	-0.2426	-0.2194	-52,954	-81,532	-72,059
	-0.88	-2.10**	-1.81*	-1.27	-2.15**	-1.88*
EBI*Diversification Dummy		0.7213			181,396	
		3.05***			2.52**	
EBI*HI Dummy			0.3935			53,233
			1.91*			0.81
Governance Index	0.0070	0.0084	0.0070	5,115	5,436	3,281
	1.63	1.95*	1.48	2.87***	3.76***	2.12**

(Continued)

Table 5 (Continued)
Equity Based Incentives of Target Firm's CEO and Target Firm Wealth Gains Around Takeover Announcement, with Diversification Level of Target Firm Interactions

	OLS Regressions			Median Regressions		
	Target CARs			Target Dollar Returns		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Governance Index	0.0070	0.0084	0.0070	5,115	5,436	3,281
	1.63	1.95*	1.48	2.87***	3.76***	2.12**
Hostile	0.0116	0.0213	0.0060	91,460	99,836	122,532
	0.24	0.44	0.12	4.42***	5.98***	7.44***
Stock	-0.0287	-0.0272	-0.0282	-5,672	-6,275	-10,283
	-1.40	-1.34	-1.29	-0.67	-0.93	-1.45
Tender	0.1079	0.1049	0.1036	20,836	19,082	14,403
	4.33***	4.24***	4.03***	2.04**	2.33**	1.73*
Related Business	-0.0179	-0.0203	-0.0173	-4,155	-7,302	-7,961
	-0.93	-1.07	-0.86	-0.53	-1.15	-1.22
Competition	0.0483	0.0438	0.0547	8,825	4,951	-18,747
	1.26	1.14	1.31	0.52	0.36	-1.39
Acquirer Diversification	0.0035	0.0045	0.0053	3,971	4,318	4,488
	0.84	1.07	1.19	2.36**	3.19***	3.20***
Target Diversification	-0.0020	-0.0077	-0.0053	2,480	923	1,582
	-0.42	-1.50	-1.04	1.25	0.54	0.95
Relative Size	-0.4577	-0.4631	-0.4545	44,993	38,843	50,080
	-3.53***	-3.60***	-3.37***	1.01	1.11	1.38
Target Size	-0.0118	-0.0114	-0.0119	0.0006	0.0005	0.0005
	-1.59	-1.55	-1.50	242.90***	302.57***	263.10***
Adj R^2	0.1554	0.1663	0.1517	0.3138	0.3132	0.3071
Observations	656	656	606	656	656	606

Table 6
Equity Based Incentives of Target Firm's CEO and Target Firm Wealth Gains Around Takeover Announcement, with Firm-specific Risk Interactions

The sample consists of 656 completed acquisitions during the period January 1, 1994, to December 31, 2003. The dependent variable is the announcement period Target CARs for Models 1 and 2 Cumulative Abnormal Dollar Returns for the target firm for Models 3 and 4. The event window starts 5 days before the date of the first bid for the target firm and ends on the announcement day of the successful bid. The main explanatory variable Equity Based Incentives (EBI) is the dollar change in stock and options portfolio of Target Firm's CEO for a $100 change in the market capitalization of the Target Firm as measured one year prior to the announcement year. Firm Specific Risk Dummy 1 is a binary variable which is equal to one if the variance of residuals from market model regression (for target firms)relative to the median value in the 2-digit industry level is negative, 0 otherwise. Firm Specific Risk Dummy 2 is a binary variable which s equal to 1 if the variance of residuals from market model regression (for target firms) relative to the value-weighted average in the 2-digit industry portfolio is negative, 0 otherwise. Governance Index is Gomper et.al's (2003) governance measure representing the total number of the anti-takeover provisions the target firm holds. Hostile is a dummy variable which is equal to 1if the initial attitude of the acquirer is hostile, 0 if it is friendly. Stock is a dummy variable, which is equal to 1 if the acquisition payment technique includes 100% stocks, and 0 otherwise. Tender is a dummy variable, which is equal to 1 if the acquisition type is tender offer, and 0 if it is a merger. Related Business is a dummy variable, which is equal to 1 if the target and acquirer have the same two-digit SIC code, and 0 otherwise. Competition is a dummy variable, which is equal to 1 if there is more than one bidder for the same target, and 0 otherwise. Acquirer (Target) Diversification is the number of the SIC Codes that the Acquiring (Target) Firm has during the year of the acquisition as reported in SDC. Relative Size is the ratio of log of market capitalization of the Target firm to the log of market capitalization of the Acquiring Firm measured one day before the starting date of the event window. Target Size is the log of market capitalization of the Target Firm measured one day before the starting date of the event window. All variables are winsorized at 1% level and all specifications have year dummies. The numbers in parentheses are t-statistics. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

