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CEO EMPLOYMENT CONTRACTS, MANAGERIAL MYOPIA

AND CORPORATE ACQUISITION DECISIONS

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ABSTRACT

This thesis empirically studies the determinants of CEO employment contracts and the impacts of such agreements on managerial investment decisions. As of 2005, approximately half of S&P 500 CEOs had employment contracts. A typical contract protects the CEO by decreasing the probability he will be replaced due to poor performance. In this study, I examine whether the presence of a contract *ex ante* impacts CEO investment decisions. Two competing hypotheses are developed. The incentive effect hypothesis predicts that employment contracts may alleviate managerial concern regarding short-term profits and encourage CEOs to make investments that maximize shareholder value in the long run. Alternatively, the entrenchment effect hypothesis states that contracts may entrench poor-performing CEOs by insulating them from the discipline of the corporate control market and internal governance mechanisms, thereby leading CEOs to pursue private benefits at shareholder expense. An examination of the impact of CEO contracts on acquisition decisions provides support for the incentive effect hypothesis. Specifically, acquirers with CEO contracts pay lower premiums for their targets and experience higher long-run post-acquisition abnormal returns than acquirers without such contracts. Moreover, CEOs with contracts tend to engage in riskier deals. Further, the investigation of the determinants of the use of CEO contracts demonstrates that the probability of a CEO contract is positively related to the magnitude of managerial myopia and the expected costs to shareholders of managerial myopia, consistent with

the incentive effect hypothesis. These findings are robust to a variety of model specifications, different event windows and control variables, industry effect and Heckman (1979) self-selection adjustment. This study stands in contrast to the emerging literature claiming that CEO employment contracts represent rent extraction by powerful managers at shareholder expense.

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Chapter 1

INTRODUCTION

1.1. Introduction

This thesis examines the determinants of the use of CEO employment contracts and the impact of these contracts on managerial behavior within the context of mergers and acquisitions. Specifically, this study attempts to answer two questions. First, do employment contracts encourage CEOs to take value-maximizing investments by mitigating managerial myopia; or do contracts merely allow managers to pursue private benefits at shareholder costs? Second, do employment contracts motive CEOs to take on more or less risk?

Two competing hypotheses are developed based on prior literature. The incentive effect hypothesis predicts that CEO contracts alleviate managerial concerns regarding short-term gains and encourage managers to undertake projects that create maximum shareholder wealth in the long run. I also predict that contracts protect CEOs on the downside and motivate more risk-taking behavior. Alternatively, the entrenchment effect hypothesis states that contracts entrench poor-performing managers by insulating them from the discipline of the corporate control market and internal governance, thus inducing sub-optimal investments at shareholder expense. Moreover, entrenched managers may prefer a quiet and easy life, refusing to take on risk.

The investment studied is mergers and acquisitions. The sample consists of acquisitions made by S&P 500 CEOs categorized by employment contracts during the period 1990-2005. I use a variety of measures to gauge the value created to acquiring shareholders in M&A. These measures include bidder announcement return, acquisition premiums and bidder long-run abnormal stock performance. To study bidder long-run post-event abnormal returns, the size and market-to-book matched portfolio returns and the calendar time portfolio are used following prior literature. Managerial risk-taking preferences are proxied by several measures suggested in prior studies, including ex ante target uncertainty and risk, and changes in bidder post-event stock return variances and in bidder growth options.

First, results on acquirer profitability and risk-taking are compared across the groups of acquirers with and without CEO contracts to shed light on the impact of contracts on managerial incentives and behavior. Second, a linear regression model is estimated for the relation between CEO employment contracts and value creation for acquiring shareholders. In addition, the industry effect suggested in prior M&A literature is analyzed. Finally, I study the determinants of the use of CEO contracts. Given that firms select into using CEO employment contracts to achieve their objective, the Heckman (1979) two-stage sample selection model is estimated.

This chapter provides a brief motivation for the study and establishes a link between CEO contracts and managerial investment decisions. A summary of test results follows, with the implications on the relative impact of the two competing theories on corporate decision-making. Finally, a discussion of the layout of the

chapters is presented. A more in-depth examination of the prior literature on executive employment contracts and M&A is explored in later chapters.

1.2. Motivation

As of 2005, approximately half of S&P 500 Chief Executive Officers (CEOs) worked with the "safety net" of an employment contract. A typical CEO employment contract covers the responsibilities of a CEO, the term of employment, the basic compensation arrangement, the change in control agreement, the severance package, non-competition clauses, and dispute and arbitration clauses. This contract protects a CEO in several ways. First, the existence of a contract makes it more costly and difficult for a CEO to be fired, hence *de facto* enhancing his job security. Second, in cases where CEOs are replaced involuntarily due to underperformance or to a disagreement with the board over corporate strategy, managers with employment contracts have more bargaining power and are usually compensated more generously to leave their posts.[1] Third, CEO employment contracts usually fix the minimum amount of annual salary and state that the salary will be subject to increases but not decreases in the future. In sum, as shown by Schwab and Thomas (2004) and Gillan,

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[1] For example, Carly Fiorina was ousted by the HP board with a severance pay of $21 million under her employment pact. Similarly, Steven Heyer of Coca-Cola left the company with a $24 million severance pay after failing to get the top job. Although the board was unhappy about the size of this payout, they felt obliged to approve it under the terms of Heyer's employment contract (*Corporate Board Member*, September/October 2004). In comparison, Jeffrey Greenberg, former Chairman and CEO of Marsh & McLennan, quit his job in October, 2004 among the bid-rigging scandal with no lucrative severance package due to the lack of an employment contract and hence the weak bargaining power (*The Wall Street Journal*, 10/26/2004, and Marsh & McLennan Proxy Statement, 3/ 31/2005).

Hartzell and Parrino (2006), an employment contract typically protects the interests of the CEO, rather than those of the firm.

Given that employment contracts do protect CEOs, in particular against the downside risk if an investment strategy turns out unsatisfactory *ex post*, does the presence of an employment contract *ex ante* significantly impact CEO investment decisions and hence firm's future performance? If so, through what channels do employment contracts influence a CEO's investment choices? The purpose of this paper is to examine the effects of employment contracts on managerial incentives, risk-taking behavior and corporate investment decisions.

Anecdotal evidence suggests that CEO employment agreements may have substantial influence on the interactions between CEOs and the board concerning investment decisions. John Antioco, the CEO and Chairman of Blockbuster, was ousted in a proxy fight in May 2005 due to a disagreement with the board regarding investment strategies. Two days later, however, he was reappointed to the board as Chairman and retained as CEO. Under his employment contract, Mr. Antioco would have been entitled to $54 million if he left the company after losing his board seat. The dissidents backed the reappointment because they did not want Mr. Antioco to "walk away with $54 million", whereas Mr. Antioco wanted more time to show the desired results of "some bold [business] moves" he undertook.[2] Obviously, Mr. Antioco's employment contract helped secure his job and allowed him more time for the potential profits of his risky strategies to emerge. This suggests the *incentive effect hypothesis*, that is, employment contracts motivate CEOs to undertake projects that

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[2] *The Wall Street Journal*, 5/16/2005, A3.

create shareholder value in the long run, but may reduce current earnings and attract negative responses from investors in the short term. Alternatively, perhaps Mr. Antioco's contract prevented him from being fired when he really should have been, due to his poor running of the business. This possibility suggests the *entrenchment effect hypothesis*, which states that an employment contract may entrench poor-performing CEOs.

The incentive effect hypothesis is motivated by the literature on managerial myopia. Narayanan (1985) and Stein (1988, 1989) predict that the combination of managerial penchant for near term profits and information asymmetry between managers and the market regarding the firms' long-run projects leads to managerial myopia.[3] That is, managers prefer short-term projects to long-term projects and may even forego some positive NPV projects if the gains are not expected until the relatively distant future. This short-term focus may result in suboptimal investment decisions that yield short-run profits but are not in the best interests of shareholders in the long run.[4] CEO employment contracts can potentially mitigate this short-sightedness, as they protect managers against the downside risk should the project generate low profits in the near term. Thus, the incentive effect hypothesis predicts that CEOs with contracts are likely to undertake projects that create more shareholder value than the projects undertaken by CEOs without contracts. In addition, this

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[3] If managers have private information regarding the firms' long-run projects and it is highly costly to convey this private information to the market, managers may forego such projects even though they yield positive NPV.
[4] For example, managers subject to myopia may forego R&D investments in order to boost current earnings. They may also sell off assets that may generate higher NPV in the long run but whose value may be underestimated in the near term.

hypothesis also states that employment contracts provide managers with insurance on the downside, thereby encouraging managerial risk-taking.

The entrenchment effect hypothesis is based on the premise that an employment contract largely insulates a CEO from the discipline of the corporate control market and internal governance mechanisms. As a result, contracts may entrench underperforming CEOs. This entrenchment effect potentially exacerbates the agency problem between managers and shareholders, inducing managers to pursue personal benefits at shareholder cost in suboptimal investments. Thus, the entrenchment effect hypothesis predicts that CEOs with employment contracts are more likely to make investments that create less shareholder value compared to managers without contracts. Moreover, Bertrand and Mullainathan (2003) and Atanassov (2005) suggest that entrenched managers prefer an easy life and are reluctant to take innovative or risky projects. The entrenchment effect hypothesis therefore predicts that CEOs with employment contracts are less likely to undertake risky projects than their counterparts without contracts.

The corporate investment studied in this paper is mergers and acquisitions. Mergers and acquisitions are among the major corporate investments that are observable to outsiders, discretionary, and associated with great uncertainty. They offer an ideal setting in which to explore the relation between CEO employment contracts, managerial incentives, and the efficacy of managerial investment decisions. The incentive effect hypothesis predicts that acquisitions made by CEOs with employment contracts create more shareholder value, and are associated with higher

risk than acquisitions by CEOs without contracts. The entrenchment effect hypothesis predicts exactly the opposite in both value-creation and managerial risk-taking.

1.3. Summary of Empirical Results

Using a sample of 1,083 acquisitions undertaken by S&P 500 CEOs between 1990 and 2005, I find that less than half of acquiring CEOs have employment contracts. Consistent with the incentive effect hypothesis, acquirers with CEO contracts experience significantly higher abnormal returns than bidders without such pacts over the three to five years following the acquisitions. This incentive effect is more significant in mergers than in tender offers. Shleifer and Vishny (1988) and Kisgen, Qian, and Song (2006) suggest that acquiring managers seeking private benefits are more likely to engage in friendly mergers than hostile tender offers. Thus, this finding indicates that CEO contracts are more effective in alleviating the conflict of interests between acquiring managers and shareholders when such a conflict is more severe, *i.e.* in mergers as opposed to tender offers.

Furthermore, acquiring CEOs with contracts pay lower acquisition premiums for their targets compared to CEOs without contracts. The lower premiums paid to target shareholders suggest that more value is created for acquiring shareholders, *ceteris paribus*, supporting the incentive effect hypothesis. Also consistent with the incentive effect hypothesis, CEOs with contracts tend to engage in riskier acquisitions

than managers without agreements. These results are robust across industries, to a variety of specifications and to the inclusion of various control variables. Finally, CEO contracts dominate alternative explanations in accounting for acquirer long-run post-acquisition stock performance.

Further, I investigate the determinants of CEO contracts and find that the use of a CEO contract is positively related to the magnitude of potential managerial myopia and the costs to shareholders of expected myopia. Specifically, a CEO contract is more likely to be observed if the CEO have shorter horizons, the CEO is less capable or successful, the uncertainty on CEO capability is higher, the pressure to deliver short-term gains is higher, the firm has previously performed badly, and the firm is faced with more volatile environment. These findings are consistent with the prediction of the incentive effect hypothesis that contracts are used to mitigate managerial myopia and encourage value-maximizing investment decisions.

Given that firms select to use contracts to maximize shareholder value, I employ the Heckman (1979) two-stage sample selection model to adjust for this self-selection problem. Results are consistent with the incentive effect hypothesis that contracts mitigate myopia and lead to value-maximizing investments. I find no substantial evidence consistent with the entrenchment effect hypothesis, which states that contracts are used to avoid monitoring and discipline on managerial behavior, leading managers to pursue personal interest at shareholder costs.

The evidence in this thesis suggests that although CEO employment contracts in general protect and favor executives rather than the firms, they do not seem to

entrench poor-performing CEOs. Instead, employment contracts are effective in alleviating managerial myopia, aligning executive interests with those of shareholders, and motivating value-maximizing investment decisions. This is in acute contrast to Bebchuk and Friend (2003), who argue that CEO compensation contracts reflect the influence of CEO power over complaisant boards and represent managerial rent extraction at shareholder expense. Furthermore, despite a vast literature on golden parachutes and takeover defenses of *target* firms (*e.g.*, Lambert and Larcker (1985), Lefanowicz, Robinson, and Smith (2000), Agrawal and Knoeber (1998), and Hartzell, Ofek, and Yermack (2004), to name a few), studies are rare exploring the other side of the story: the impact of employment contracts on the behavior of *acquirer* CEOs, which is the objective of this work.

1.4. Organization

The remainder of the thesis proceeds as follows. Chapter 2 gives a brief review of the background on CEO employment contracts and prior literature on executive contracts, and develops the hypotheses. Chapter 3 reviews M&A literature. Chapter 4 describes the data and Chapter 5 discusses the research methodology. Chapter 6 presents the univariate test results while Chapter 7 develops and estimates a multivariate model to simultaneously test the two hypotheses. Chapter 8 examines the

determinants of the use of CEO contracts and provides test results after adjusting for

self-section bias using the Heckman (1979) model. Finally, Chapter 9 concludes.

Chapter 2

EXECUTIVE CONTRACTS LITERATURE REVIEW AND

HYPOTHESIS DEVELOPMENT

2.1. Introduction

The determinants of executive compensation contracts and the effect of these

contracts on managerial incentives and corporate decisions are of great interest and

controversy in the corporate finance literature. One branch of corporate finance theory

asserts that executive employment contracts are designed to line up managerial

incentives with shareholders, reducing managerial myopia and resulting in value-

maximizing decisions. An alternative approach to studying executive contracts view

executive compensation contracts not only as a potential mechanism for addressing the

agency problem between management and shareholders, but also as part of the agency

problem itself. This branch of research recognizes that executive contracts seem to be

the result of managerial power over complacent Board of Directors. That is, contracts

are designed to entrench managers and allow rent-seeking behavior at shareholder

expense.

The purpose of this chapter is to review the literature on executive contracts

and develop the two competing hypotheses based on prior literature: namely, the

incentive effect hypothesis and the entrenchment effect hypothesis. The incentive

effect hypothesis is rooted in myopia literature. It predicts that CEO contracts, by

protecting managers should an adverse event occur, reduce managerial concerns over short-run profits and encourage managers to focus on projects that maximize shareholder wealth but may require a long wait. In contrast, the entrenchment effect hypothesis states that contracts entrench managers by isolating them from the market of corporate control and internal governance. Therefore, contracts facilitate managerial rent-seeking behavior at shareholder cost.

Before discussing in details the theoretical literature on executive contracts, I present a brief overview of the background on executive contracts. A more detailed description on CEO employment agreements will be provided in the data section of Chapter 4.

2.2. Background on Executive Employment Contracts

Upon the departure of an existing CEO, for example due to retirement, death, voluntary resignation or involuntary turnover, the Board of Directors needs to hire a new one. A search committee of the Board will be organized and head the day-to-day search process. Upon the completion of the candidate search and the offer negotiation process, both sides will enter an important contractual relationship, which addresses a number of critical aspects and issues. These include the base salary of the executive, target bonus, long-term equity incentive plans such as restricted stocks and stock options, short-term incentive plans, severance package, change-in-control agreement,

fringe benefits including health insurance, supplemental retirement plan, deferred compensation etc, perks, non-compete and non-solicitation agreement, and the dispute and arbitrary clauses. If both parties choose to put these relationships in writing, an employment contract or its equivalent will be entered. Regulation S-K of the Securities Act of 1933 as amended requires full disclosure in a public company's proxy statements concerning the terms and conditions of CEO contracts. In addition to summarizing the contractual relationship in the proxy statements, public companies may attach an actual copy of these contracts to their 10-K, 10-Q, or 8-K, etc. Interestingly, I find that quite a few firms also report in their proxy statements any oral contractual relationship. Therefore, the contracts that a firm discloses to the public are not limited to those in writing.

A typical employment contract mainly protects the interests of the executive in an adverse situation. For example, the termination terms in a contract which are of particular concern to the executives are often defined generously and leniently towards the executives. Typically, executive terminations initiated by the firms are classified as for-cause or without cause termination; voluntary terminations are categorized as departure with and without good reason. CEOs fired without cause or leave the company with good reason are typically entitled to current annual salary and bonus for several years following the termination. In addition, they are also entitled to early vesting of stock options and restricted stocks. In contrast, executives who leave their firms without good reason or are fired for cause typically lose most of the benefits provided in the contracts. The definition of cause is very narrow in a contract. Rarely

are CEOs fired for cause unless they have been convicted of a felony, or involved with flagrant abuses, etc. Note that poor performance on the job or incompetence is rarely cause for termination. "Good reason" usually refers to demotion, failure of the firm to compensate the CEO according to his agreement, or the reallocation of the CEO. Thus, CEOs with contracts who depart either without cause or with good reason are in general compensated tremendously to leave their posts.

2.3. Executive Contracts and Managerial Myopia

In the absence of contracts, prior literature suggests that managers may behave myopically, that is, make investment decisions that yield short-term profits but are not in the stockholders' best interests in the long run (*e.g.* Narayanan (1985), Stein (1988, 1989), Shleifer and Vishny (1990), Bebchuk and Stole (1993)). This myopic behavior comes from two sources. First, analysts' focus on transient earnings, portfolio managers' desire to show short-term investment gains in order to attract and retain clients, and executive compensation schemes based on short-term (annual) firm performance cause managers to focus on short-term goals. Second, information asymmetry between the manager and the market regarding the prospects of long-run projects makes it more difficult for the manager to credibly convey the expected value of long-run projects to the public.[5]

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[5] See Poterba and Summers (1995) for a survey of CEOs on time horizons and hurdle rates of U.S. firm investments.