	OLS Regressions		**Median Regressions**	
	Target CARs		**Target Dollar Returns**	
	Model 1	Model 2	Model 3	Model 4
Intercept	0.6834	0.6914	-189,479	-193,444
	5.45***	5.53***	-3.89***	-4.22***
EBI	-0.1122	-0.1625	-73,609	-72,813
	-0.93	-1.40	-1.66*	-1.74*
EBI*Firm-Specific Risk Dummy1	0.0252		8,877	
	0.13		0.12	
EBI*Firm-Specific Risk Dummy2		0.2789		-6,931
		1.32		-0.09
Governance Index	0.0068	0.0071	6,747	6,737
	1.51	1.58	3.77***	3.98***
Hostile	-0.0101	-0.0099	86,739	75,524
	-0.19	-0.19	4.07***	3.84***
Stock	-0.0356	-0.0341	-7,190	-7,361
	-1.68*	-1.61	-0.86	-0.92
Tender	0.1097	0.1101	19,932	18,988
	4.22***	4.24***	1.95*	1.96**

(Continued)

Table 6 (Continued)
Equity Based Incentives of Target Firm's CEO and Target Firm Wealth Gains Around Takeover Announcement, with Firm-specific Risk Interactions

	OLS Regressions		Median Regressions	
	Target CARs		Target Dollar Returns	
	Model 1	Model 2	Model 3	Model 4
Related Business	-0.0131	-0.0135	-8,893	-9,173
	-0.65	-0.67	-1.12	-1.23
Competition	0.0688	0.0705	19,065	30,793
	1.72*	1.76*	1.11	1.87*
Acquirer Diversification	0.0031	0.0028	5,270	5,083
	0.70	0.64	3.10***	3.18***
Target Diversification	0.0006	0.0005	2,203	2,117
	0.11	0.09	1.09	1.11
Relative Size	-0.5197	-0.5288	32,504	38,777
	-3.85***	-3.92***	0.74	0.93
Target Size	-0.0108	-0.0108	0.0007	0.0006
	-1.38	-1.39	235.05***	248.89***
Adjusted R^2	0.1595	0.1619	0.2936	0.2936
Observations	609	609	609	609

Table 7
Equity Based Incentives of Acquirer Firm's CEO and Acquirer Firm Wealth Gains Around Takeover Announcement, with Related Business Interactions

The sample consists of 656 completed acquisitions during the period January 1, 1994, to December 31, 2003. The dependent variable is the announcement period Acquirer CARs for Models 1 and 2 Cumulative Abnormal Dollar Returns for the acquiring firm for Models 3 and 4. The event window starts 5 days before the date of the first bid of the acquirer and ends on the announcement day of the successful bid. The main explanatory variable Equity Based Incentives (EBI) is the dollar change in stock and options portfolio of Acquirer Firm's CEO for a $100 change in the market capitalization of the Acquirer Firm as measured one year prior to the announcement year. Related Business is a dummy variable, which equals to 1 if the target and acquirer have the same two-digit SIC code, and 0 otherwise. Hostile is a dummy variable which is equal to 1if the initial attitude of the acquirer is hostile, 0 if it is friendly. Stock is a dummy variable, which is equal to 1 if the acquisition payment technique includes 100% stock, and 0 otherwise. Tender is a dummy variable, which is equal to 1 if the acquisition type is tender offer, and 0 if it is a merger. Related Business is a dummy variable, which is equal to 1 if the target and acquirer have the same two-digit SIC code, and 0 otherwise. Competition is a dummy variable, which is equal to 1 if there is more than one bidder for the same target, and 0 otherwise. Acquirer (Target) Diversification is the number of the SIC Codes that the Acquiring (Target) Firm has during the year of the acquisition as reported in SDC. Relative Size is the ratio of log of market capitalization of the Target firm to the log of market capitalization of the Acquiring Firm measured one day before the starting date of the event window. Acquirer Size is the log of market capitalization of the Acquirer Firm measured one day before the starting date of the event window. All variables are winsorized at 1% level and all specifications have year dummies. The numbers in parentheses are t-statistics. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