Narayanan (1985) finds that when the manager has private information regarding his decision, which is difficult to convey to the shareholders, managers may have incentives to invest in projects that yield short-term profits but are not in the shareholders best interests in the long run. This myopia arises because the manager, by investing in the short term, attempts to enhance his reputation as capable earlier, thereby boosting his wages. Notably, Narayanan (1985) predicts that this perverse incentive is inversely related to the duration of his contract. Therefore, managers with (long-term) employment contracts are motivated to behave less myopically: the longer the CEO expects to stay in his position, the more he benefits from future cash flows, and hence the less his incentive to sacrifice long-term benefits for short-term ones. The incentive for myopic behavior also decreases in the manager's experience. This is because the more experience a manager has, the more precise the shareholders' estimate of his capability, and hence the less incentive for him to demonstrate his ability earlier by taking decisions yielding short-term gains.

In addition, Stein (1988, 1989) develops a theoretic model examining the impact of takeover pressure on managerial myopia. Specifically, he finds that if managers have more information than the market about the prospects of the firm's long-term projects, temporarily low earnings may lead to underpricing of the firm's stock, thus increasing the probability of a takeover at an unfavorable price. Hence managers concerned about losing control or job displacement have incentive to sacrifice long-run projects to boost current earnings. In equilibrium, however, the market is efficient and not fooled. The market conjectures that there will be earnings

inflation and adjusts for it in making inferences. Nevertheless, managers, who take the market's conjectures as fixed, continue to behave myopically even though the market is efficient. Stein (1989) further argues that the magnitude of this myopia is inversely related to the degree to which managers are concerned with retaining control. Thus, Stein (1989) suggests that employment contracts protect managers in the event of a takeover, thereby improving their incentives to undertake long-term positive NPV projects.

Knoeber (1986) suggests that when managerial performance can be evaluated better in the long run, deferred compensation plans may be implemented by shareholders. However, this implicit long-term compensation contract may be endangered by a hostile takeover. Thus golden parachutes can benefit both parties by assuring the manager his delayed compensation. Knoeber (1986) supports this hypothesis by reporting the empirical evidence that the likelihood of the use of a golden parachute is positively related to a firm's capital expenditures to total sales ratio. Therefore, Knoeber (1986) implies that CEO employment contracts, which protect managers in the event of a takeover and involuntary firing, benefit both the CEO and the shareholders by allowing the managers to focus on the long run and worry less about the short term profits.

Almazan and Suarez (2003) show that CEO employment contracts discourage the board from changing CEOs if the costs of terminating a contract exceed the expected benefits from better management. The lower probability of being replaced encourages managers to take value-increasing actions that they might otherwise avoid.

Several recent studies document that CEO employment agreements protect

CEOs against downside risk. Schwab and Thomas (2004) examine the characteristics

of 375 employment contracts of S&P 1500 CEOs and find that the key legal clauses in

the contracts protect the interests of the CEOs rather than the firms, in particular in the

event of a takeover or an involuntary firing. Gillan *et al.* (2006) explore the

determinants of explicit CEO employment contracts and conclude that an executive is

more likely to have an explicit agreement when he needs protection against potential

opportunistic behavior by the firm after the executive takes the job, for example, when

the CEO is younger, is an outsider, has a higher proportion of incentive pay, or works

for a firm with poor recent performance. Rusticus (2006) studies the determinants of

executive severance agreements, which are usually part of a full-scale employment

contract, and the influence of such agreements on CEO turnover. He reports that

uncertainty about the future prospects of the firm increases the likelihood of a

severance agreement, indicating that such an agreement provides insurance to a CEO

in an uncertain or risky environment.[6]

This stream of literature suggests that CEO employment contracts alleviate

managerial myopia and encourage value-maximizing investment decisions. Therefore,

CEOs with employment contracts are more likely to undertake value-maximizing

projects than managers without agreements. This leads to the incentive effect

hypothesis:

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[6] Sletten and Lys (2006) confirm such results in a similar study on the determinants of CEO severance agreements and their effects on risk-taking. Yermack (2006) examines the *ex post actual* separation payments at CEO turnovers and documents mixed results. Some evidence suggests that severance pay generally serves as insurance for the CEO's human capital, while other evidence suggests that severance pay is a form of CEO rent extraction.

H1A. CEOs with employment contracts are more likely to engage in investment projects that create more shareholder value than CEOs without contracts.

Under the incentive effect hypothesis, employment contracts provide a safety net to executives should a risky project fail. In contrast, CEOs without contracts may hesitate when a risky but positive NPV project is present. Indeed, theoretical models by Berkovitch, Israel, and Spiegel (2000), Ju, Leland, and Senbet (2004), Almazan and Suarez (2003), and Inderst and Mueller (2005) suggest that employment agreements provide insurance to CEOs on the downside and induce risk averse managers to take on risk. Hence the incentive effect hypothesis predicts:

H1B. CEOs with employment contracts are more likely to make risky investments than CEOs without these contracts.

Given that contracts are designed to mitigate managerial myopia and encourage superior investment decisions, the incentive effect hypothesis predicts the use of CEO contracts to be positively related to the magnitude of potential managerial myopia and the costs of this myopia. In addition, the incentive effect hypothesis also predicts that CEO contracts are observed whenever the benefits of using contracts exceed the benefits of not using them to shareholders.

H1C. The likelihood of CEO employment contracts are positively related to both the magnitude of myopia and the costs to shareholders associated with myopic behavior.

H1D. CEO contracts are used when the net benefits to shareholders of using contracts are larger than the benefits to shareholders had contracts not been used.

I will test hypotheses *H1C* and *H1D* in Chapter 8 when I examine the determinants of CEO employment contracts and address the potential self-selection bias.

2.4. Executive Contracts and Managerial Entrenchment

While an employment contract may alleviate myopic behavior, it may also entrench a poor-performing CEO by sheltering him from the discipline of the corporate control market and from replacement pressure by the board. For example, most employment contracts include change in control agreements ("Golden Parachutes") and severance arrangements, which provide protection and considerable compensation to a CEO should he depart the firm due to a takeover, leave voluntarily for good reason, or be fired by the firm without cause.

The entrenchment effect of CEO contracts can substantially influence corporate investment decisions. Bertrand and Mullainathan (2003) find that entrenched

managers prefer a quiet life and are reluctant to make investments. More specifically, they document that following the passage of state anti-takeover laws, firms affected by these laws see significant decreases in the rate of new plant creation and old plant destruction. As a result, firm profitability substantially declined. Similarly, Atanassov (2005) shows that following the passage of anti-takeover laws, firms incorporated in the protected states experience a considerable decline in innovations as approximated by the number of patents.

Meulbroek *et al.* (1990) empirically explore whether takeover threats motivate managers to forsake long-run projects and invest in the short term. A comparison of R&D expenditures following the initiation of anti-takeover amendments to prior R&D expenditures provides evidence inconsistent with Stein (1989). Specifically, they find that anti-takeover provisions do not help reduce managerial myopia, but instead lead to declines in R&D expenditures. They thus imply that employment contracts may entrench incumbent management and result in suboptimal corporate decisions.

Since M&A are major corporate investments, the entrenchment effect of CEO employment contracts may especially impact corporate acquisition decisions. Morck, Shleifer, and Vishny (1990), Shleifer and Vishny (1988, 1989), Jensen (1986, 2004, 2005), Harford *et al.* (2006), and Grinstein and Hribar (2003), among others suggest that managers may undertake value-destroying acquisitions to reap personal benefits at the expense of shareholders. Mitchell and Lehn (1990), Lehn and Zhao (2006), and Scholten (2005) show that the market for corporate control and internal governance mechanisms help solve such misalignment between CEO incentives and stockholders.

However, employment contracts protect CEOs from the discipline of both these devices, and hence may aggravate the conflict of interests between shareholders and managers, giving rise to more value-destroying investments. For example, Masulis, Wang, and Xie (2006) report lower announcement period returns for acquirers with more anti-takeover provisions and interpret it as consistent with the notion that entrenched managers tend to make acquisitions that destroy shareholder value. The entrenchment effect hypothesis thus predicts:

> *H2A. CEOs with employment contracts are more likely to undertake investments that on average create less value than CEOs without contracts.*

Prior literature shows that entrenched managers are reluctant to undertake risky projects. Bertrand and Mullainathan (2003) suggest that entrenched managers may simply opt for a quiet life and avoid difficult and costly efforts or risky investments. This is also confirmed in Atanassov (2005), which reports that following the passage of anti-takeover laws, firms experience a decline in innovations. Meulbroek *et al.* (1990) note that firms significantly reduce their investment in R&D following the implementation of anti-takeover provisions. Since both innovations and R&D investments are typically considered risky projects, the entrenchment effect hypothesis thus states:

H2B. CEOs with employment contracts are less likely to make risky investments than CEOs without these contracts.

Under the entrenchment effect hypothesis, CEO contracts reflect the result of self-serving behavior by influential managers seeking to avoid discipline and monitoring imposed on them by the market of corporate control and internal governance mechanisms. Thus, the likelihood of the existence of a CEO contract increases in managerial power over the Board of Directors and in the entrenchment benefits to managers. Moreover, under the entrenchment effect hypothesis, we are more likely to observe a CEO employment contract when the benefits to shareholders (managers) of using contracts are smaller (larger) than the benefits of not using them. Therefore, the entrenchment effect hypothesis also predicts:

H2C. The likelihood of CEO employment contracts are positively related to CEO power relative to the Board and managerial benefits of entrenchment.

H2D. CEO contracts are used when the net benefits to shareholders of using contracts are smaller than the benefits to shareholders had contracts not been used.

I will test hypotheses *H2C* and *H2D* in Chapter 8 when I examine the determinants of CEO employment contracts and address the potential self-selection bias.

The incentive effect and entrenchment effect hypotheses provide opposite predictions regarding value-creation, managerial risk-taking and the likelihood of the use of contracts. The purpose of this study is to unravel which impact dominates and shed light on the efficiency of employment contracts in eliciting value-maximizing decisions.

2.5. Summary

This chapter reviews both the theoretical and empirical literature on executive employment contracts, and develops two competing hypotheses based on prior studies. Specifically, the incentive effect hypothesis is derived from literature on managerial myopia. It predicts that employment contracts alleviate managerial concerns regarding short-term outcomes and encourage CEOs to focus on superior investments that yield maximum shareholder value but require a long wait. Under the incentive effect hypothesis, contracts also motivate managers to take on higher risk by protecting them against downside risk. Further, since contracts are used to mitigate myopia and motivate value-maximizing investments, the likelihood of a contract is positively related to the magnitude of potential managerial myopia and the costs of myopia to shareholders.

Alternatively, the entrenchment effect hypothesis states that contracts merely entrench underperforming CEOs by insulating them from the discipline of the corporate control market and the internal governance mechanisms, thereby leading

CEOs to pursue private benefits at shareholder expense. Entrenched managers with employment contracts prefer a quiet life and resent costly efforts or risk. Given that contracts result from the self-serving behavior of powerful CEOs seeking to entrench themselves at the costs of shareholders, the probability of a CEO contract is positively related to managerial power relative to the Board and to the costs to shareholders of managerial entrenchment.

This thesis aims to unravel which of the two contradicting theories dominates in managerial decision making. In particular, I test the relative impact of the two hypotheses on shareholder value-creation and managerial risk-taking behavior within the context of mergers and acquisitions. Since the investment studied in this thesis is mergers and acquisitions, next chapter provides a brief literature review on M&A.

Chapter 3

LITERATURE REVIEW ON MERGERS AND ACQUISITIONS

3.1. Introduction

The corporate investment examined in this thesis is mergers and acquisitions. M&A are considered major corporate investments often involving with a huge amount of money. Unlike other investment projects such as capital expenditures or research and development, M&A receive tremendous publicity and are directly observable to outsiders. Moreover M&A are associated great uncertainty and risk, are mainly at the discretion of managers, and offer great opportunities for agency problems. If contracts do have impact on corporate investment decisions, we should be able to capture the effect first and foremost in M&A. Therefore, M&A provide an ideal setting in which to investigate the relationship between CEO employment contracts and the efficiency of managerial investments.

I study two dimensions of M&A activity: acquirer profitability and acquirer risk. To gauge value created to acquiring shareholders in mergers and acquisitions, I use a variety measures based on M&A literature. These include acquirer announcement period returns, acquisition premiums paid to their target shareholders, and bidder post-acquisition long-run abnormal returns. To measure the risk associated with acquisitions, I examine two sets of variables. : *ex ante* uncertainty of the

transactions and bidder risk changes following the acquisitions. A detailed review on both the M&A profitability and risk measures follows.

Finally, I make predictions of the two competing theories regarding the empirical measures of acquirer profitability and risk. Specifically, the incentive effect hypothesis predicts that acquisitions made by CEOs with employment contracts create more shareholder value, and are associated with higher risk than acquisitions by CEOs without contracts. The entrenchment effect hypothesis predicts exactly the opposite in both value-creation and managerial risk-taking.

3.2. Acquirer Profitability

Based upon prior literature on M&A, I employ four approaches to measure bidder profitability: acquirer announcement returns, acquisition premiums paid by the acquirer to its target, acquirer long-term abnormal returns and the calendar time portfolio returns. While each of them has its own caveats, a combination of them provides us with rich insights on value created to shareholders.

3.2.1. Acquirer Announcement Period Returns

Acquirer announcement returns examine the abnormal returns to acquirer shareholders in the short period surrounding the announcement of a transaction. The abnormal return is the daily raw return net of benchmark return. Normally, the benchmark is the return predicted by the market model, or the return on a large market index. In this thesis, I use the CRSP value-weighted market index return as the benchmark. Prior literature has suggested this methodology to be the same as the methodology that benchmarks on the market model over a short event window (see, *i.e.*, Brown and Warner (1985), Bruner (2002)).

Empirical results on bidder announcement period returns are mixed. Among the research papers surveyed by Bruner (2002), 20 studies report negative announcement returns for acquirers with 13 out of the 20 being significant (*e.g.*, Morck, Shleifer, and Vishny (1990), Servaes (1991), Healy, Palepu, and Ruback (1992), Kaplan and Weisbach (1992), Mulherin and Boone (2000), and Mitchell and Stafford (2000)). Twenty-four studies report positive returns, out of which 17 report significantly positive returns (see Bradley, Desai, and Kim (1983, 1988), Asquith (1983), Dennis and McConnell (1986), Jarrell and Poulsen (1989), Smith and Kim (1994), Lang, Stulz, and Walking (1989), Schwert (1996), Eckbo and Thorburn (2000), *etc.*). In the aggregate, the evidence suggests that announcement returns to buyer shareholders in M&A are essentially zero.

Prior studies have identified several factors that affect bidder announcement returns. I will test the implications of these studies on bidder announcement CAR in Chapter 8 after adjusting for sample selection bias.

Moeller, Schlingemann, and Stulz (2004) and Masulis *et al.* (2006) document a negative relation between acquirer size and acquirer announcement returns. Moeller et al. (2004) interpret this evidence as consistent with the managerial hubris hypothesis of Roll (1986) since they also find that larger bidders tend to pay larger premiums and engage in transactions with negative dollar synergies. Alternatively, Masulis *et al.* (2006) conjecture that managers in larger firms are more entrenched, since it is more difficult to acquire a larger target and firm size thus serves as a takeover defense. This managerial entrenchment therefore leads to value-reducing acquisitions. Hence I expect a negative relation between bidder size and announcement return.

Results on Tobin's q are mixed. While Lange *et al.* (1989, 1991) and Servaes (1991) find a positive relation between bidder q ratio and bidder announcement CAR, Moeller *et al.* (2004) report a negative relation. In addition, Rau and Vermaelen (1998) find that "value" buyers (high book-to-market or low q) outperform "glamour" acquirers (low book-to-market or high q) over the three years following the transactions. They interpret this finding as evidence that both the market and the management overextrapolate the bidder's past performance as proximated by a high q ratio when they assess the desirability of an acquisition. That is, managers who previously perform better are more subject to hubris and subsequently make bad acquisition decisions. They also argue that this performance extrapolation hypothesis

is consistent with the fact that in the short run, stock prices of glamour bidders increase much more than stock prices of value bidders around the announcement of the acquisition, as confirmed in Lang *et al.* (1989, 1991) and Servaes (1991).

Another line of research suggests acquisitions use excess cash to destroy value (see Lang, Stulz, and Walkling (1991), Harford (1999)). This is consistent with the free cash flow hypothesis of Jensen (1986), which states that managers in firms with more free cash have more resources at their discretion to pursue size-maximization and empire-building. However, Masulis *et al.* (2006) report positive relation between free cash low and bidder announcement CAR. They interpret their results as consistent with the notion that higher free cash flow is a proxy for better *ex post* firm performance and more capable managers. These capable managers are more likely to engage in better acquisitions. Bruner (1988) documents that pairing of cash-rich and cash-poor firms actually creates value.

Means of payment in M&A also influence the returns of acquirers. Asquith, Bruner and Mullins (1987), Huang and Walkling (1987), and Travlos (1987), among others find that stock deals are associated with significantly negative announcement returns, while cash deals are zero or slightly positive. This finding is consistent with the view that managers tend to pay with stocks when they believe their firms' shares are overvalued.

Several studies report larger announcement returns to bidders in tender offers than in mergers (see Jensen and Ruback (1983), Gregory (1997), Loughran and Vijh (1997), Rau and Vermaelen (1998), Lang et al. (1989), and Jarrell and Poulsen

(1989)). Alternatively, Healey, Palepu and Ruback (1997) document insignificant improvement in cash flow returns for hostile deals, possibly due to the payment of higher acquisition premiums in these deals.

Datta *et al.* (2001) report a positive relation between acquiring managers' stock-options based compensation and bidder announcement CAR. This finding supports the executive stock options help align managerial incentives with shareholder interests and motivate good acquisitions.

Corporate governance and anti-takeover mechanisms have significant impact on bidder announcement returns. Masulis *et al.* (2006) find a negative relation between the anti-takeover provisions and acquirer announcement CAR. They conclude that anti-takeover defense may entrench mangers and lead to value-destroying investment decisions.

Finally, Fuller, Netter, and Stegemoller (2002) and Moeller *et al.* (2004) point out that acquiring a public target is associated with a negative acquire abnormal returns, while purchasing a private and subsidiary target experiences a positive bidder returns. Further, subsidiary target generate the highest acquirer returns among the three types of targets.

I control for the impact of all the above factors when exploring the relation between CEO contracts and acquirer announcement CAR in Chapter 8.

3.2.2. Acquisition Premiums

Following Datta *et al.* (2004), Moeller *et al.* (2004) and Kisgen, Qian, and Song (2006), acquisition premium is defined as the percentage difference between the highest price paid by acquirers to target shareholders and the target share price prior to the transaction. It is another proxy for bidder profitability. Given that it actually measures how much more an acquirer pays the target shareholders relative to the target share price, acquisition premium is negatively related to bidder profitability.