	OLS Regressions		**Median Regressions**	
	Acquirer CARs		**Acquirer Dollar Returns**	
	Model 1	Model 2	Model 3	Model 4
Intercept	0.2167	0.2168	331,267	354,926
	3.36***	3.36***	1.77*	1.63
EBI	-0.0809	-0.0877	128,803	92,646
	-1.24	-0.90	0.47	0.19
EBI*Related Business Dummy		0.0124		121,056
		0.10		0.19
Hostile	0.0306	0.0306	75,256	64,725
	1.64	1.64	0.91	0.67
Stock	-0.0145	-0.0145	-53,363	-63,433
	-1.85*	-1.86*	-1.58	-1.61
Tender	0.0125	0.0125	9,966	13,594
	1.32	1.32	0.25	0.29
Related Business	0.0024	0.0021	-5,134	-11,452
	0.33	0.26	-0.16	-0.28
Competition	-0.0319	-0.0319	-65,629	-64,485
	-2.17**	-2.17**	-0.96	-0.80
Acquirer Diversification	-0.0002	-0.0002	-7,915	-7,239
	-0.13	-0.12	-1.14	-0.89
Target Diversification	0.0040	0.0040	8,475	10,193
	2.21**	2.21**	1.11	1.14

(Continued)

Table 7 (Continued)
Equity Based Incentives of Acquirer Firm's CEO and Acquirer Firm Wealth Gains Around Takeover Announcement, with Related Business Interactions

	OLS Regressions		Median Regressions	
	Acquirer CARs		Acquirer Dollar Returns	
	Model 1	Model 2	Model 3	Model 4
Relative Size	-0.1910	-0.1908	-446,047	-427,331
	-4.46***	-4.44***	-2.46**	-2.01**
Acquirer Size	-0.0049	-0.0049	-0.0215	-0.0214
	-2.07**	-2.07**	-58.21***	-49.54***
Adj R^2	0.0611	0.0596	0.0351	0.0342
Observations	656	656	656	656

Table 8
Managerial Incentives and the Probability of a Successful Takeover

The sample consists of 760 completed and failed acquisitions during the period January 1, 1994, to December 31, 2003. The dependent variable is a binary variable, which is equal to 1 if the acquisition offer is completed successfully, and 0 if it failed. The main explanatory variables Acquirer (Target) Equity Based Incentives (EBI) is the dollar change in stock and options portfolio of Acquirer's (Target) CEO for a $100 change in the market capitalization of the Acquiring (Target) Firm as measured one year prior to the announcement year. Diversification Dummy is a binary variable, which equals to 1 if Target Diversification is greater than the median value of diversification in the sample, 0 otherwise. Herfindahl Index Dummy is a binary variable, which equals to 1 if the Herfindahl Index of the Target Firm is less than the median value in the sample, 0 otherwise. Governance Index is Gomper et.al's (2003) governance measure representing the total number of the anti-takeover provisions the target firm holds. Tenure Dummy is equal to 1 if the tenure of the Target CEO is greater than the median value in the sample, 0 otherwise. Hostile is a dummy variable which is equal to 1if the initial attitude of the acquirer is hostile, 0 if it is friendly. Stock is a dummy variable, which is equal to 1 if the acquisition payment technique includes 100% stock, and 0 otherwise. Tender isa dummy variable, which is equal to 1 if the acquisition type is tender offer, and 0 if it is a merger. Related Business is a dummy variable, which is equal to 1 if the target and acquirer have the same two-digit SIC code, and 0 otherwise. Competition is a dummy variable, which is equal to 1 if there is more than one bidder for the same target, and 0 otherwise. Acquirer (Target) Diversification is the number of the SIC Codes that the Acquiring (Target) Firm has during the year of the acquisition as reported in SDC. Relative Size is the ratio of log of market capitalization of the Target firm to the log of market capitalization of the Acquiring Firm measured one day before the starting date of the event window. All variables are winsorized at 1% level and all specifications have year dummies. The numbers in parentheses are z-statistics. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