Grossman and Hart (1980) suggest that bidders pay the value that fully reflects the expected increase in profitability under new management, surrendering all potential gains to target shareholders. In their model, the target shareholders will not tender their shares unless paid a price fully reflecting the expected increase in profitability. If this is true, no acquisitions will occur since acquirers cannot gain from the deals. However, if the future prosperity of the target under new management is valued at a lower price to target shareholders than to the acquirer, the acquisition is profitable for the bidder and will take place. Therefore, acquisition premiums actually measure the expected increase in future profitability from the *target* shareholders' point of view.

Roll (1986) notes that managers affected by hubris tend to overestimate the target, and hence pay higher premiums to their targets. Moeller *et al.* (2004) report that larger acquirers on average pay higher premiums and undertake acquisitions associate with negative synergies. They interpret their results as consistent with the hubris

hypothesis of Roll (1986) that managers of larger firms are more likely subject to

hubris and hence overpay their target value, making value-destroying acquisitions.

On the other hand, Shleifer and Vishny (1988) and Jensen (1986) argue that

rent-seeking managers make value-destroying acquisitions by overpaying for their

targets to extract personal benefits at the expense of acquiring shareholders.[7]

Empirically, Datta *et al.* (2001) observe that managers with low options-based

compensation pay higher acquisition premiums than managers with high options-

based compensation, whose incentives are more closely aligned with those of

shareholders. They also find that managers with larger options compensation tend to

engage in acquisitions with higher bidder returns. Thus, they perceive their results as

evidence supporting the hypothesis that acquiring managers more aligned in their

interests with acquiring shareholders make value-maximizing acquisitions and hence

pay lower premiums. Evidently, premiums are negatively related to acquirer

profitability.

Means of payment may influence the risk of overpayment and hence

acquisition premiums. Hansen (1987) argues that the risk of overpayment is more

significant in cash deals than in stock bids. This is because cash payment is fixed,

while stock payment is contingent upon the future performance of the firm. With cash

payment, target shareholders do not have a stake in the future prosperity of the new

firm, while with stock payment the target shareholders' wealth is dependent on the

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[7] Shleifer and Vishny (1988) suggest that acquiring CEOs motivated by objectives other than value-maximization of stockholder wealth also pay for benefits to themselves that are of no value to their shareholders. For example, they may pay for augmenting the size of the firm and the opportunity to diversity and entrench himself.

future performance of the new company. It is hence more likely for target shareholders to demand higher premiums with cash payment than with stock payment; thereby increasing the probability of overpayment in cash bids. Therefore, I also analyze premiums categorized by means of payment.

3.2.3. Acquirer Long-Run Abnormal Returns

While traditional wisdom suggests that the announcement period stock price response fully impounds the information effects of mergers, it requires strong assumptions about the functioning of stock markets. That is, the stock market is efficient, rational, and without information asymmetry and restrictions on arbitrage. However, the myopia literature suggests that there exists substantial information asymmetry between the public and management regarding the future prospect of the firm, with this asymmetry being especially severe for long-run projects. And this information asymmetry causes managerial myopia in the first place. Therefore, results based only on bidder announcement returns may not provide accurate implications on the relation between CEO contracts and bidder value creation. Further, several recent long-term event studies measuring (negative) abnormal returns over the three to five years following merger completion cast doubt on the interpretation of traditional short-window event study findings (see Andrade, Mitchell, and Stafford (2001) and Bruner (2002) for a summary of these studies). According to these studies, investors

systematically fail to evaluate the full effect of M&A announcements. They suggest

that inferences based on announcement returns are flawed, particularly for those

attempting to measure the wealth effect of the event. I thus also resort to long-run

event study to analyze the impact of contracts on acquirer profitability. Acquirer post-

acquisition abnormal returns are constructed with the benchmark being a matched size

and book-to-market reference portfolio returns. Both buy-and-hold returns and the

cumulative abnormal returns are calculated. Calendar time portfolio returns and four-

factor regression model are also employed to adjust for cross-correlation among

observations. Detailed descriptions of these methodologies are provided in Chapter 5.

On aggregate, prior literature show that bidders experience negative or break-

even post-acquisition abnormal returns, unlike the target shareholders who normally

earn positive abnormal returns. For example, Bruner (2002) surveys 11 studies on

bidder post-event abnormal returns, out of which, eight report negative and significant

returns (*e.g.*, Malatesta (1983), Asquith (1983), Bradley, Desai, and Kim (1983),

Agrawal, Jaffe, and Mandelker (1992), Loughran and Vijh (1997), and Rau and

Vermaelen (1998), to name a few). More specifically, Mitchell and Stafford (2000)

report that during their sample period from July 1961 to December 1993, the acquirers

on average earn a three-year equally-weighted portfolio return of -0.14% per month

and -5% over three years. This figure is statistically significant, meaning that acquirers

experience considerable value reduction following the acquisitions over the long run.

However, the abnormal return for the value-weighed calendar portfolios of acquirers is

not significant at -0.04% per month (-1.4% over three years). They conclude that since

the abnormal returns are only significant when the event firms are equally-weighted in the portfolio, it seems that small acquirers drive this under-performance in the post-acquisition period. This finding is consistent with those on equity issuers in Brav and Gompers (1997).

Further, a recent study of Vijh and Yang (2006) document that during 1980-2004, S&P 500 acquirers experience significant gains in post-acquisition performance. This is in stark contrast to prior findings that acquirers underperform their peers following acquisitions. Vijh and Yang (2006) interpret their finding as consistent with the efficiency hypothesis suggesting that S&P 500 firms are more efficiently run and hence undertake better acquisitions.

A number of studies have shown that in the cross section, a variety of factors determine bidder post-event stock performance. I include them as controls in my analysis. These controls are essentially similar to those in the analysis of bidder announcement returns.

Firm size is negatively related to bidder long-run abnormal returns, due to size being a proxy for either managerial hubris (Moeller, Schlingemann, and Stulz (2004)) or managerial entrenchment (Masulis *et al.* (2006)).

Tobin's q is negatively related to acquiring firm long-run abnormal returns. Fama and French (1992, 1993) argue that the relatively high returns of value firms (high book-to-market or low q) than "glamour" or "growth firms (low book-to-market or high q) are due to increased risk, perhaps related to distress. Rau and Vermaelen (1998) find that "value" bidders have a three-year post-acquisition abnormal return of

7.6% while "glamour" acquirers experience a three-year abnormal return of -17.3% over the period 1980-1991. They interpret this findings as evidence as consistent with Lakonishok, Shleifer, and Vishny (1994), who conjecture that the differential returns of value and growth stocks are not related to risk, but instead arise because investors mistakenly estimate future performance by extrapolation from past performance. Therefore, Rau and Vermaelen (1998) suggest that managers who previously performed better are more subject to hubris and subsequently make bad acquisition decisions.

Lang, Stulz, and Walkling (1991) and Harford (1999) suggest a negative relation between excess cash and acquirer long-run returns, supporting the free cash flow hypothesis of Jensen (1986) that acquisitions made by managers in firms with more excess cash may be driven by empire-building. On the other hand, Bruner (1988) finds that pairing of slack-rich and slack-poor firms actually creates value.

Loughran and Vijh (1997) document that acquiring firms using stock financing have abnormal returns of -24.2% over the five-year period following the transaction, while this abnormal return is 18.5% for acquisitions financed purely with cash. Thus I expect a positive (negative) relation between cash deals (stock deals) and acquirer long-term abnormal returns.

Tender offers are documented to create value for bidders while mergers destroy value (see Jensen and Ruback (1983), Gregory (1997), Loughran and Vijh (1997), Rau and Vermaelen (1998), Lang *et al*. (1989), and Jarrell and Poulsen (1989)). Mergers are typically friendly corporate actions, negotiated between the top

management of bidder and target firms. In comparison, tender offers are structured as take-it-or-leave-it proposals, directly to the target shareholders bypassing target top management. Prior literature suggests that unwanted buyers may have discovered special value-creating insights about the target firm. By making an unsolicited bid, the buyer seeks to retain value for itself, rather than compromise it in a negotiation (Bruner (2002)). Alternatively, Healey, Palepu and Ruback (1997) document insignificant improvement in cash flow returns for hostile deals, possibly due to the payment of higher acquisition premiums in these deals.

Datta *et al.* (2001) report a positive relation between acquiring managers' stock-options based compensation and bidder three-year abnormal returns after the deals. Agrawal and Mandelker (1987) find a negative relation between insider equity ownership and managerial tendency to conduct variance-decreasing acquisitions. These studies suggest that management having an equity stake in a firm helps align managerial incentives with shareholder interests and leads to value-maximizing acquisitions.

Corporate governance and anti-takeover mechanisms are negatively associated with acquirer announcement period CAR, indicating that anti-takeover defense may entrench mangers and lead to value-destroying deals (Masulis *et al.* (2006)). Although no study so far has focused on anti-takeover provisions and acquirer long-term abnormal returns, I include them in my analysis as a control for managerial entrenchment.

Finally, prior research suggests that acquiring a public target destroys value for bidder shareholders, while purchasing a private and subsidiary target create wealth for acquirer shareholders. Further, subsidiary target generate the highest acquirer returns among the three types of targets.

3.2.4. Predictions of Incentive vs. Entrenchment Hypotheses

Under the incentive effect hypothesis, contracts alleviate managerial myopia and result in investments maximizing shareholder wealth in the long run. Since the investment studied in this thesis is mergers and acquisitions, hypothesis H1A is equivalent to:

> *H1A. Acquisitions made by CEOs with employment contracts on average create more shareholder value than those by CEOs without contracts.*

Alternatively, the entrenchment effect premise states that contracts entrench managers and lead to suboptimal investment decisions. More specifically, H2A is equivalent to the following:

> *H2A. Acquisitions made by CEOs with employment contracts on average create less shareholder value than those by CEOs without contracts.*

3.3. Acquirer Risk-Taking

Prior literature suggests that employment contracts provide a safety net to executives against downside risk, and encourage risk averse managers to take on more risk-enhancing projects (see Berkovitch, Israel, and Spiegel (2000), Ju, Leland, and Senbet (2002), Almazan and Suarez (2003), and Inderst and Mueller (2005)). On the other hand, Bertrand and Mullainathan (2003), Atanassov (2005), and Meulbroek *et al.* (1990) implies that contracts may entrench managers, and this entrenchment leads managers to live a quiet and easy life and reduce risky investments. Since the investment project studied here is mergers and acquisitions, this section provides a summary of literature on acquisition risk. On the aggregate, prior literature suggests the riskness of an acquisition to include the *ex ante* uncertainty of the deals and the changes in acquirer risk following the acquisitions.

3.3.1. Target Risk

The first set of acquisition risk measures is associated with the uncertainty and risk of the targets. These include the deal value relative to acquirer's market capitalization and whether the acquirer and the target share the same industry. The larger the relative deal size, the more energy and resources required of the bidder to

integrate the target into its own operations and realize the potential synergies. Acquisitions of targets from a different industry may be more likely associated with higher information asymmetry and uncertainty, owing largely to the possibility that acquiring managers may have less industry-specific knowledge of the targets.

However, prior literature shows that size and diversification may be positively related to size-maximization and acquiring managers' empire-building actions. In particular, Macquieria *et al.* (1998) report that diversifying or unrelated mergers on average lead to worse performance compared to related mergers. Delong (2001) find that mergers that focus in both lines of business and geographical locations lead to better bidder returns than other types of mergers.

Therefore, I also include the growth options of target firms as measures of target uncertainty following prior studies. These include target R&D expenditures to fixed assets (PP&E) and Tobin's q (Datta *et al.* (2001) and Coles, Daniel and Naveen (2006)). Relative deal size, the ratio of target R&D expenditure to PP&E, target Tobin's q, and diversification in industries are positively associated with acquisition risk.

3.3.2. Acquirer Post-Event Risk Changes

Agrawal and Mandelker (1987) document that acquiring managers with lower equity stakes in their own firms tend to undertake less risky acquisitions. They

measure the riskiness of bidder firms as the changes in stock return variances

following the acquisitions. Using a similar methodology, Datta *et al.* (2001) note that

bidders that grant their top management team greater options incentive compensation

in the previous fiscal year have a higher propensity for value-increasing acquisitions.

Thus, following Agrawal and Mandelker (1987) and Datta *et al*. (2001), I measure

acquirer post-acquisition risk changes as the change in the standard deviation of

acquirer stock returns pre- versus post-acquisitions. The standard deviation of bidder

stock returns is computed during two time periods: the post-acquisition period is from

11 to 70 days following the effective date and the pre-acquisition period is from 120 to

61 days prior to the announcement. The change in the standard deviation is then the

post-acquisition period standard deviation minus the pre-acquisition period standard

deviation.

In addition, I also gauge acquirer post-event risk changes as the differences in

acquirer growth options proxied by acquirer q ratio, capital expenditure-to-assets and

capital expenditures-to-PP&E ratio. The changes are defined as the ratio measured at

the fiscal year end two years after the effective date minus that measured at the fiscal

year end prior to the announcement.

3.3.3. Predictions of Incentive vs. Entrenchment Hypotheses

Under the incentive effect hypothesis, contracts protect managers should a risky project fail, thereby encouraging riskier investments. Thus, within the context of M&A, hypothesis H1B is equivalent to the following:

> *H1B. Acquisitions made by CEOs with employment contracts include higher risk than those by CEOs without these contracts.*

Alternatively, the entrenchment effect hypothesis predicts a negative relation between the use of CEO contracts and managerial risk-taking preference, owing largely to the penchant of entrenched managers for an easy and quiet life style. Therefore, when M&A are considered, hypothesis H2B is:

> *H2B. Acquisitions made by CEOs with employment contracts contain lower risk than those by CEOs without these contracts.*

3.4. Summary

This chapter provides a review on M&A literature. In particular, I discuss prior studies examining value creation for acquiring shareholders, including acquisition

announcement returns to bidders, acquisition premiums paid to target shareholders, and acquirer long-run post-event abnormal returns. The traditional wisdom has it that on aggregate, bidder announcement return is negative or zero. Over the three to five years following the acquisitions, bidders experience negative abnormal stock returns. However, this underperformance is driven mainly by smaller bidders. A variety of factors have determined bidder profitability. I thus include them as controls in my study.

Acquisition risk is also measured following prior literature and categorized into two sets of proxies: the uncertainty and risk associated with the target and the changes in acquirer post-event stock return variances.

The following chapters present empirical analysis of bidder profitability and risk-taking measures in M&A, and provide insights on the relative importance of the incentive versus the entrenchment effect of CEO contracts.

Chapter 4

SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

4.1. Introduction

In this section, I describe the sample selection process and the data sources. First, I detail the procedure of forming the CEO employment contracts sample. Second, I discuss the mergers and acquisitions sample. Finally, summary statistics of both the full sample of CEO contracts and the M&A sample are examined. More specifically, these descriptive statistics are compared across groups with and without CEO contracts.

4.2. Sample Selection and Data Sources

4.2.1. CEO Employment Contracts

This study focuses on S&P 500 companies. For each firm, I collect information on CEO employment contracts for each year between 1990 and 2005 from the Edgar and LexisNexis online SEC filings databases. Regulation S-K of the Securities Act of 1933 requires full disclosure in a public company's proxy statements concerning the

terms and conditions of CEO contracts.[8] Given this regulation, I assume that all firms

disclose CEO employment agreements currently in force in the proxy. Whenever the

proxy statement indicates the existence of an explicit agreement, which may be in the

form of an employment letter, a summary sheet of terms and arrangements, or a

formal employment contract, I search for the actual copy of such an agreement in the

Corporate Library CEO contract database or the SEC filings online database,

including the proxy statement, 10-K, 10-Q, 8-K, etc.

    A typical CEO employment contract governs a variety of relationships. These

include the title and responsibilities of a CEO, e.g., whether the CEO also serves as the

Chairman of Board of directors or the president of the firm; the term of his

employment; the basic compensation arrangement, such as annual base salary, target

bonus, equity participation in the company including stock options, restricted stock,

any long-term incentive plans; fringe benefits including supplemental executive

retirement plans, deferred compensation, etc.; perquisites, such as a personal jets,

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[8] Standard Instructions for Filing Forms under the Securities Act of 1933, Securities Exchange Act of 1934 and Energy Policy and Conservation Act of 1975, Regulation S-K, Item 402 -- Executive Compensation:

  g. Employment contracts and termination of employment and change-in-control arrangements. Describe the terms and conditions of each of the following contracts or arrangements:

    1. Any employment contract between the registrant and a named executive officer; and

    2. Any compensatory plan or arrangement, including payments to be received from the registrant, with respect to a named executive officer, if such plan or arrangement results or will result from the resignation, retirement or any other termination of such executive officer's employment with the registrant and its subsidiaries or from a change-in-control of the registrant or a change in the named executive officer's responsibilities following a change-in-control and the amount involved, including all periodic payments or installments, exceeds $100,000.

automobiles, country club memberships paid by the company; the change-in-control agreement ("Golden Parachutes") that determines what a CEO is entitled to in the event of a takeover; the severance agreement which rules in the event of a CEO turnover; non-competition clauses, and dispute and arbitration clauses.

Following Gillan *et al.* (2006), I define an (explicit) employment contract as one covering the general contracting relationship between a firm and its CEO, and exclude from the contract sample any agreement covering a specific relationship only. More specifically, a CEO is defined to have a contract if this contract covers at least annual compensation, change-in-control arrangement, and severance package.[9] For example, some firms don't have CEO employment contracts in general but have implemented golden parachutes for all executives triggered only by a change in control; I classify such firms as ones without CEO contracts. Often I find that an executive may not have an official "employment contract" but does have a separate compensation agreement, a severance agreement and a change-in-control agreement. As long as the CEO has all three arrangements, I also classify him as one with contract.

I define a contract to be one that covers at least base compensation, change-in-control and severance arrangements because these three packages provide the most important protection to an executive in an adverse situation. First, CEO compensation contracts usually fix the minimum amount of annual salary and state that the salary will be subject to increases but not decreases in the future. Second, change-in-control

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[9] Alternative definitions of contracts are used, and the results are qualitatively similar when using these definitions.

agreements and severance arrangements provide protection and compensation to a CEO should he depart the firm due to a takeover, leave voluntarily for good reason, or be fired by the firm without cause. CEOs who are fired without cause or leave with good reason are typically entitled to multiples of current salary and bonus as well as early vesting of stock options and restricted stocks. This is in stark contrast to what happens when executives leave their firms without good reason or are fired for cause, where they forfeit most of the benefits provided in the contracts. CEO employment contracts are usually very generous and lenient to executives in defining "cause" and "good reason". Willful misconduct, moral turpitude and failure to perform duties are the most common justified "causes" for firing a CEO.[10] Poor performance on the job or incompetence is rarely "just cause" for termination. According to Schwab and Thomas (2004), only 3.47% of the S&P 1500 CEO contracts they study specifically list incompetence as a cause for termination. "Good reason" usually refers to demotion, failure of the firm to compensate the CEO according to his agreement, or the reallocation of the CEO. CEOs with contracts who depart either without cause or with good reason are in general compensated tremendously to leave their posts.

CEO characteristics are hand collected from the proxy statements over the entire sample period. These variables include CEO age, CEO tenure, whether the CEO is an outside hire, whether the CEO is a founder of the company or coming from a founding family, whether the CEO is also a Chairman of the board of directors.

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[10] Schwab and Thomas (2004) report that actions most often defined in CEO employment contracts as "just cause" for termination are moral turpitude (72%), willful misconduct (69%), and failure to perform duties (58%).

4.2.2. Mergers and Acquisitions

Mergers and acquisitions made by S&P 500 firms between January 1, 1990 and December 31, 2005 are identified from the Securities Data Corporation (SDC) database. I include deals that meet the following criteria:[11] (1) completed deals with an announcement date and effective date within the sample period of 1990 to 2005, (2) the value of the transaction exceeds $1 million, (3) the value of the transaction is at least 5% of the acquirer market capitalization measured 45 days prior to the announcement,[12] and (4) the deal is either identified as a merger or tender offer by SDC. The sample is limited to large transactions because they are significant corporate investments which are more likely influenced by managerial agency problems.[13] For each acquisition, I record whether the CEO in position has an employment contract when the deal is announced and effective. These criteria result in a final sample of 1,083 acquisitions made by 511 different CEOs in 375 companies. Of the 511 CEOs, 214 (42%) have contracts and the remainder work without agreements. Of the 1,083

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[11] These are common sample selection criteria used in the M&A literature, see, *e.g.*, Masulis *et al.* (2006).

[12] Schwert (1996) shows that the equity market responds to the acquisition information leakage as early as 42 days preceding the announcement. Results using other cutoffs such as 1%, 2% and 10% are qualitatively similar.

[13] Prior literature suggests that managers seeking private benefits are more likely to engage in large deals. For instance, Murphy (1999) documents a positive relation between firm size and executive compensation level, which provides CEOs an incentive to increase firm size, not firm values through acquisitions. Jensen (1986) argues that managers realize large private benefits from empire building. Grinstein and Hribar (2003) document about 40% of the acquirers in the S&P1500 state that they compensate CEOs with cash bonuses for just completing deals. While such bonuses are positively associated with deal size, they are not at all related to deal performance. They hence concludet that more powerful or entrenched CEOs tend to engage in larger deals and get larger bonuses.

deals, 512 (47%) are made by CEOs with employment agreements and 571 (53%) by CEOs without pacts.

Financial statement information is collected from Compustat, and stock market information is obtained from CRSP. Institutional ownership data are obtained from CDA/Spectrum during 1990-2005.[14] SEC has required institutions with more than $100 million of securities under discretionary management to report all common stock ownership larger than 10,000 shares or $200,000 on a quarterly basis ever since 1978. These data are reported in the form of 13F institutional ownership. For each sample firm I obtain the total number of shares owned by all institutions at the quarter end prior to the event date. Institutional ownership is defined as the total number of shares owned by institutions divided by total shares outstanding at the quarter end.

Executive compensation and insider ownership of the top five executives including the CEO are obtained from the Standard and Poor's ExecuComp database. ExecuComp lists top executive compensation during 1992 to 2004 for each firm in the S&P 500, S&P MidCap 400, and S&P SmallCap 600.

The corporate governance index (G-index) is defined as in Gompers, Ishii, and Metrick (2003).[15] It is an anti-takeover provisions index constructed by Investor Responsibility Research Center (IRRC) The IRRC anti-takeover provisions data covers large companies from the S&P 500 as well as Fortune, Forbes and Business Week's lists of the largest corporations for seven years: 1990, 1993, 1995, 1998, 2000, 2002, and 2004. The index consists of twenty-four anti-takeover measures including

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[14] I thank Laura Field for generously sharing this data with me.
[15] I thank Andrew Metrick for providing me with the data on the G-index.

business combination state law, staggered board, blank check, and poison pill, etc[16]

For each company covered, the index is the total number of the anti-takeover measures

out of the 24 provisions established by the firm. Hence, the larger the index, the more

anti-takeover provisions a firm has. Following Gompers, Ishii, and Metrick (2003), I

assume that for years between any two consecutive publication dates, firms have the

same governance index as in the previous year.

4.3. Descriptive Statistics

4.3.1. Summary of Sample Firms

Figure 4.1 describes the time-series dynamics of the S&P 500 CEO contracts

sample and the M&A sample. Panel A plots the annual percentage of S&P 500 CEOs

who have an employment agreement over the period 1990-2005. Over time, the

percentage of these CEOs with employment contracts has steadily increased. For

example, half of the S&P 500 CEOs have contracts in 2005, compared to only 29% in

1990.[17] Panel B shows the number of acquisitions made by the sample firms. The

contract group refers to acquisitions made by CEOs with employment agreements in

effect as of the announcement date, and the no-contract group to deals by CEOs

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[16] Please see Gompers, Ishii, and Metrick (2003) for details of the construction methodology.
[17] Slightly less than half of S&P 500 CEOs have an explicit employment contract as of 2004, which conforms to the results of Schwab and Thomas (2004) and Gillan *et al.* (2006).

without these contracts.[18] The number of annual deals increases from 1990 through 2000. After the burst of the internet bubble, the number of acquisitions drops considerably in 2002, after which, the market for M&A rises slightly. This pattern is consistent with Moeller, Schlingemann, and Stulz (2005) and Masulis *et al.* (2006). Panel C demonstrates that the annual ratio of acquisitions completed by CEOs with employment contracts has increased over the sample period, from 31% in 1990 to 60% in 2004. This is driven, at least partly, by the increase in the proportion of CEOs with contracts, as shown in Panel A.

4.3.2. S&P 500 CEO Contracts

Table 4.1 provides summary statistics of all S&P 500 CEOs during 1990-2005 categorized by employment contracts. There are a total of 1,381 CEOs in office in the S&P 500 firms during 1990-2005. Therefore, on average each firm has approximately 2.76 CEO turnovers over the 16 years. Some CEOs may have previously left their post and become CEOs later again. So these CEOs may appear more than once in the sample. Panel A examines CEO and governance characteristics, while Panel B studies accounting attributes of sample firms. The event date is the date when the executive is appointed CEO. If the executive enters into a contract *after* becoming CEO, the event date is the contract date. All CEO characteristics are measured as of the event date. Institutional ownership is computed at the quarter end preceding the event date. All

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[18] Results based on effective date, and announcement dates are qualitatively similar.

accounting variables are measured at the fiscal year end prior to the event date and are Winsorized at the upper and lower 1% levels (*i.e.*, for any observation with a value outside the 1% and 99% range, the value at the 1% or 99% is assigned). Appendix provides definitions of these variables.

Panel A shows that an average (median) S&P 500 CEO in the full sample is approximately 51 (52) years old when becoming a CEO. An average (median) CEO with employment contracts is about 52.1 (52) years old on the event date. These executives are significantly older compared to their peers without contracts who are 50.5 (52) years old at the mean (median) when becoming a CEO. Approximately 4% of the S&P 500 CEOs are older than 65 when taking their posts as CEOs. Clearly, CEOs with contracts are on average more likely to be aged 65 and above than executives without these contracts. Older CEOs have shorter horizons and will benefit or suffer from their present behavior over shorter period of time than younger CEOs. Thus older CEOs may be less concerned about their future performance and reputation in the labor market. Therefore they have more incentive to behave myopically. In so doing, they may attempt to obtain all the benefits today but bear little costs in the future when they have retired. The fact that CEOs with contracts are on average older suggest firms use contracts more often when managers are more likely to behave myopically. This is consistent with the incentive effect hypothesis that contracts are used to mitigate myopia.

An average (median) CEO in the full sample has spent 13 (10) years with his company before becoming the CEO. CEOs in the contract group have worked for his

firm for 9.7 years on average and for 6 years at the median when appointed the posts.

Thus CEOs with contracts have substantially shorter tenures compared to their

counterparts without contracts who have joined the company for 15.8 (15) years on

average (at the median) when becoming CEOs. Moreover, CEOs with contracts are

more likely to be an outside hire than executives without contracts. An executive is an

outside CEO if he has joined the firm for less than three years when appointed CEO.

On average, 40.2% of the CEOs in the contract group are hired from outside the firm ,

compared to only 13% for the non-contract CEO sample. The difference in the ratio of

as high as 27% is highly significant. The shorter the CEO's tenure within a firm, the

greater the uncertainty about his ability, and the larger the estimation error of his

capability. This uncertainty increases the likelihood of potential managerial myopia. A

new CEO with a shorter tenure has higher incentive to sacrifice long-run positive NPV

project in order to boost current earnings and establish his reputation as capable

(Narayanan (1985)). On the other hand, executives who have been with the firm for a

long time have already demonstrated their ability and the board has had several years

to observe their performance. These mangers have little incentive to underinvest in

long-term projects just to prove they are competent. The summary statistics regarding

tenure and outside hiring suggest that firms tend to use contracts when the uncertainty

about CEO abilities is high and hence the likelihood of potential managerial myopia is

high. This is consistent with the incentive effect hypothesis that contracts are used to

reduce myopic behavior.

Among all the CEOs in the sample, 14% of them are either founder CEOs or coming from a founding family. Approximately 10.7% of the CEOs in the contract group are founders or coming from a founding family. This percentage is significantly lower than that for the CEOs without contracts, which is 16.7%. Therefore, CEOs with contracts are less likely to be a founder or come from a founding family. This is inconsistent with the entrenchment effect hypothesis that contracts are used by influential CEOs to entrench themselves. There appears no significant difference across the two groups regarding whether the CEO is also the Chairman of Board of Directors.

Approximately 58.6% (60.5%) of the shares in an average (median) S&P 500 firm in the full sample are owned by institutions. An average (median) firm in the contract sample has 60.6% (63.3%) of its shares owned by institutional investors. In contrast, this ratio is only 56.7% (59.3%) for an average (median) firm in the non-contract group. Both the mean and median differences in institutional ownership across the two groups are statistically and economically significant. It is evident that firms with CEO contracts tend to have higher institutional ownership than firms without CEO contracts. It is recognized that institutional investors may pressure firm managers to show short-term investment gains. Thus institutional ownership may measure the magnitude of potential myopia. The evidence hence implies that firms are more likely to use CEO contracts when mangers are more subject to potential myopic behavior, which corroborates the incentive effect hypothesis. Alternatively, it may also be true that firms with CEO contracts attract more institutional investment.

Panel B reports summary statistics on firm characteristics categorized by CEO employment contracts. The contract group has a mean (median) return-on-assets of 3.9% (3.7%), which is significantly lower than the mean (median) ROA of 5.7% (5.4%) for the non-contract firm. Moreover, an average (median) firm with a CEO contract has a return volatility of 11.1% (9.7%) over the 12 months prior to the event date. This number is substantially higher than the mean (median) return volatility of 9.1% (7.8%) for the non-contract group. The evidence indicates that a CEO is more likely to have a contract when the firm he works for has recently performed badly (lower return-on-asset) and when the uncertainty about the future firm performance is high (higher return volatility). Since mangers are more likely to be fired in adverse situations or under volatile circumstances, these findings suggest that firms tend to use contracts to protect managers, and line up their incentives and investment horizons with shareholders in an adverse and uncertain environment. It provides evidence consistent with the incentive effect hypothesis.

The mean (median) value of Tobin's q for the full sample is 2.05 (1.47), which is consistent with prior literature regarding Tobin's q. The contract group has a mean (median) q ratio of 2.09 (1.46) while the non-contract group has one at 2.02 (1.49). The difference is slim and statistically insignificant. It suggests that firms with CEO contracts do not differ from their non-contract peers in future growth opportunities to the extent that Tobin's q is a measure of growth options. This seems to be inconsistent with the prediction of incentive effect hypothesis, however further examination will be conducted in regressions analysis in later chapters.

Neither do firms in the contract sample differ from their non-contract counterparts in leverage ratios. An average (median) firm with a CEO contract has a leverage ratio of 17.9% (13.9%). This is not significantly different from the mean (median) leverage of 17.7% (14.3%) for firms with no CEO contracts. At the fiscal year end prior to the event date, the contract group has a mean (median) ratio of capital expenditure to sales at 9.2% (5.8%), which is higher than that of 8.6% (5.5%) for the non-contract group. The contract group also has a higher R&D to sales ratio (8.1% at the mean and 3.3% at the median) than that of the non-contract group (7.6% at the mean and 3.1% at the median). These findings are consistent with the incentive effect hypothesis that firms with CEO contracts tend to have larger growth options and are subject to higher costs of managerial myopia. Nevertheless, the differences are not statistically significant for both ratios. Overall, Table 4.1 provides some evidence consistent with the incentive effect hypothesis. No significant evidence is observed of the entrenchment effect hypothesis.

4.3.3. Mergers and Acquisitions

Table 4.2 describes the sample of mergers and acquisitions undertaken by S&P 500 CEOs during 1/1/1990-12/31/2005. It presents descriptive statistics on bidder attributes, deal characteristics, and aggregate compensation for the top five executives categorized by the presence of CEO employment contracts. Acquirer market

capitalization is measured 45 days preceding the announcement. Deal value is the total

value of each transaction from SDC, and the relative deal size is the ratio of deal value

to acquirer market capitalization.[19] Accounting variables and executive compensation

are all measured at the fiscal year end preceding the acquisition announcement date.

All accounting variables are Winsorized at the upper and lower 1% levels. Appendix

provides definitions of these variables.

As shown in Panel A the average (median) book value of assets for the

contract group is $25,707 mn ($5,833mn), which does not significantly differ from

that of $21,827mn ($6,309 mn) for the non-contract sample. However, on average

firms with CEO contracts have a market capitalization of $8,946 mn, which is

significantly smaller than that of $11,394 mn for firms without such agreements.

Nonetheless the medians across the two groups are not significant. It thus suggests the

existence of a few extremely large firms in the non-contract group.

Compared to their peers without CEO contracts, acquirers with such pacts have

performed worse prior to the acquisitions as measured by sales-to-assets and return-

on-assets (ROA). For example, an average (median) firm with a CEO contract has an

ROA of 2.5% (2.4%), compared to only 3.4% (3.5%) of the non-contract group. Both

the mean and median differences are statistically and economically significant. The

contract group also has higher leverage ratios and smaller free cash flow with respect

to assets than their non-contract peers. Firms with CEO contracts have an average

(median) leverage ratio of 20.2% (19.0%), which is substantially larger than the mean

(median) leverage ratio of 16.3% (14.4%). An average (median) acquirer in the

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[19] Both acquirer market capitalization and deal value are measured in the 2004 constant dollars.

contract group has a free cash flow to total asset ratio of 1.7% (2.8%) at the fiscal year end prior to the acquisition announcement. This is significantly lower than the ratio of 4.4% (4.0%) for the non-contract group. This suggests that CEOs with employment contracts are less likely to conduct acquisitions purely because they have a lot of cash at hand, thereby seeking private benefits at shareholder expense in the sense of Jensen (1986) and Harford (1999).

Bidders with CEO agreements are valued lower by the market (Tobin's q), indicating that managers of these firms are less inclined to make acquisitions only to take advantage of the overvaluation of their stocks and pursue personal interests at shareholder cost (Jensen (2004, 2005)). This preliminary evidence suggests that CEOs with employment contracts may be less subject to the agency problems of free cash flows of Jensen (1986) and of overvalued equity of Jensen (2004, 2005), which is evidence against the entrenchment effect hypothesis.

In addition, acquirers with CEO contracts have lower capital expenditure to PP&E and R&D to total assets ratios compared to bidders without contracts. To be more specific, the average (median) capital expenditure to PP&E ratio of firms in the contract group is 22.3% (17.9%), compared to 24.4% (19.8%) of the non-contract acquirers. The differences in both means and medians are marginally significant. The average (median) R&D to total assets ratio of the contract group is 4.9% (3.0%), which is substantially smaller than the 6.3% (3.6%) of the non-contract group. Therefore, to the extent that Tobin's q, capital expenditures-to-PP&E and R&D-to-assets capture the growth opportunities as documented in prior studies (Goyal, Lehn,

and Racic (2002), Yermack (1996), Servaes (1996) and Skinner (1993), among others), Panel A may suggest that acquirers with CEO agreements are less likely to be high-growth firms.

Panel B provides descriptive statistics on deal characteristics. There appears no significant difference in target size across the two groups. However, it does show that contracted CEOs are more prone to acquisitions with larger *relative* deal size than managers without contracts. Firms with contracts on average (at the median) purchase a target whose value is 37.2% (14.9%) as large as the bidder's market capitalization. This is significantly larger than the mean (median) ratio of 28.7% (13.8) for the non-contract acquirers. This provides preliminary evidence in favor of the incentive effect hypothesis, to the extent that a larger relative deal size is associated with larger risk. Alternatively, to the extent that relative deal size may be associated with size maximization, it also implies that acquirers with contracts are more likely to engage in empire building. Given that the contract group does not seem to acquirer larger targets than the non-contract group, this empire-building argument is unlikely true.

Across both samples, 36% of the deals are purely financed with cash. Approximately 35.7% of the deals made by CEOs with contracts and 35.6% of thos by non-contract CEOs finance their acquisitions with only cash. The difference in the percentage is not significant though. Only 7% of the acquisitions made by CEOs with contracts are tender offers, compared to 11% by CEOs without pacts. There exists no difference in target status between bidders with and without CEO pacts. Approximately half of the targets in the full sample are public firms while the

remainder is either private (16.5%) or a subsidiary (31.1%). For the non-contract

sample, 52% of their targets are public, 14.8% are private and the rest 33.2% are

subsidiary. For the non-contract acquirers, 52.7% of their targets are public

companies, 18% are private firms and 29.3% are subsidiary.