	Model 1	Model 2	Model 3	Model4	Model 5
Intercept	2.9709	2.9856	2.6787	2.9874	2.9290
	3.28***	2.86***	2.74***	2.62***	2.57**
Acquirer EBI	-4.1285	-4.3355	-3.9011	-4.2196	-4.2715
	-2.31**	-2.37**	-2.18**	-2.00**	-2.04**
Target EBI	6.8218	10.9765	9.0251	6.4225	8.2073
	1.80*	2.03**	1.84*	1.37	1.61
Target EBI*Diversification Dummy		-10.1545			
		-1.52			
Target EBI*HI Dummy			-3.8276		
			-0.61		
Target EBI*Firm Specific Dummy 1				-1.6851	
				-0.24	
Target EBI*Firm Specific Dummy 2					-2.8341
					-0.42
Target Firm Governance Index	-0.0131	-0.0200	-0.0123	-0.0217	-0.0193
	-0.04	-0.31	-0.19	-0.32	-0.28
Hostile	-3.0614	-3.0993	-2.9322	-3.1761	-3.1672
	-7.96***	-7.92***	-7.46***	-7.79***	-7.75***
Stock	0.4753	0.4564	0.3920	0.4163	0.4086
	1.55	1.48	1.24	1.30	1.28

(Continued)

Table 8 (Continued)
Managerial Incentives and the Probability of a Successful Takeover

	Model 1	Model 2	Model 3	Model4	Model 5
Tender	1.7346	1.7595	1.6990	1.8536	1.8529
	3.79***	3.84***	3.73***	3.71***	3.71***
Related Business	-0.0425	-0.0258	-0.0881	0.0403	0.0382
	-0.14	-0.08	-0.28	0.12	0.12
Competition	-1.4950	-1.5053	-1.3512	-1.4008	-1.4043
	-4.24***	-4.29***	-3.70***	-3.74***	-3.76***
Acquirer Diversification	-0.0222	-0.0237	-0.0269	-0.0211	-0.0204
	-0.34	-0.36	-0.41	-0.31	-0.30
Target Diversification	-0.0057	0.0400	-0.0051	-0.0131	-0.0099
	-0.09	0.55	-0.08	-0.18	-0.14
Relative Size	-1.3727	-1.3465	-1.2290	-1.2438	-1.2300
	-3.58***	-3.53***	-3.02***	-3.07***	-3.04***
Pseduo R^2	0.3692	0.3729	0.3472	0.3724	0.3726
Observations	760	760	701	707	707

Table 9
Unsuccessful Bidders in Successful Multi-bidder Takeover Deals

The sample consists of 60 bidders (30 successful and 30 failed) from 30 matched contests during the period January 1, 1994, to December 31, 2003. In Models 1 and 2, the dependent variable equals one for successful (unsuccessful) bidders if the abnormal wealth gain for the successful bidder is positive (negative), zero (one) otherwise. In Models 3 and 4, the dependent variable equals one if the bidder has a positive abnormal wealth gain, zero otherwise. The main explanatory variables Acquirer (Target) Equity Based Incentives (EBI) is the dollar change in stock and options portfolio of Acquirer's (Target) CEO for a $100 change in the market capitalization of the Acquiring (Target) Firm as measured one year prior to the announcement year. Related Business is a dummy variable, which equals to 1 if the target and acquirer have the same two-digit SIC code, and 0 otherwise. Hostile is a dummy variable which is equal to 1if the initial attitude of the acquirer is hostile, 0 if it is friendly. Stock is a dummy variable which is equal to 1 if the acquisition payment technique includes 100% stock, and 0 otherwise. Tender is a dummy variable, which is equal to 1 if the acquisition type is tender offer, and 0 if it is a merger. Related Business is a dummy variable, which is equal to 1 if the target and acquirer have the same two-digit SIC code, and 0 otherwise. Acquirer (Target) Diversification is the number of the SIC Codes that the Acquiring (Target) Firm has during the year of the acquisition as reported in SDC. Relative Size is the ratio of log of market capitalization of the Target firm to the log of market capitalization of the Acquiring Firm measured one day before the starting date of the event window. All variables are winsorized at 1% level and all specifications have year dummies. The numbers in parentheses are z-statistics. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

	Model 1	Model 2	Model 3	Model4
Intercept	2.7220	2.5059	-2.7147	-2.2555
	1.43	1.31	-1.17	-0.95
Acquirer EBI	-10.2773	2.0483	-8.6800	-91.1044
	-1.38	0.09	-1.47	-1.34
Acquirer EBI*Related Business Dummy		-14.2053		82.9481
		-0.61		1.23
Target EBI	-5.8916	-5.6761	13.0815	17.7675
	-0.64	-0.61	1.26	1.56
Hostile	0.8366	0.7675	0.9307	1.1243
	1.19	1.09	1.03	1.16
Stock	0.9279	0.9087	2.9799	3.4027
	1.14	1.11	2.43**	2.60***
Tender	0.1995	0.1163	1.8624	2.2019
	0.23	0.13	1.72*	1.98**
Related Business	-0.7302	-0.3969	0.6503	-0.4418
	-0.88	-0.41	0.60	-0.34
Acquirer Diversification	-0.3292	-0.3094	-0.0763	-0.0778
	-1.82*	-1.70*	-0.37	-0.37
Target Diversification	-0.1475	-0.1671	0.0609	0.0750
	-0.86	-0.96	0.29	0.34
Relative Size	-0.1924	-0.1726	-3.2421	-3.1358
	-0.32	-0.28	-2.21**	-2.16**
Pseduo R^2	0.1483	0.1534	0.3281	0.3558
Observations	60	60	60	60

Table 10

Equity Based Incentives of Target Firm's CEO and Target CARs around Takeover Announcement: Alternative EBI Measures

The sample consists of 656 completed acquisitions during the period January 1, 1994, to December 31, 2003. The dependent variable is the announcement period Target CARs for all models in the table. The event window starts 5 days before the date of the first bid for the target firm and ends on the announcement day of the successful bid. EBI2 is the ratio of the market value of equity portfolio (stocks and options) to the total compensation for the target manager measured one year prior to the announcement year. EBI3 is the ratio of the market value of equity portfolio (stocks and options) to the sum of bonus and cash components of compensation for the target manager measured one year prior to the announcement year. Diversification Dummy is a binary variable, which equals to 1 if Target Diversification is greater than the median value of diversification in the sample, 0 otherwise. Herfindahl Index Dummy is a binary variable, which equals to 1 if the Herfindahl Index of the Target Firm is less than the median value in the sample, 0 otherwise. Firm Specific Risk Dummy 1 is a binary variable, which is equal to one if the variance of residuals from market model regression (for target firms) relative to the median value in the 2-digit industry level is negative, 0 otherwise. Firm Specific Risk Dummy 2 is a binary variable which s equal to 1 if the variance of residuals from market model regression (for target firms) relative to the value-weighted average in the 2-digit industry portfolio is negative, 0 otherwise. Control variables are described in Table 5. All variables are winsorized at 1% level and all specifications have year dummies. The numbers in parentheses are t-statistics. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	0.6523	0.6059	0.6576	0.6595	0.6445	0.5989	0.6549	0.6537
	5.65***	4.87***	5.44***	5.45***	5.58***	4.81***	5.42***	5.40***
EBI2	-0.3339	-0.3855	-0.3925	-0.3200				
	-1.71*	-1.91*	-1.73*	-1.55				
EBI3					-0.1312	-0.2999	-0.1666	-0.1195
					-1.33	-2.01**	-1.65*	-1.24
EBI2*Diversification Dummy	0.8338							
	1.60							
EBI2*HI Dummy		0.3659						
		1.85*						
EBI2*Firm-Specific Risk Dummy1			0.4718					
			1.36					
EBI2*Firm-Specific Risk Dummy2				0.4628				
				1.16				
EBI3*Diversification Dummy					0.1271			
					0.64			
EBI3*HI Dummy						0.3595		
						1.84*		

(Continued)

Table 10 (Continued)
Equity Based Incentives of Target Firm's CEO and Target CARs around Takeover Announcement: Alternative EBI Measures