Panel C contains the summary statistics on top five executive compensation,

share ownership and the G-index for acquirers.[20] Following Datta, Iskandar-Datta,

and Raman (2001), total compensation equals the sum of salary, bonus, other annual

compensation, value of restricted stock granted, value of new stock options granted

during the year, long-term incentive payouts, and all other compensation. Options-

based compensation is the sum of the value of new stock options calculated using the

modified Black-Scholes model as a percentage of total compensation. Share

ownership is the percentage of the company's shares owned by the top five executives.

With the exception of the long-term incentive plan payout, acquirers with CEO

agreements grant higher pay to their top executives in all payment categories: salary,

bonus, stock options and total compensation. For example, the total salaries of top five

executives in a firm with a CEO contract is averaged at $3.61 million, which is

significantly higher than that of $3.24 million for executives in the non-contract

subsample. The same relation holds for the median salaries. An average (median)

acquirer in the contract group grants their top executives a total annual bonus of $3.98

mn ($2.30 mn). In comparison, the top five executives in the firms without CEO

contracts get a much smaller annual bonus totaling at $3.12 mn ($1.95mn) on average

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[20] Although not every company records the compensation of exactly five top executives, robustness checks suggest that the number of top executives is not significantly different across the two groups.

(at the median). On average, acquirers across the two groups give their executives similar worth of restricted stocks; although the contract group grants higher value of restricted stocks to their top managers at the median. At the fiscal year end prior to the announcement, bidders with CEO contracts grant their top management stock options with a total value of $17.5 mn ($6.2 mn) at the mean (median). This is considerably higher than the value of options offered to the executives in the non-contract group, *i.e.*, $8.99mn on average and $3.47 at the median.

An average (median) bidder in the contract group gives their top five executives a total compensation of $29.8mn ($16.9mn), compared to that of $17.8mn ($10.0mn). The difference is both statistically and economically significant. On average, 44% of the total compensation of top management in firms with CEO contracts is stock-options based. The median ratio is 41%. These two ratios are significantly lower than those for the non-contract sample, which are 37% ant 32% respectively.

The finding that acquirers with contracts tend to pay their top management higher compensations is consistent with Rusticus (2006), which concludes that CEOs with more power over (ineffective) boards (as proxied by the higher pay packages) tend to have a severance agreement. Alternatively, the higher pay of executives with employment contracts may indicate that these executives are on average of better quality. Finally, consistent with Gillan *et al.* (2006), firms with CEO contracts tend to motivate their top management by offering them more incentive pay as a percentage of total compensation.

On average, management in the contract group own 7.4% of the shares outstanding of their firms, compared to a slightly higher 7.8% for the non-contract group. However this difference in average insider ownerships across the two groups is insignificant. On the other hand, a median acquiring company with a CEO contract has significantly lower insider ownership as a percentage of the aggregate number of shares outstanding. As seen in Panel C, the median insider ownership of acquirers with contracts is 2.3%, which is significantly lower than that of 3.6% for the non-contract group. The G-index does not differ across firms with and without contracts. Bidders with CEO contracts have an average (median) G-index of 9.9 (10) while acquirers without these contracts have an average (median) G-index of 9.7 (10). Neither the mean nor the median values are significantly different across the two groups. Therefore, it suggests the use of CEO contracts to be uncorrelated with the implementation of anti-takeover provisions.

4.4. Summary

This thesis examines the determinants of use of CEO contracts and whether the presence of a contract *ex ante* impacts CEO investment decisions. Two competing hypotheses are developed. The incentive effect hypothesis predicts that employment contracts alleviate managerial concern regarding short-term profits and encourage CEOs to make investments that maximize shareholder value in the long run. This

hypothesis also indicates the use of contracts to be positively related to potential managerial myopia. Alternatively, the entrenchment effect hypothesis states that contracts may entrench poor-performing CEOs by insulating them from the discipline of the corporate control market and the internal governance mechanisms, thereby leading CEOs to pursue private benefits at shareholder expense. Under this premise, contracts are used when the potential benefits of entrenchment is large, such as large firm size, etc.

This chapter details the sample selection procedure and data sources. It also provides summary statistics of both the S&P 500 CEO sample and the M&A sample. Thus far, I have shown that for the full sample, CEO contracts are more often observed when using them is of high benefits to shareholders. That is, when the probability of potential managerial myopic behavior is high; e.g., when CEOs are older, are closer to retirement, have shorter tenure with the firm when taking office, are outside hire, are less likely to be a founder, are hired by firms with larger institutional ownership, worse recent performance and higher return volatility. For the M&A sample, overall I find that CEOs with contracts are less subject to the agency problems of free cash flows or overvalued equity. And they are more likely to take on risky acquisitions and hence less likely to underinvest in long-term risky projects. These are consistent with the incentive effect hypothesis and inconsistent with the entrenchment effect hypothesis.

The next section discusses the methodologies used in this study, and the following chapters present test results on the two competing hypotheses.

Chapter 5

RESEARCH METHODOLOGY

5.1. Introduction

This chapter describes empirical research methodologies employed in this thesis. The event-study methodology is used to compute acquirer announcement period abnormal returns. The acquirer buy-and-hold abnormal returns, the cumulative abnormal returns, and the size and book-to-market matched portfolio returns are used to measure acquirer post-event long-run stock performance. I also conduct the four – factor regressions of the calendar time portfolio returns to correct for cross-correlations in long-run stock returns. Finally, the Heckman sample selection model is employed and estimated to adjust for sample selection bias in my study.

5.2. Event Study Methodology

Abnormal stock returns around acquisition announcements for acquirers are computed. CAR (-1, +1) is the three day cumulative abnormal returns often used in the M&A literature, where the abnormal return equals the raw return net of the CRSP value-weighted market index return. To account for possible errors in SDC announcement dates, I also conduct tests based on the five-day cumulative returns

CAR (-2, +2), and the results are qualitatively similar.[21] Results are similar if a market

model risk adjusted return is used, where the pre-event Beta estimation period is from

200 days to 60 days prior to the acquisitions announcement date (day 0). [22]

5.3. Size and Book-to-Market Matched Portfolio

Fama and French (1992, 1993) find that size and book-to-market are important

determinants of the cross-section of expected stock returns. Lyon, Barber, and Tsai

(1999) note that the size and book-to-market matched portfolio approach yields well-

specified statistics. To compute acquirer long-run returns, the size and book-to-market

reference portfolio approach is employed, similar to Fama and French (1992, 1993),

Brav and Gompers (1997), and Lyon *et al.* (1999).

Specifically, to form the size and book-to-market benchmark, all NYSE-listed

firms are divided into five quintiles based on size and into five quintiles based on

book-to-market (BM), where size and BM are defined as in Fama and French (1992).

The intersection of these groupings yields 25 size and BM portfolios. Each sample

firm is placed into its appropriate portfolio, and its return is adjusted for the average

returns across all other firms in that portfolio, *i.e.*, all firms on CRSP with size and

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[21] Fuller, Netter, and Stegemoller (2002) find that the announcement dates in the SDC database are correct for about 93% of a random sample from 1990 to 2000, whereas the rest have a difference of no more than two days.

[22] A market model adjusted return is a standard event study methodology. Results are similar if other estimation periods are used. Brown and Warner (1985) provide a more detailed discussion of these alternative methods.

BM data after excluding firms that have gone public, had an SEO or acquisition within the past three years.

Following Fama and French (1992, 1993), size equals the share price times the number of shares outstanding, and BM equals the book value of equity divided by total market capitalization, where book value equals total shareholders equity minus preferred stock plus deferred taxes (when available), plus investment tax credits (when available). Preferred stock is defined as redemption, liquidation, or carrying value (in this order), depending on availability. Book value is measured as of the end of the fiscal year, and market value is measured at the end of previous June. Book value of a given fiscal year is not used until at least four months after the end of the fiscal year to guarantee that the book value is available to the market when used. See Fama and French (1992, 1993), Brav and Gompers (1997), and Lyon *et al.* (1999) for details.

5.4. Return Metrics: BHAR and CAR

Acquirer post-acquisition long-run returns are measured using buy-and-hold abnormal returns (BHAR). Buy-and-hold returns (BHR) rather than cumulative abnormal returns (CAR) are employed because BHRs replicate a plausible investment strategy and hence are close to investor experiences. Although CARs may be associated with fewer statistical problems than BHRs, it is hard to interpret the results

of CARs. However, as a robustness check, I also conduct tests based on CARs and the results remain similar.

The BHAR for firm i is defined:

$$BHAR_i = \left\{ \left[\prod_{t=1}^{T} \left(1 + R_{i,t}\right) - 1 \right] - \left[\prod_{t=1}^{T} \left(1 + R_{benchmark,t}\right) - 1 \right] \right\} \times 100 \qquad (5.1)$$

where $t=1$ is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one, three, and five year anniversary date since the effective date, or the delisting date, whichever is earlier. $R_{benchmark,t}$ is the value-weighted return on a matched size and BM portfolio.

The cumulative abnormal return on firm i, CAR_i, is computed as

$$CAR_i = \left[\sum_{t=1}^{T} \left(R_{i,t} - R_{benchmar,t} \right) \right] \times 100 \qquad (5.2)$$

where $t=1$ is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one, three, and five year anniversary date since the effective acquisition date, or the acquiring firm's delisting date, whichever is earlier. $R_{benchmark,t}$ is value- and equally-weighted return on a matched size and book-to-market portfolio return over the same period as the sample firm.

5.5. Four-Factor Regression and Calendar Time Portfolio

Fama (1998) and Mitchell and Stafford (2000) point out that cross-correlations

between firm returns make it problematic to conduct significance tests using long-run,

event time, buy-and-hold and cumulative abnormal returns. A well-specified test must

consider the potentially high cross-correlations between acquiring firm returns in the

long run. The calendar time portfolio approach which dates back to Jaffe (1974) and

Mandelker (1974) offers a solution and results in a more powerful test of bidder post-

acquisition abnormal returns. Lyon *et al.* (1999) show that this method gives the best-

specified test of abnormal returns in non-random samples. To further evaluate the

impact of CEO agreements on value-creation in acquisitions, I use the calendar time

portfolio returns approach and the Fama and French (1992, 1993) three factor and

Carhart (1997) four factor regressions.

To form the calendar time portfolio, for each month between 1990 and 2005,

all firms that have made an acquisition in the previous one or three years are classified

into two portfolios: firms with CEO contracts and firms without contracts, according

to whether the acquiring CEO had an employment contract.[23] The monthly calendar

time portfolio returns equal the average returns of all acquirers in the same portfolio. I

then run weighted least squares regressions, the weight being the number of deals each

month, of the calendar time portfolio returns net of the risk-free rate on Fama and

French (1992, 1993) three factors plus Carhart (1997) momentum factor. The

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[23] For further analysis, I also form calendar time portfolios categorized by CEO contracts, conditional on the means of payment (cash versus stock deals) and the mode of the acquisition (merger or tender offer).

intercepts measure the average monthly abnormal returns, given that the four-factor

model captures the underlying risks appropriately. Finally the intercepts from the

regressions of the monthly return differential between the portfolios of acquirers with

and without CEO contracts represents the difference in the monthly abnormal returns

between the two groups.

5.6. Heckman Sample Selection Model

The hypotheses presented in Chapter 2 suggest that the use of a contract should

be a function of the net benefits of using it. More specifically, I model the choice

model as the following:

$$S_i^* = f(B_{ci} - B_{ni}) = Z_i\gamma + \varepsilon_i$$

$$
\begin{aligned}
I_i &= 1 \quad \text{(Contracts used)} && \text{if } S_i^* > 0 \\
&= 0 \quad \text{(Contracts not used)} && \text{o.w.}
\end{aligned}
\qquad (5.3)
$$

where S_i^* is the latent variable measuring sentiment within a firm favoring a contract,

B_{ci} is the net benefits to shareholders of having a CEO contract while B_{ni} is those of

not having a contract. Therefore, S_i^* is a function of the net benefits to shareholders of

having a contract versus not having one. Z_i is a variety of explanatory variables

measuring benefits and costs to firm shareholders, and γ are the coefficients on these

explanatory variables. ε_i is the error term In reality, we cannot observe S_i^*. What is

observable is whether a firm has a CEO contract or not. Let I_i be an index variable

that equals one if CEO i has an employment agreement as of the event date, and zero

otherwise. A firm chooses to give a CEO contract if and only if the overall sentiment

favors a contract, that is, $S_i^* > 0$.

The focus of the study is acquirer returns, which can be described by two

switching regimes. Note that Equation (5.3) serves as a criterion function that

determines which of these two regimes is applicable. We have the model as follows:

$$R_{ci} = X_{ci}\beta_c + \varepsilon_{ci} \tag{5.4}$$

$$R_{ni} = X_{ni}\beta_n + \varepsilon_{ni} \tag{5.5}$$

where X_{ci} are determinants of acquirer returns when a CEO contracts is used and X_{ni}

are determinants of returns to acquiring shareholders when no contract is used.

However, equations (5.4) and (5.5) cannot be estimated directly due to a potential

selection bias. This bias arises if the errors in equations (5.4) and (5.5) are correlated

with the error in equation (5.3). For example, contracts are used when profitability of

using them is high. If contracts are used, *i.e.*, $I_i = 1$ and $S_i^* > 0$, then ε_i is positive (Eq.

(5.3)). When profitability of using contracts is high, given attributes X_{ci}, the error term

ε_{ci} in Eq. (5.4) is positive. Therefore, ε_i and ε_{ci} are positively correlated. That is, the

observations of using and not using contracts are not independent. Rather, firms

choose to use or not to use contracts. Under such a scenario, ordinary least squares (OLS) estimation of equation (5.4) would result in biased estimates of the coefficients β_c. This is because the expected value of the error term would not be zero and violates the OLS assumptions.

Specifically, under the first regime where a contract is used, the expected return to acquiring shareholders is:

$$E\left(R_{ci} \mid X_{ci}, I_i = 1\right) = X_i\beta_c + E\left(\varepsilon_{ci} \mid X_{ci}, I_i = 1\right)$$

$$= X_i\beta_c - \frac{\phi(Z_i\gamma)}{\Phi(Z_i\gamma)}\sigma_{3,4} \qquad (5.6)$$

where $\sigma_{3,4}$ is the covariance between the error term in Eq. (5.3) and Eq. (5.4), $\phi(\cdot)$ is the standard normal density function, and $\Phi(\cdot)$ is the standard normal cumulative distribution function. Since the explanatory variables for acquiring returns remain the same whether a contract is used or not, I denote control variables as X_i, that is, $X_i = X_{ci} = X_{ni}$. As long as $\sigma_{3,4}$ is not zero, an OLS estimation of equation (5.4) would produce biased estimates of β_c because in so doing we actually omit one variable, $-\frac{\phi(Z_i\gamma)}{\Phi(Z_i\gamma)}$, in OLS regression.

Under the second regime where contracts are not used, the expected return to acquiring shareholders is:

$$E\left(R_{ni} \mid X_i, I_i = 0\right) \;=\; X_i\beta_n + E\left(\varepsilon_{ni} \mid X_i, I_i = 0\right)$$

$$= X_i\beta_n + \frac{\phi(Z_i\gamma)}{1 - \Phi(Z_i\gamma)}\sigma_{3,5} \tag{5.7}$$

where $\sigma_{3,5}$ is the covariance between the error terms in Eq. (5.3) and Eq. (5.5). Again,

as long as $\sigma_{3,5}$ is not zero, an OLS regression of Eq. (5.5) will produce a biased

estimate of β_n since it ignores an additional right-hand-side variable $\dfrac{\phi(Z_i\gamma)}{1 - \Phi(Z_i\gamma)}$.

One way to derive consistent estimates of the parameters in equations (5.4) and

(5.5) is to use the Heckman (1979) two-step sample selection model. In the first step,

we run the probit regression with observations I_i and the full sample and obtain the

ML estimate of γ: $\hat{\gamma}$. In the second step, we separate the full sample into the contract

and non-contract subsamples, and estimate equations (5.4) and (5.5) by OLS using

only subsamples accordingly, with an additional explanatory variable computed from

the first-step probit estimation. This additional regressor, which is referred to as the

inverse Mills ratio, is used to correct for the potential nonzero expectations of the error

terms in (5.4) and (5.5). As illustrated afore, the inverse Mills ratio is computed as

$\dfrac{\phi(Z\hat{\gamma})}{1 - \Phi(Z\hat{\gamma})}$ if contracts are *not* used, and $-\dfrac{\phi(Z\hat{\gamma})}{\Phi(Z\hat{\gamma})}$ if contracts are used, and $Z\hat{\gamma}$ is the

fitted value from the first-step probit estimation. The coefficient on the inverse Mills

ratio in each OLS regression is an estimate of the covariance between the error term in

that equation and the error in Equation (5.3). If the coefficient of the inverse Mills ratio is significantly different from zero, then a selection bias occurs.

Under the incentive effect hypothesis, contracts are used to reduce CEO myopia so that firm value is maximized. Therefore, contracts are used whenever the net benefits of using it are larger than the benefits of not using it. That is, contracts are used ($I_i = 1$ and $S_i^* > 0$, hence ε_i from Equation (5.3) is positive) when profitability of using contracts is high (ε_{ci} in Equation (5.4) is positive). Therefore, ε_i and ε_{ci} are positively correlated, meaning a positive coefficient on the inverse Mills ratio in OLS regression of Equation (5.4). The incentive effect hypothesis also implies that contracts are not used when not using them produces higher profitability than using contracts. Hence a negative coefficient on the inverse Mills ratio in OLS regression of Equation (5.5) is predicted.

Under the entrenchment effect hypothesis, contracts are used to entrench CEOs and allow managers to pursue private benefits at shareholder expense, thereby leading to sub-optimal investment decisions. Thus contracts are used ($I_i = 1$ and $S_i^* > 0$, hence ε_i from Equation (5.3) is positive) when using them actually reduces firm value. (ε_{ci} in Equation (5.4) is negative). Therefore, a negative coefficient on the inverse Mills ratio is obtained in the OLS regression of Equation (5.4). Similarly, the entrenchment effect hypothesis implies that contracts are not used when not using them produces lower profitability. This leads to a positive coefficient on the inverse Mills ratio in OLS regression of Equation (5.5).

5.7. Summary

This chapter provides detailed descriptions of the research methodologies used in this thesis. Moreover, I also discuss the advantages and disadvantages of these methodologies over alternative methods. Overall, the methodologies employed in this thesis address most of the statistical concerns. Alternative methods are also used as a robustness check. The next three chapters are devoted to test results using the methodologies outlined above.

Chapter 6

UNIVARIATE TEST RESULTS

<u>6.1. Introduction</u>

This chapter presents univariate test results of the two competing hypotheses: the incentive versus the entrenchment effect hypotheses. More specifically, I aim to test the two hypotheses by analyzing two dimensions of acquisitions: value-creation and risk-taking.

Under the incentive effect hypothesis, CEO contracts serve as a mechanism for protecting managers against downside risk and alleviating managerial myopia. Consequently, CEOs with contracts are closer to shareholders in horizons and incentives and are involved with acquisitions that create more value than their peers without agreements. Alternatively, the entrenchment effect hypothesis predicts that contracts merely help entrench underperforming executives and allow managers to pursue private benefits at shareholders expense in sub-optimal investments. Entrenched CEOs with contracts are thus more likely to undertake acquisitions that create less value for shareholders, compared to managers without these contracts.

Regarding risk-taking incentives, the incentive effect hypothesis states that CEOs with contracts tend to engage in acquisitions with higher uncertainty and risk; while the entrenchment effect hypothesis predicts that contracts entrench mangers, who now prefer a quiet life by investing in projects with less risk and uncertainty.

Section 6.2 addresses the question of whether CEO contracts motivate better acquisition decisions. Test results based on the full sample, subsamples categorized by cash or stock deals, and subsamples sorted by mergers or tender offers are discussed. Section 6.3 investigates the issue of whether contracts encourage or discourage managerial risk-taking behavior. Acquisition risk is measured in two ways, *e.g.*, the pre-acquisition uncertainty and risk associated with targets, and the changes in acquiring firm risk following the transactions.

6.2. CEO Contracts and Value-Creation in Acquisitions

This section explores the impact of CEO employment contracts on managerial acquisition decisions and value-creation to acquiring shareholders. To gauge the magnitude of the value created to bidding shareholders, I examine four measures: the acquisition premiums paid to target shareholders, the acquirer announcement period returns, acquirer long-run post-acquisition abnormal stock returns, and the calendar time portfolio returns. I first conduct the analysis using the full sample. Then I consider how the means of payment and the modes of acquisitions impact the results.

6.2.1. Full Sample

First, I discuss results using the full sample of 1,083 acquisitions completed by the S&P 500 firms during January 1, 1990 and December 31, 2005. I study four proxies for value-creation: acquisition premiums, acquirer announcement period return, acquirer long-run post-acquisition abnormal returns including both buy-and-hold and cumulative abnormal returns (BHAR and CAR), and the calendar time portfolio return.

Following Datta *et al.* (2001), the acquisition premium is defined as the percentage difference of the highest offer price over the target share price four weeks prior to the announcement date. This measure captures how much more an acquirer pays to target shareholders relative to target share price prior to the announcement. Everything else equal, the higher the premiums paid to the target shareholders, the lower the value generated to the acquiring shareholders.

Shleifer and Vishny (1988) and Jensen (1986) suggest that rent-seeking managers make value-destroying acquisitions by overpaying for their targets to extract personal benefits at the expense of acquiring shareholders.[24] Empirically, Datta *et al.* (2001) report that managers with low options-based compensation pay higher acquisition premiums than managers with high options-based compensation, whose incentives are more closely aligned with those of shareholders. The incentive effect

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[24] Shleifer and Vishny (1988) suggest that acquiring CEOs motivated by objectives other than value-maximization of stockholder wealth also pay for benefits to themselves that are of no value to their shareholders. For example, they may pay for augmenting the size of the firm and the opportunity to diversify and entrench himself.

hypothesis predicts that acquiring managers with employment contracts, whose

horizons and interests are closer to those of acquiring shareholders, are less likely to

pursue personal benefits by overpaying their targets.

Grossman and Hart (1980) suggest that bidders pay the value that fully reflects

the expected increase in profitability under new management, surrendering all

potential gains to target shareholders. Roll (1986) notes that managers influenced by

hubris try to maximize value but overestimate the target, and hence simply overpay.

On the other hand, prior literature indicates that self-interested managers may make

suboptimal acquisitions by overpaying for their targets to extract private benefits at the

expense of acquiring shareholders (*e.g.* Shleifer and Vishny (1988), Jensen (1986) and

Datta *et al.* (2001)). Acquiring CEOs motivated by objectives other than value-

maximization of stockholder wealth pay for benefits to themselves that are of no value

to their shareholders as well (Shleifer and Vishny (1988)). Thus, under the

entrenchment effect hypothesis, CEOs with contracts are more likely to have severe

conflicts of interest with their shareholders, are more motivated for value-destroying

acquisitions, and hence are more likely to overpay for their targets than their

counterparts without agreements:

Table 6.1 shows on average, the entire sample of acquirers in S&P 500 index

pay 42.26% in acquisition premium. Contract group pays 40.18%, which is about 4%

lower compared to acquirers without CEO contracts (44.06%). This is consistent with

the incentive effect hypothesis that CEOs with employment contracts are more

motivated to undertake value-increasing acquisitions and pay lower premiums than

CEOs without these contracts. However, the difference in means is not statistically significant. The median premium paid by the full sample is 37.54%, which is slightly lower than the mean. The median premium paid by managers with contracts is 35.7%, which is significantly lower than the median premium of 39% paid by CEOs without agreements at the 10% significance level. These results provide weak evidence that CEOs with employment contracts pay lower premiums than their non-contract counterparts, thereby creating more value to their shareholders and paying lower price to target shareholders.

Alternatively, Grossman and Hart (1980) show that target shareholders will not tender their shares unless paid a price fully reflecting the expected increase in profitability under new management. If this is true, no acquisitions will occur since acquirers cannot gain from the deals. However, if the future prosperity of the target under new management is valued at a lower price to target shareholders than to the acquirer, this acquisition is profitable for the bidder and will take place. Therefore, acquisition premiums actually measure the expected increase in future profitability from the *target* shareholders' point of view. The finding that CEOs with contracts pay less acquisition premiums suggests these managers are more likely to purchase targets whose prospects under the new management are valued less to target shareholders. This indicates that acquiring CEOs with contracts can afford to take the risk of acquiring targets whose prosperity is less favored by target shareholders, whereas managers without contracts would hesitate in such a scenario and indulge in bids valued more by target shareholders and pay higher premiums. Consistent with the

incentive effect hypothesis, this implies that managers with contracts can afford to take risky acquisitions less favored by the market *a priori*, but that may lead to better post-acquisition performance in the long run.

In sum, results regarding acquisition premiums provide weak support for the incentive effect hypothesis, but no evidence consistent with the entrenchment effect premise.

The second proxy of acquisition profitability is acquirer announcement period returns. Table 6.2 reports acquirer announcement period cumulative abnormal returns (CAR) for the full sample categorized by the presence of CEO employment contracts. CAR (-1, +1) is the three day cumulative abnormal returns often used in the M&A literature, where the abnormal return equals the raw return net of the CRSP value-weighted market index return. To account for possible errors in SDC announcement dates, I also conduct tests based on the five-day cumulative returns CAR (-2, +2), and results are qualitatively similar.

Consistent with the extant literature, I find bidder announcement returns to be insignificantly different from zero for both three- and five-day announcement returns, and for both full sample and the contract and non-contract subsamples.[25] For example, the mean (median) announcement period return of the entire sample is -0.13% (0.06%) over the three-day window and 0.29% (0.14%) over the five-day window. None of the returns are statistically or economically significant. The three-day announcement return of the contract group is -0.09% on average, and 0.23% at the median. Both are

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[25] Andrade *et al.* (2001) document an average announcement period return of negative 0.70% for bidders during 1990-2004. See Bruner (2002) for a comprehensive survey of literature on mergers and acquisitions.

higher than the mean and the median of the non-contract sample (-0.17% and -0.22%, respectively). However, the differences are not significant. Over the five-day window, the contract group experiences a higher mean announcement return than the non-contract group (0.26% vs. 0.32%), yet a lower median return (0.26% vs. 0.32%).Again, the differences are not statistically significant.

The lack of significance is potentially a result of the information asymmetry between the acquiring managers and the market regarding the future profitability of the deals.[26] This information asymmetry and the resulting uncertainty among investors potentially prevent the market from determining the true value of deals at the announcement. If employment contracts do have substantial effects on managerial acquisition decisions, we expect to see this impact in acquirer long-term post-acquisition stock performance, as more information is perceived by the market in the long run and this information helps reduce the information asymmetry. The following sections address impact of contracts on bidder long-run post-event returns.

The incentive effect hypothesis predicts that acquirers with CEO employment pacts should outperform their peers without such contracts in the long run post acquisition. In contrast, if contracts entrench underperforming managers, we expect a negative relation between the existence of CEO agreements and acquirer post-acquisition stock performance.

Fama and French (1992, 1993) find that size and book-to-market are important determinants of the cross-section of expected stock returns. Lyon, Barber, and Tsai

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[26] Notably, this same type of information asymmetry also contributes to managerial myopia, as discussed earlier.

(1999) note that the size-and-book-to-market-matched portfolio approach yields well-specified statistics. To compute acquirer long-run returns, buy-and-hold abnormal returns (BHAR), cumulative abnormal returns (CAR), and the size-and-book-to-market reference portfolio approach are employed, similar to Fama and French (1992, 1993), Brav and Gompers (1997), and Lyon *et al.* (1999).[27] Please refer to Chapter 5 for detailed description of the methodology.

Table 6.3 provides the bidder BHAR compounded daily over one, three and five years after the effective date, where the benchmark equals the value- and equally-weighted return on a size-and-BM matched portfolio. If a firm gets delisted before its first or third anniversary since the completion of the deal, BHAR is compounded daily till the delisting date. First, I discuss the results regarding the value-weighed benchmark portfolio returns. For both the full sample and the two subsamples categorized by contracts, it appears that S&P 500 firms experience positive and increasing long-run post acquisition abnormal return on average, although the median returns are negative and decreasing in time. This pattern of S&P 500 companies is in contrast to the long-run abnormal returns of all acquiring firms documented in prior literature, which are negative for the equally-weighted and insignificant from zero for the value-weighted returns. However, Vijh and Yang (2006) report a similar pattern in S&P 500 long-run post-acquisition returns as mine. They find that the S&P 500

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[27] Specifically, to form the size/book-to-market benchmark, all NYSE-listed firms are divided into five quintiles based on size and into five quintiles based on BM, where size and BM are defined as in Fama and French (1992). The intersection of these groupings yields 25 size/BM portfolios. Each sample firm is placed into its appropriate portfolio, and its return is adjusted for the average returns across all other firms in that portfolio, *i.e.*, all firms on CRSP with size and BM data after excluding firms that have gone public, had an SEO or acquisition within the past three years. See Fama and French (1992, 1993), Brav and Gompers (1997), and Lyon *et al.* (1999) for details.

acquirers have stronger pre-acquisition operating performance and realize significant gains in post-acquisition performance. They interpret the evidence as consistent with the efficiency hypothesis, which suggests that S&P 500 firms are more efficiently managed firms and make better acquirers.

Within one year since the acquisition effective date, acquirers with CEO employment contracts experience a mean (median) abnormal return of 7.4% (0.5%) relative to their benchmarks, compared to a mean (median) return of 8.5% (-1.0%) on the non-contract group. Nevertheless, the differences in both means and medians are not significant. The contract group do not appear to outperform their non-contract peers over the one-year period following the acquisitions. However, in the longer horizon of three years, bidders with CEO pacts significantly outperform acquirers without contracts. This pattern also holds for the medians. For example, acquirers with CEO contracts exhibit a mean (median) three-year abnormal return of 42.6% (-3.7%), which is significantly higher than the mean (6.0%) and the median (-13.3%) returns of the non-contract acquirers. The 36.6% (9.6%) difference in mean (median) returns across the two subsamples are significant at the 1% (5%) level. At the fifth anniversary since the completion of the transactions, acquirers with contracts experience both a higher mean abnormal return than bidders without CEO contracts (*i.e.*, 86.3% vs. 46.1%) and a higher median returns (-3.6% vs. -18.2%); although the difference is only significant at the median. These findings suggest that employment contracts help align the horizons of CEOs with those of shareholders, mitigating

managerial myopia and encouraging CEOs to make value-maximizing investments. I find no evidence that contracts entrench managers and lead to bad acquisitions.

Note that although the means of BHAR of both the full sample and the subsamples are positive and increasing across the event windows, the medians are in general negative and decreasing over time, suggesting the existence of a few superior performers while the majority are doing poorly compared with their benchmark. This is consistent with prior findings that bidder returns decline after the consummation of the transactions.[28]

The patterns we observe in the case of the value-weighted benchmark returns hold the same for the equally-weighted benchmark. Over the one year after the acquisition, acquirers with CEO contracts don't outperform their counterparts without contracts. However, at the third anniversary since the completion of the deals, the contract group perform significantly better than the non-contract group. And the difference in mean (median) of 36.1% (11.1%) is both statistically and economically significant. Over the five years since the acquisition, acquirers with contracts retain higher returns than their non-contract peers at both the mean and the median, yet only the medians are significantly different at the 5% level across the two groups.

Results regarding CEO post-acquisition BHAR provide evidence in support of the incentive effect hypothesis. Specifically, I find that acquirers with CEO contracts significantly outperform their peers without contracts over the longer event windows

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[28] Bruner (2002) reports that out of the 16 studies the author surveyed regarding long-term post-acquisition returns to bidders, 11 find negative and significant returns. See Asquith (1983), Bradley, Desai, and Kim (1983), Malatesta (1983), Agrawal, Jaffe, and Mandelker (1992), and Moeller, Schlingemann, and Stulz (2003), among others.

of three to five years, although no difference is discerned over the short run. This suggests that contracts help reduce managerial pressure and concerns to deliver short-term gains, encouraging them to pursue value-maximizing projects in the long run. The evidence thus far shows that contracts do not entrench CEOs and motivate sub-optimal acquisition decisions.

Table 6.4 examines the relation between CEO contracts and acquirer post-acquisition cumulative abnormal returns (CAR) for the full sample. Results are similar to those of BHAR. The full sample experience positive abnormal cumulative returns relative to their value- and equally-weighted benchmark portfolios over one, three and five years. These CARs also increase over time. Similar patterns are observed for both the contract and non-contract subsamples as well.

The mean (median) one-year CAR of the contract group relative to the value-weighted benchmark portfolio is 6.3% (4.4%), which is slightly larger than the mean (median) CAR of non-contract acquirers at 5.7% (2.4%). The difference is insignificant. However, the three-year CAR of acquirers who contract with their CEOs is 16.3% at the mean and 9.1% at the median, compared to a mean (median) of only 9.1% (3.5%) for the non-contract acquirers. A difference in three-year CAR of 9.2% at the mean and 5.6% at the median are both statistically and economically significant. Over five years, the contract group also significantly outperforms the non-contract group with a difference of 9.2% in the mean and 7.8% in the median returns. Results regarding the equally-weighted benchmark portfolio returns show a similar pattern.

Overall, the analysis of acquirer post-acquisition CAR demonstrates that acquiring CEOs with contracts tend to make acquisitions that produce significantly higher long-run abnormal firm returns than mangers without these contracts; although in the short run (*e.g.*, one year), the contract group do not seem to outperform the non-contract group. These are consistent with the prediction of the incentive effect hypothesis that contracts encourage CEOs to make value-maximizing investments by alleviating managerial myopia. These are in stark contrast to the prediction of the entrenchment premise that contracts entrench managers and result in less profitable acquisitions.

Fama (1998) and Mitchell and Stafford (2000) point out that cross-correlations between firm returns make it problematic to conduct significance tests using long-run, event time, buy-and-hold and cumulative abnormal returns. A well-specified test must consider the potentially high cross-correlations between acquiring firm returns in the long run. The calendar time portfolio approach which dates back to Jaffe (1974) and Mandelker (1974) offers a solution and results in a more powerful test of bidder post-acquisition abnormal returns. Lyon *et al.* (1999) show that this method gives the best-specified test of abnormal returns in non-random samples. To further evaluate the impact of CEO agreements on value-creation in acquisitions, I use the calendar time portfolio returns approach and the Fama and French (1992, 1993) three factor and Carhart (1997) four factor regressions. Table 6.5 provides test results based on the calendar time portfolio returns and the weighted least squares regressions of the four-factor model.

To form the calendar time portfolio, for each month between 1990 and 2005, all firms that have made an acquisition in the previous one or three years are classified into two portfolios: firms with CEO contracts and firms without contracts, according to whether the acquiring CEO had an employment contract.[29] The monthly calendar time portfolio returns equal the average returns of all acquirers in the same portfolio. I then run weighted least squares regressions, the weight being the number of deals each month, of the calendar time portfolio returns net of the risk-free rate on Fama and French (1992, 1993) three factors plus Carhart (1997) momentum factor. The intercepts measure the average percentage monthly abnormal returns, given that the four-factor model captures the underlying risks appropriately. These test results are presented in the first two columns under each event window in Table 6.5. Finally, I run the four-factor regressions with the dependent variable being the return on a zero-investment portfolio longing acquirers in the contract sample while simultaneously shorting the non-contract firms each month. The regression intercepts in the third column represent the difference in the monthly abnormal returns in percentage between buyers with and without CEO contracts.

Table 6.5 shows evidence consistent with that on acquirer BHAR and CAR. It demonstrates that both the contract and the non-contract groups experience a positive and significant post-acquisition abnormal return over the three event windows, after controlling for the appropriate risk factors. For example, the contract portfolio experiences a monthly value-weighted abnormal return of 0.89% over the first year

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[29] For further analysis, I also form calendar time portfolios categorized by CEO contracts, conditional on the means of payment (cash versus stock deals) and the mode of the acquisition (merger or tender offer).

after the acquisition (equivalent to 10.7% per annum), 1.21% over the three-year window (equivalent to 14.5% per annum and a three-year accumulated return of 43.7%), and 1% over the five-year window (equivalent to 12% per annum and a five-year accumulated return of 60%). In comparison, the non-contract group earns a monthly value-weighted abnormal return of 0.68% over year one (equivalent to 8.2% per annum), 0.68% over three years (equivalent to 24.5%), and 0.72% over year five (equivalent to 8.6% per annum, and a five year return of 43.2%). Thus for the value-weighted calendar portfolios, the contract group does not appear to outperform its non-contract peers within one year following the deals. The monthly difference in abnormal return of 0.20% (2.4% annually) over the one-year window is not significant. However, over three years, acquirers with CEO contracts fare significantly better. More specifically, the contract portfolio earns an average monthly abnormal return of 1.21%, while the non-contract portfolio earns an abnormal return of 0.68%. The difference in monthly abnormal returns between the two portfolios is 0.56%, which is both statistically and economically significant. It is equivalent to an annual return difference of 7% and a three-year return difference of as high as 20%. Over the five years following the acquisitions, the contract group continue performing better than the non-contract group with a difference in monthly return of 0.28% (equivalent to a five-year return difference of 10%). However, this return difference is not statistically significant. For the equally-weighted portfolios, the contract sample performs better than the non-contract group across all three windows. However the difference is attenuated and statistically insignificant.