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
EBI3*Firm-Specific Risk Dummy1							0.2342	
							1.29	
EBI3*Firm-Specific Risk Dummy2								0.0840
								0.41
Governance Index	0.0076	0.0069	0.0068	0.0070	0.0070	0.0065	0.0066	0.0067
	1.75*	1.45	1.51	1.57	1.62	1.38	1.48	1.48
Hostile	0.0163	0.0068	-0.0097	-0.0095	0.0126	0.0052	-0.0106	-0.0098
	0.33	0.14	-0.18	-0.18	0.26	0.10	-0.20	-0.18
Stock	-0.0269	-0.0267	-0.0342	-0.0335	-0.0272	-0.0253	-0.0341	-0.0344
	-1.32	-1.22	-1.62	-1.58	-1.33	-1.16	-1.61	-1.62
Tender	0.1077	0.1043	0.1090	0.1092	0.1080	0.1040	0.1093	0.1094
	4.34***	4.06***	4.20***	4.21***	4.34***	4.05***	4.21***	4.21***
Related Business	-0.0185	-0.0161	-0.0125	-0.0128	-0.0180	-0.0167	-0.0121	-0.0129
	-0.97	-0.80	-0.63	-0.64	-0.94	-0.83	-0.60	-0.64
Competition	0.0445	0.0522	0.0688	0.0689	0.0471	0.0539	0.0690	0.0684
	1.16	1.25	1.72*	1.73*	1.22	1.30	1.73*	1.71*
Acquirer Diversification	0.0038	0.0051	0.0030	0.0031	0.0035	0.0051	0.0027	0.0029
	0.89	1.14	0.69	0.69	0.82	1.14	0.60	0.65
Target Diversification	-0.0047	-0.0058	0.0000	0.0000	-0.0032	-0.0061	0.0002	0.0002
	-0.93	-1.12	0.00	-0.01	-0.65	-1.19	0.04	0.04
Relative Size	-0.4593	-0.4461	-0.5117	-0.5173	-0.4613	-0.4625	-0.5292	-0.5266
	-3.55***	-3.31***	-3.80***	-3.84***	-3.56***	-3.43***	-3.93***	-3.90***
Target Size	-0.0103	-0.0085	-0.0095	-0.0095	-0.0095	-0.0063	-0.0080	-0.0081
	-1.41	-1.08	-1.23	-1.23	-1.28	-0.79	-1.04	-1.05
Adj R^2	0.1584	0.1522	0.1626	0.1619	0.1554	0.1528	0.1625	0.1603
Observations	656	606	609	609	656	606	609	609

Table 11
Equity Based Incentives of Acquirer Firm's CEO and Acquirer CARs around Takeover Announcement: Alternative EBI Measures

The sample consists of 656 completed acquisitions during the period January 1, 1994, to December 31, 2003. The dependent variable is the announcement period Acquirer CARs for all models in the table. The announcement period starts 5 days before the announcement of the first bid of the acquirer and ends on the announcement day of the successful bid. EBI2 is the ratio of the market value of equity portfolio (stocks and options) to the total compensation for the target manager measured one year prior to the announcement year. EBI3 is the ratio of the market value of equity portfolio (stocks and options) to the sum of bonus and cash components of compensation for the target manager measured one year prior to the announcement year. Related Business is a dummy variable, which equals to one if the target and acquirer have the same two-digit SIC code, and 0 otherwise. Control variables are described in Table 7. All variables are winsorized at 1% level and all specifications have year dummies. The numbers in parentheses are t-statistics. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

	Model 1	Model 2	Model 3	Model 4
Intercept	0.2023	0.2015	0.2023	0.2014
	3.19***	3.16***	3.18***	3.16***
EBI2	-0.0002	-0.00005		
	-0.28	-0.06		
EBI3			-0.0001	-0.00003
			-0.27	-0.06
EBI2*Related Business Dummy		-0.0003		
		-0.22		
EBI3*Related Business Dummy				-0.0001
				-0.22
Hostile	0.0308	0.0309	0.0308	0.0309
	1.65*	1.65*	1.65*	1.65*
Stock	-0.0147	-0.0146	-0.0147	-0.0146
	-1.89*	-1.86*	-1.89*	-1.86*
Tender	0.0132	0.0132	0.0132	0.0132
	1.39	1.39	1.39	1.39
Related Business	0.0028	0.0030	0.0028	0.0030
	0.39	0.41	0.39	0.41
Competition	-0.0321	-0.0321	-0.0321	-0.0321
	-2.18**	-2.18**	-2.18**	-2.18**
Acquirer Diversification	0.0000	0.0000	0.0000	0.0000
	0.00	0.00	0.00	0.00
Target Diversification	0.0040	0.0040	0.0040	0.0040
	2.24**	2.23**	2.24**	2.23**
Relative Size	-0.1871	-0.1870	-0.1870	-0.1868
	-4.37***	-4.37***	-4.37***	-4.36***
Acquirer Size	-0.0045	-0.0044	-0.0045	-0.0044
	-1.87*	-1.86*	-1.87*	-1.86*
Adj R^2	0.0589	0.0575	0.0589	0.0575
Observations	656	656	656	656