Overall the findings using calendar portfolio returns and the four-factor regressions model provide additional support for the incentive effect hypothesis. The evidence demonstrates that CEOs with agreements are less concerned about the short-term outcomes, and thus are more motivated than their non-contract counterparts to undertake projects that create larger shareholder value but may require a long wait before the gains materialize.

To summarize, acquiring CEOs with employment contracts pay lower acquisition premiums and engage in deals that create more value in the long run to acquiring shareholders compared to managers without agreements. These results hold true across different measures of value-creation, return metrics, statistical specifications and models. The evidence regarding the full sample thus supports the incentive effect hypothesis, but is inconsistent with the entrenchment effect premise.

6.2.2. Cash vs. Stock Deals

This section studies the impact of CEO employment contracts on the profitability of acquisitions conditional on the medium of payment, *e.g.*, cash versus stock deals. Consistent with prior literature, cash acquisitions refer to deals paid with 100% cash, while stock ones to deals financed with pure stocks or a mix of cash and stocks and/or other sources of payment. Test results on acquisition premiums, acquirer three- and five-day announcement returns, acquirer post-acquisition long-run BHAR

and CAR, and the calendar time portfolio returns are discussed in details, categorized by the means of payment.

Table 6.6 reports the analysis on acquisition premiums. In cash deals, acquiring CEOs with employment contracts pay significantly lower premiums than managers without contracts, consistent with the incentive effect hypothesis. The mean (median) premium paid by CEOs with contracts is 36.4% (31.6%), which is significantly lower than the mean (median) premium of 50.8% (48.6%) paid by managers without contracts. The difference of 14.4% (17%) in mean (median) premium across the two subsamples is substantial. In comparison, the difference is not significant among stock deals. Specifically, the contract group pays a mean (median) premium of 40.7% (36.2%), and the non-contract group pays a slightly higher mean (median) premium of 42.7% (37.5%) to their target shareholders in a stock deal. The difference is samll and statistically insignificant.

The finding that contracts help reduce premiums in cash but not in stock deals provides some additional support for the incentive effect hypothesis. Hansen (1987) suggests that the overpayment risk is more significant in cash deals than in stock deals. In cash bids, target shareholders get a fixed payment and leave, while in stock deals target shareholders' wealth is contingent on the future prosperity of the new firm. As a result, acquirers with information disadvantage about their target value can protect themselves against the potential costs of buying a "lemon" by sharing the risk of overvaluation with the target shareholders through the (contingent) stock payments. By accepting a stock deal, the target shareholders signal their optimism regarding the

future of the new firm. Similarly, rejecting a stock payment would be a signal of pessimism about the deal, *e.g.*, due to bidder overpayment. Hansen (1987) suggests the risk of overpayment to be less severe with a stock bid than a cash bid. Thus, our evidence shows that employment contracts are more effective in alleviating this overpayment problem in cash bids where the risk of overpayment by acquirers is high.

Alternatively, the target shareholders may prefer a sure cash payment to an uncertain stock payment, especially when they know less about the acquirer's value. Given this, the target shareholders might require a lower price in a cash bid. Whether the overpayment risk is higher in cash or stock bids is an empirical question. Unreported tests show that for the non-contract group, premiums are larger in cash bids than in stock bids, suggesting that absent CEO contracts, overpayment may be more likely to occur in cash deals as predicted by Hansen (1987). However, for acquisitions made by the contract group, premiums do not differ across the medium of payment, implying that CEO contracts may have reduced the overpayment problem associated with cash bids.

On the whole, test results of acquisition premiums show that across both cash and stock deals, managers with employment contracts tend to pay lower premiums for their targets. This is consistent with the prediction of the incentive effect hypothesis that contracts encourage managers to undertake value-maximizing investments and pay lower purchase prices for their targets. It contradicts the entrenchment effect hypothesis that contracts entrench managers and induce them to overpay for their targets in order to extract private benefits at the expense of acquiring shareholders.

More importantly, the evidence also suggests that employment contracts are most effective in mitigating the problem of overpayment where the risk of overpayment is likely the highest, *i.e.*, in cash deals. This further supports the incentive effect hypothesis.

Table 6.7 provides evidence on bidder announcement returns categorized by the means of payment. Consistent with prior studies, acquirers in cash deals experience positive and significant announcement period returns while bidders in stock deals see significantly negative CAR.[30] These results hold for the full sample, the contract, as well as the non-contract subgroups over both event windows. Interestingly, in cash bids acquirers with CEO contracts exhibit significantly higher announcement period return compared to bidders without such pacts. An average (median) acquirer with a CEO contract experiences a three-day CAR 1% (1.3%) higher than its peer without such a pact. In contrast, in a stock deal an average (median) bidder with a CEO contract earns a three-day CAR 0.45% (0.31%) lower than its counterpart in the non-contract group. However, the difference is not significant. The same pattern is also observed in the five-day announcement returns, although the difference in CAR is only significant at the median in cash deals.

Hansen (1987) and Officer, Poulsen and Stegemoller (2006) suggest that bidders are more likely to use stock payments to share the potential risk of overvaluation with their target shareholders when information asymmetry concerning the prospects of the targets is higher. Moreover, the bidding price is less transparent to

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[30] Asquith, Bruner, and Mullins (1987), Huang and Walkling (1987), Travlos (1987), and Heron and Lie (2002) find that stock deals are associated with negative buyer announcement returns and cash deals are zero or slightly positive.

the market in stock deals than in cash bids, and hence the information asymmetry between the acquiring managers and the market regarding how much is actually paid is higher. As the degree of information asymmetry reduces in the cash deals, the market should be better able to estimate the value of the acquisitions. The result that in a cash deal, where the information asymmetry is to some extent reduced, the market responds more favorably to deal announcements by CEOs with contracts provides additional support for the incentive effect hypothesis.

Table 6.8 analyses acquirer BHAR based on means of payment. Consistent with Loughran and Vijh (1997) and Mitchell and Stafford (2000), cash deals yield higher bidder post-acquisition abnormal returns than stock deals. This is true for both value-and equally-weighted benchmark portfolio returns and across all three event windows.

The first panel deals with the value-weighted benchmark portfolio returns. Consistent with the full sample results, within one year of the transaction, no difference in performance is discerned between bidders with and without CEO contracts across both means of payment. By the third anniversary, however, bidders in the contract-group on average perform significantly better than their non-contract peers in cash bids. For example, the contract group earns a mean (median) three-year BHAR of 74% (8.7%), compared to only 12.3% (-3.4%) for a non-contract bidder. The mean difference in returns of 61.8% is both statically and economically significant, while the difference in median returns is not significant. Through the fifth

anniversary, acquirers with contracts retain a better performance than those without contracts in cash deals, although the superiority is only significant at the median.

In stock deals, the contract group consistently fares better over the three to five year windows. For instance, an average (median) acquirer with a CEO contract attains a three-year BHAR of 25.1% (-6.7%), which is substantially higher than the mean (median) return of an acquirer without contract at 2.52% (-16.8%). And an acquirer in the contract group earns a mean (median) five-year BHAR of 86.7% (-13.3%), which is larger than the mean (median) five-year returns earned by an acquirer in the non-contract group at only 12.6% (-19.5%). Nonetheless, this better performance by the contract group is only statistically significant in the mean over the five-year window.

The second panel presents results where the benchmark portfolio returns is equally weighted. Results are qualitatively the same as those with the value-weighted benchmark returns.

In sum, across both means of payment, I find no support for the entrenchment effect hypothesis. Instead, I find that acquirers who contract with their CEOs fare much better than the non-contract sample over the three- to five-year period, in both cash and stock deals. This supports the incentive effect hypothesis that contracts mitigate managerial myopia and encourage value-maximizing decisions. In particular, this incentive effect of contracts is even stronger in cash acquisitions. Combined with the results on acquisition premiums, our evidence regarding acquirer BHAR shows that in cash deals where the problem of overpayment is likely to be especially high, employment contracts function most effectively in mitigating managerial myopia,

motivating acquiring CEOs to pay lower premiums to target shareholders and undertake acquisitions that create more shareholder value in the long run. These results provide further support of the incentive effect hypothesis.

We draw similar conclusions from the test results using acquirer post-acquisition CAR. As shown in Table 6.9, in cash deals, firms with CEO contracts fare significantly better than the non-contract bidders over three to five years following the acquisitions. No superior performance is discerned for the contract group over the one year window though. This pattern holds for both value- and equally-weighted benchmark portfolio returns. For example, the contract group experience a mean (median) one-year CAR of 8% (4.5%) relative to the value-weighted benchmark portfolio. This is insignificantly different from the one-year CAR earned by the non-contract group of 5.7% (4.7%) at the mean (median). However, over the three years bidders with contracts gain an average (median) CAR of 26.7% (15.3%), which is significantly larger than the mean (median) CAR of 10.3% (4.1%) attained by the non-contract sample. The contract group maintains a better performance through the fifth anniversary of the transactions. Acquirers with contracts exhibit an average (median) five-year CAR of 35.3% (22.9%). This is significantly higher compared to the mean (median) five-year CAR earned by the non-contract subsample of 22.9% (5.2%).

In the stock deals, bidders with contracts fare better than their peers without contracts over both three- and five-year windows, yet the return differences are not statistically significant.

Table 6.10 presents the results of four-factor model regressions and calendar time portfolio returns categorized by means of payment. The contract group appears to earn higher abnormal returns compared to the non-contract group across both mediums of payment and regardless of the value- or equally-weighted portfolio returns. However, the difference is not statistically significant. To be more specific, for the value-weighted calendar portfolios in cash deals, acquirers with contracts earn an average monthly abnormal return of 0.94% while the non-contract bidders an average of 0.55%. The monthly return difference of 0.36% is equivalent to 4.32% per year. The monthly return difference increases considerable over the three-year window. The contract portfolio now delivers a monthly abnormal return of 0.92% (equivalent to 11% per annum and 33% over the three years), compared to only 0.39% for the non-contract portfolio (equivalent to 4.7% per year and 14% over three years). The difference in monthly abnormal returns across the two portfolios is 0.58% (equivalent to 7% per annum and 21% over three years), which is non-trivial in economic terms but not statistically significant. Over the five-year event window, however, the monthly return difference attenuates to as low as 0.17%, which amounts to only 2% per annum and 10% over 60 months. This pattern holds for equally-weighted portfolios as well. And in stock deals, we find similar results.

This section tests the incentive effect vs. entrenchment effect hypotheses and studies the impact of CEO contracts on value-creation in acquisitions across the medium of payment. The test results show that regardless of the means of payment, acquirers with CEO contracts pay lower premiums and experience higher long-run

post-acquisition abnormal returns. This supports the incentive effect hypothesis and stands counter to the entrenchment effect premise. Moreover, these results are even stronger in cash deals where the risk of overpayment is likely higher. This incentive effect of CEO contracts is robust to different proxies of acquisition profitability, to a variety of return metrics and model specification, as well as to different weighting schemes in portfolio construction.

6.2.3. Mergers vs. Tender Offers

This section investigates whether employment contracts motivate CEOs to make better investment decisions, categorized by modes of acquisitions, *e.g.*, mergers and tender offers. Mergers are transactions identified as a merger by SDC. Tender offers are transactions explicitly identified by SDC as tender offers. Table 6.11-6.15 examines the relation between CEO contracts and value-creation to acquiring shareholders across mergers and tender offers.

Table 6.11 focuses on acquisition premiums. In mergers, acquiring CEOs with contracts pay an average (median) premium of 38.3% (34.2%), while the non-contract managers pay a higher premium of 42.3% (37.8%). In tender offers, the contract sample pays a premium of 52.4% (48.4%) at the mean (median), while the non-contract group pays an average (median) premium of 50.8% (50.9%). It appears that contracts help reduce the purchase prices for acquirers in mergers but not in tender

offers. This is further support for the incentive effect hypothesis. Since mergers provide more opportunities for acquiring managers to pursue private benefits at shareholder expense, these results suggest that the incentive effect of contracts is more effective in mergers where the agency problems of acquiring mangers are likely more prevalent and severe. However, the difference is not significant. Interestingly, it appears that in mergers acquirers pay less in acquisition premiums compared to tender offers. This is so in both the full sample as well as the two subsamples. Nonetheless, the differences are not statistically significant.

Table 6.12 presents acquirer announcement returns across both types of acquisitions. It shows no significant difference in CAR between the two groups regardless of the modes of acquisitions.

Table 6.13 provides the analysis of bidder BHAR. Within one year following the acquisitions, no differences in firm performance are observed between the two groups regardless of the modes of acquisitions. However, in mergers, bidders with CEO agreements substantially outperform their peers without contracts three years following the acquisitions. In comparison, no difference is observed in tender offers. These results remain true whether the benchmark portfolio returns are value- or equally-weighted. Take the value-weighted benchmark portfolio returns for an example. In mergers, bidders with contracts exhibit a one-year post-acquisition abnormal return of 7.9% (0.5%) at the mean (median). The non-contract group earns an average (median) one-year return of 8.7% (-1%). The difference between the two groups is very slim and insignificant, *i.e.*, -0.2% at the mean and 0.6% at the median.

Over the three years following the acquisitions, however, acquirers with CEO contracts perform far better than their non-contract counterparts. The contract groups earns an average (median) three-year abnormal return of 46.5% (-3.6%), compared to only 6.2% (-13.3%) obtained by the non-contract group. The differences in mean (median) returns of 40.3% (9.7%) between the two subsamples are substantial and statistically significant. The contract group maintains this superior performance through the end of the fifth years following the transactions, although the difference in five-year returns is only significant at the median. In tender offers, on the other hand, no significant differences in returns are discerned over all event windows.

Shleifer and Vishny (1988) note that friendly mergers provide greater opportunities for acquiring managers to pursue personal objectives at shareholder expense. Consistent with their notion, Kisgen, Qian, and Song (2006) conclude that Fairness Opinions (a third-party evaluation of the fairness of an acquisition, in particular with regard to price) are more likely to be used by acquiring boards in friendly mergers, because mergers are more likely to be driven by bidding managers seeking private benefits at shareholder costs. Panel C thus suggests, when the conflict of interests between acquiring managers and shareholders is severe, CEO contracts are more effective in alleviating such a conflict. This provides additional support for the incentive effect premise.

Results regarding acquirer CAR are presented in Table 6.14. It shows the same evidence we see in Table 6.13. More specifically, acquirers with contracts gain an average (median) one-year post-acquisition return of 6.4% (4.4%) relative to their

value-weighted benchmark portfolio. This is not significantly different from the one-year return earned by the non-contract sample, *i.e.*, 5.7% (2.31%) at the mean (median). Over the three years following the acquisitions, however, the contract group attains a mean (median) abnormal return of 17.7% (9.2%), which is far larger than the average (median) return of 7% (3.3%) earned by the non-contract group. The difference is highly significant. Moreover, through the fifth anniversary of the acquisitions, bidders with contracts earn an average (mean) abnormal return of as high as 28.3% (15.3%), which is significantly larger than that of 18.7% (8.2%) gained by their non-contract peers. For the equally-weighted benchmark portfolio returns, results remain the same. In comparison, no significant differences in returns between the contract and non-contract groups are seen across all three windows for tender offers. Thus, Table 6.14 further corroborates the incentive effect hypothesis and indicates that contracts encourage CEOs to conduct value-maximizing acquisitions, and this incentive effect is especially strong in mergers where the potential agency costs are higher than in tender offers.

Table 6.15 scrutinizes the calendar time portfolio returns based on modes of acquisitions. Panel A studies mergers. For the value-weighted portfolio returns, the contract group does not perform considerably better than the non-contract group within one year after the transactions. However, bidders with CEO contracts have higher monthly average abnormal returns over three years following the acquisitions. The contract group earns a monthly abnormal return of 1.21% (equivalent to 14.5% annually and 43.5% over three years), compared to only 0.65% (equivalent to 7.8%

per annum and 23.4% for three years) for the non-contract group at the third

anniversary of the deals. The return difference of 0.59% (equivalent to 7.1% per

annum and 21.2% accumulated over three years) is substantial and highly significant.

Through the end of the fifth year following the acquisitions, the contract group

continues performing far better than its non-contact counterparts, although the

monthly return difference of 0.31% (equivalent to 3.7% annually and 18.6% over five

years) is only significant at the 11% significance level.

In comparison, I find no difference across the contract and non-contract groups

in tender offers. Consistent with the results in Table 6.13 and Table 6.14, evidence on

calendar portfolio returns shows that the incentive effect of employment contracts is

substantial in friendly mergers but non-existent in hostile tender offers. For the

equally-weighted calendar time portfolio returns, however, I find no difference in

acquirer returns across the two groups. It hence suggests that the incentive effect of

contracts is most powerful and pronounced for relatively large companies.

6.2.4. Section Summary

Overall, results regarding value-creation provide support for the incentive

effect hypothesis. Specifically, I find that CEOs with employment agreements are

more likely to pay lower acquisition premiums for their targets and engage in

acquisitions that generate higher long-run post-acquisition abnormal returns, compared

to managers without contracts. This incentive effect of contracts are more pronounced in cash deals where the problem of acquirer overpayment is more prevalent than in stock deals, and in mergers where the agency costs to acquiring shareholders are substantially larger than in tender offers. This further supports the incentive effect hypothesis. I find no evidence consistent with the entrenchment effect hypothesis that contracts entrench CEOs and give rise to sub-optimal acquisition decisions.

Thus far, we have concentrated on the impact of CEO contracts on value-creation in acquisitions. The next section analyzes the other dimension of acquisition decisions, that is, the effect of CEO contracts on managerial risk-taking preference in M&A. More specifically, it attempts to address the following question: do CEO contracts encourage or discourage mangers to take more risk?

6.3. CEO Contracts and Managerial Risk-Taking

This section examines the risk preferences of acquiring CEOs across the contract and non-contract groups. The incentive effect hypothesis predicts that employment agreements protect CEOs against downside risk and encourage managerial risk-taking. The entrenchment effect hypothesis states that managers with contracts may prefer a quiet life and are reluctant to take risk.

Acquisition risk is not directly observable *ex ante*, and every risk measure is prone to criticism. I attempt to overcome the individual shortcomings of the proxies by

using a range of previously studied variables in the analysis. These include the relative size of individual deal value with respect to acquirer market capitalization and whether the acquirer and the target share the same industry. The larger the relative size, the more difficult it might be for the acquirer to integrate the target into its own operations and realize the potential synergies. Acquisitions of targets from a different industry may be more likely associated with higher information asymmetry and uncertainty, owing largely to the possibility that acquiring managers may have less industry-specific knowledge of the targets.

To address the concern that deal size and diversification sometimes approximate agency problems and empire building in acquisitions (*e.g.* Jensen (1986), Grinstein and Hribar (2003) and Morck, Shleifer and Vishny (1990)) other proxies are examined as well. These include the growth options of target firms proxied by the R&D expenditures to fixed assets (PP&E) and Tobin's *q* (Datta *et al.* (2001) and Coles, Daniel and Naveen (2006)), and changes in acquirer risk following acquisition (Datta *et al.* (2001) and Agrawal and Mandelker (1987)). Relative deal size, the ratio of target R&D expenditure to PP&E, target Tobin's *q*, and changes in acquisition risk are positively associated with acquisition risk, while the dummy variable of whether the acquirer and target share the same industry is negatively related to acquisition risk. The following sub-sections discuss test results based on these risk measures.

6.3.1 Target Risk

Table 6.16 contains risk measures based on uncertainty and risks associated with targets. As previously defined, relative deal size is the ratio of each transaction value to the acquirer market capitalization four weeks prior to the announcement. For the full sample, an average (median) target acquired is 33% (14%) as large as the acquirer. The average is considerably higher than the median target relative deal size, meaning that there exist a few extremely large targets in our sample. This is also true for both the contract and non-contract groups. It appears that the targets purchased by acquiring CEOs with contracts are 37% (15%) as large as their acquirers on average (at the median). This size ratio is significantly higher than that of targets acquired by bidders without CEO contracts, which is 29% (14%) at the mean (median). Therefore, consistent with the incentive effect hypothesis, we find that bidder CEOs with employment contracts tend to acquire targets with larger deal size relative to acquirer market capitalization and hence take on more risk compared to the non-contract CEOs.

The same 2-digit SIC code is a dummy variable, which equals one if the acquirer and the target have the same 2-digit SIC code. The same Fama-French industry refers to a dummy variable equaling one if both the buyer and the target belong to the same Fama-French industry. About half of targets in the full sample share the same 2-digit SIC code with their acquirers. Approximately 46% of the targets acquired by the contract group and 53% by the non-contract group have the

same 2-digit SIC code with their purchasers. The difference in these percentages across the two groups (*i.e.*, 7%) is significant. A similar pattern holds for the Fama-French industry classifications. Overall, 69% of the targets purchased by the entire sample are within the same Fama-Fennch industries as their acquirers. Sixty-six percent (66%) of the targets acquired by the contract group share the same Fama-French industry with their bidders. This ratio is significantly lower than 73% for the non-contract sample. Thus, the results show that acquiring CEOs with employment contracts are more likely to acquire targets from a different industry and hence engage in higher risk compared to their peers without contracts.

An average (median) target purchased by the full sample has R&D expenditure to PP&E ratio of 76% (25%). The huge difference between the mean and median indicates that a couple of these targets are investing aggressively in their research and development relative to fixed assets. CEOs with contracts tend to purchase targets with an average (median) R&D to PP&E ratio of 93% (31%), which is significantly higher than the mean (median) ratio of 65% (19%) for the non-contract acquirers. It is thus evident that acquiring CEOs with contracts are more likely to acquire targets with higher research and development expenditure relative to investments in fixed assets, and hence engage in acquisitions with higher *ex ante* uncertainty and risk compared to the non-contract sample.

Table 6.16 has demonstrated that CEOs with contracts tend to conduct acquisitions with a larger relative deal size, to acquire targets in a different industry, and to purchase firms with more growth opportunities as proxied by the ratio of target

R&D to PP&E. No difference in Target q is observed. The incentive effect hypothesis predicts that CEOs with contracts are motivated to purchase riskier targets with more growth opportunities, as proxied by a higher Tobin's q. Alternatively, to the extent that Tobin's q also captures the market valuation of a firm, managers with contracts may acquire (riskier) targets less favored by the market as proxied by a lower q (*e.g.*, due to most recent underperformance), but that may have attractive prospects under the new management. Thus, no significant difference in target q may be discerned.

So far, I have examined the relation between CEO contracts and the uncertainty and risk associated with targets. The next section focuses on the impact of CEO contracts and changes in acquirer risk following the acquisitions.

6.3.2. Changes in Acquirer Risk

Table 6.17 analyses changes in acquirer risk pre- versus post-acquisition. Following Datta *et al.* (2001) and Agrawal and Mandelker (1987), the change in acquirer risk is measured as the change in the standard deviation of acquirer stock returns pre- versus post-acquisitions. The standard deviation of bidder stock returns is computed during two time periods: the post-acquisition period is from 11 to 70 days following the effective date and the pre-acquisition period is from 120 to 61 days prior to the announcement. The change in the standard deviation is then the post-acquisition

period standard deviation minus the pre-acquisition period standard deviation.[31]

ΔStdev.Raw is the change in the standard deviation of raw stock returns of the

acquirer. ΔStdev.VW (ΔStdev.EW) is the change in the standard deviation of acquirer

stock returns net of the CRSP value (equally)-weighted index return. On average,

acquirers with CEO contracts experience a larger increase in risk (0.05%) relative to

value-weighted CRSP index return than firms without such pacts (-0.08%). The

median difference, however, is not significant. Results are qualitatively the same for

ΔStdev.Raw and ΔStdev.EW.

I also measure acquirer risk changes as the differences in acquirer growth

options proxied by acquirer q ratio, capital expenditure-to-assets and capital

expenditures-to-PP&E ratio. The changes are defined as the ratio measured at the

fiscal year end two years after the effective date minus that measured at the fiscal year

end prior to the announcement.[32]

Two years after the transactions, both the full sample and the contract and non-

contract subsamples have experienced declines in all three ratios, i.e., acquirer Tobin's

q, acquirer capital expenditure to total assets and acquirer capital expenditure to

PP&E. However, bidders with CEO accords experience a significantly smaller

reduction in all the three ratios than bidders without contracts. This suggests that

bidders with CEO contracts experience a significantly smaller reduction in their

growth opportunities and risks two years following the acquisitions. Thus the evidence

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[31] Results based on alternative definitions of pre- and post-acquisition periods are qualitatively similar.
[32] Results based on three years following the effective date remain the same.

is consistent with the incentive effect hypothesis that CEOs with contracts are more motivated to take on risk.

6.2.4. Section Summary

This section discusses the test results on acquirer risk-taking behavior. I find no evidence that employment agreements entrench CEOs who avoid risky investments. In fact, acquiring managers with contracts are more prone to riskier deals than their peers without agreements, consistent with the incentive effect hypothesis that contracts encourage managerial risk-taking.

6.3. Summary

This chapter discusses the univariate test results regarding the impacts of CEO contracts on both value-creation and managerial risk-taking behavior in M&A. I have shown consistent evidence in support of the incentive effect hypothesis, and have found no evidence whatsoever supportive of the entrenchment effect hypothesis. More specifically, I find that acquirers with CEO contracts tend to pay lower acquisition premiums to target shareholders, and engage in acquisitions that deliver considerably higher post-acquisition long-run performance than bidders without contracts.

Furthermore, CEO contracts are more effective in mitigating managerial myopia, aligning managerial incentives with acquiring shareholders and encouraging value-maximizing acquisition decisions in mergers. Since friendly mergers provide more opportunities than hostile tender offers for acquiring managers to pursue personal benefits at acquiring shareholder costs, this evidence shows that contracts function most effectively in reducing agency costs where these costs are likely large. It further supports the incentive effect hypothesis. I find no evidence that contracts entrench managers and lead to bad acquisition decisions.

Regarding acquirer risk-taking preferences, I find that acquiring CEOs with contracts tend to acquire targets with larger market value relative to their acquirers' market capitalizations. They are more likely to acquire targets from a difference industry and targets with larger growth options, uncertainty and risk. Furthermore, over two to three years following the acquisitions, acquirers with CEO contracts experience lower reductions in risks compared to the non-contract sample. All these are consistent with the prediction of the incentive effect hypothesis that contracts encourage mangers to take more risk. I find no support for the entrenchment hypothesis that contracts merely entrench mangers, and lead them to prefer a quiet life and avoid risk. The next chapter presents results regarding the multivariate tests.

Chapter 7

MULTIVARIATE TEST RESULTS

7.1 Introduction

This chapter develops a multivariate linear model to test the relative impact of the two competing theories on value-creation to acquiring shareholders. Both acquirer post-acquisition BHAR and CAR are analyzed. Finally, I investigate the industry effect on firm value-creation. A detailed discussion of the results follows.

7.2. The Model

The univariate analysis in Chapter 6 demonstrates a significant and positive effect of CEO employment agreements on value created to acquiring shareholders. Acquirers with CEO contracts tend to pay lower premiums to their target shareholders and engage in deals creating greater value to acquiring shareholders over the long run, compared to acquirers without these contracts. The control variables included in the multivariate regression model are chosen based on theoretical and empirical evidence.

The dependent variables measuring acquirer post-acquisition abnormal returns are one-, three- and five-year BHAR and CAR, where the benchmark equals the value-weighted return on a matched size-and-BM portfolio. The independent variables

include the contract status dummy, which equals one if the CEO conducting the

acquisition has an employment contract and zero otherwise. It represents the impact of

CEO employment contract on acquirer post-event stock performance. The control

variables have been shown in prior literature to affect the post-event acquirer stock

returns and are defined in Appendix and Table 4.2. All accounting variable are

measured at the fiscal year end preceding the acquisition announcements. The linear

regression model is as follows

$$R_i = \alpha + \beta_1 Contract_i + \beta_2 Size_i + \beta_3 Tobin'sq_i + \beta_4 Leverage_i$$

$$+ \beta_5 FCF_i + \beta_6 CapexPP\ \&\ E_i + \beta_7 RelDealVal_i$$

$$+ \beta_8 Cash_i + \beta_9 CAR(-2,+2)_i + \beta_{10} Tender_i + \beta_{11} Options_i$$

$$+ \beta_{12} Private_i + \beta_{13} Subsidiary_i + \beta_{14} G_i + \varepsilon_i \qquad (7.1)$$

where R is either acquirer post-acquisition BHAR or CAR. Contract is the contract

status dummy defined above; Size is firm size defined as the natural logarithm of

acquirer total assets at the fiscal year prior to the announcement; Tobin's q is the q

ratio of the acquirer define as the market value of assets to book value of assets;

Leverage is the leverage ratio equaling the ratio of long-term debt and debt in current

liabilities to market value of assets; FCF is free cash flow ratio defined as operating

income before depreciation net of interest expense, income taxes and capital

expenditures divided by book value of total assets; it measures the free cash at hand for the managers; CapexPP&E is the ratio of capital expenditures to fixed assets including net property, plant and equipment; RelDealval is the relative deal size equaling the value of the transaction divided by acquirer market capitalization four weeks prior to the announcement date; Cash is a dummy variable that equals one if the deal is financed 100% with cash and zero otherwise; CAR(-2,+2) is the five-day announcement cumulative abnormal returns where the benchmark is the value-weighted CRSP index return; Tender is an index equaling one if the deal is identified by SDC as a tender offer and zero otherwise; Options is the options based executive compensation defined as the total value of stock options granted in the previous fiscal year divided by the total compensation in the same year; Private equals one if the target is a private company and zero otherwise; Subsidiary equals one if the target is a subsidiary and zero otherwise; G is the Gompers *et. al* (2003) governance index defined previously.

The regression equation 7.1 is estimated based on the White (1980) heteroskedasticity-consistent standard errors in order to control for the potential heteroskdasticity in observations.

7.3. Results

This section provides a detailed discussion of the results of the multivariate regressions. First, I will analyze the impact of CEO contracts on acquirer post-acquisition BHAR, and then I focus on acquirer CAR. Tables 7.1 and 7.2 summarize the test results

7.3.1. Acquirer Post-Acquisition BHAR

Table 7.1 presents a cross-sectional regression analysis to examine the relation between CEO employment contracts and acquirer post-event BHAR. The dependent variable is the one-, three- and five-year BHAR, where the benchmark equals the value (equally)-weighted return on a matched size-and-BM portfolio.[33] Model 1 is the univariate regression of BHAR on the contract status dummy. Model 2 is the multivariate regression of BHAR on the contract dummy and the control variables except the G-index. Prior literature has interpreted the G-index as a proxy for corporate governance quality and managerial entrenchment (*e.g.*, Gompers *et al.* (2003), Masulis *et al.* (2006), and Harford *et al.* (2006)). To control for this effect, Model 3 includes the G-index as an additional regressor. The *t*-statistics based on White (1980) heteroskedasticiy-consistant standard errors are reported in the parentheses.

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[33] Results based on five-year horizon are qualitatively similar to those based on three-year horizon.

Panel A presents results using the value-weighted benchmark portfolio returns. The univariate regression of one-year bidder BHAR on the contract dummy shows that acquirers with CEO contracts do not outperform their counterparts without such agreements within one year. However, over three years, the contract dummy is positive and highly significant in explaining bidder BHAR. Acquirers with CEO contracts continue faring better till the fifth anniversary although the superiority is not significant at the end of year five. The evidence suggests that employment contracts encourage managers to make acquisitions that generate larger shareholder value in the long run, but may not necessarily lead to better returns in the near term. Holding other things equal, upon entering into a contract with its CEO an acquirer who used not to have such a contract will decrease its one-year post-acquisition return by 1%, but augment its return over three years by 37%, and increase its return over five years by 40%. These are consistent with the univariate test results in Chapter 6.

Models 2 and 3 are multivariate regressions. In Model 2, Size is negatively related to bidder BHAR over all three horizons. However, after controlling for the G-index, it is insignificant. These results are consistent with prior findings that firm size is either negative or insignificant in explaining bidder post-acquisition returns.

Tobin's q is positively related to one-year BHAR, indicating that the higher the pre-event stock price of the bidder, the higher its short-term returns. A 1% increase in Tobin's q leads to a 0.10% increase in acquirer post-acquisition one-year abnormal return holding all other control variables unchanged. However, this relation is not robust over longer horizons. Over the three to five years following the acquisitions,

Tobin's q is not significantly related to acquirer BHAR. Rau and Vermaelen (1998)

find that "value" buyers (high book-to-market or low q) outperform "glamour"

acquirers (low book-to-market or high q) over the three years following the

transactions. They interpret this finding as evidence that both the market and the

management overextrapolate the bidder's past performance as proximated by a high q

ratio when they assess the desirability of an acquisition. That is, managers who

previously perform better are more subject to hubris and subsequently make bad

acquisition decisions. They also argue that this performance extrapolation hypothesis

is consistent with the fact that in the short run, stock prices of glamour bidders

increase much more than stock prices of value bidders around the announcement of

the acquisition (Lang *et al.* (1989), Servaes (1991)).This is consistent with my finding

that a higher Tobin's q leads to higher acquirer BHAR over the short run (i.e., within

one year). However over the three to five years following the acquisitions, no such a

relation exists.

The more free cash flow a firm has, the lower its one-year BHAR, implying

that acquisitions driven by excess cash destroy shareholder value (Lang, Stulz, and

Walkling (1991), Harford (1999), and Jensen (1986)). However this relation does not

hold up over the three to five years following the deals. While Loughran and Vijh

(1997) and Mitchell and Stafford (2000) document a better performance of cash deals,

I find an insignificant relation between cash deals and BHAR. This is, however,

consistent with Heron and Lie (2002), who conclude that the method of payment is not

related to acquirer future operating performance. Consistent with previous findings

that tender offers create value for bidders, tender offers result in higher acquirer one year BHAR.[34] However, in the long run, tender offers are not significant in determining bidder abnormal returns, which is similar to Healey, Palepu, and Ruback (1997). They find that hostile deals are associated with insignificant improvements in bidder returns, owing possibly to the payment of higher acquisition premiums. Bidders purchasing a subsidiary target fare better.

Datta *et al.* (2001) find a positive relation between acquiring managers' stock-options based pay and bidder long-run stock performance. Surprisingly, stock-options based compensation is negatively related to bidder BHAR, indicating that the more options incentives offered to top executives, the less value created in acquisitions. Nevertheless, it is not significant once the G-index is included. The G-index is negatively associated with BHAR, which is consistent with Masulis *et al.* (2006). They find a negative relation between the G-index and acquirer *announcement* returns and conclude that more entrenched managers destroy more value in acquisitions. However, the G-index is not significant in my tests of post-acquisition BHAR.

After including the control variables, the contract dummy is positively related to one-year BHAR, albeit at a marginal level. However after the G-index is included, this positive relation is not significant any more. In comparison, contract is positive and highly significant in explaining bidder three-year BHAR. This positive and significant relation holds through the end of the fifth year following the acquisitions. In Model 2 without consideration of G-index, changing from having no CEO contract

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[34] See, *e.g.*, Asquith *et al.* (1987), Loughran and Vijh (1997), Rau and Vermaelen (1998), Lang *et al.* (1989), and Jarrell and Poulsen (1989).

to having one, an acquirer improve its post-acquisition stock returns by 27% over the three years and 95% over the five years after the deals. Once G-index is considered in the regressions as in Model 3, the magnitude of return improvement for acquirers entering into CEO contracts is reduced. An acquirer with a contract now earns a three-year abnormal return 15% larger than its peers without CEO contracts and a five-year return 9% higher than bidders without contracts. However, contract status is only significant for the three-year return. Overall, the evidence regarding acquirer post-acquisition BHAR is consistent with the incentive effect hypothesis that CEO contracts help alleviate myopia and motivate acquisition decisions that create larger shareholder value but may require a long wait. These regression results are consistent with the evidence presented in the univariate test results as well.

It also appears that contract dominates both the G-index and the stock options-based executive compensation in explaining bidder BHAR, since neither of the latter two is significant. It suggests that the positive relation between contracts and acquirer post-acquisition abnormal returns is not driven by the positive relation between contract and the stock-options based pay. The results also indicate that the G-index is not an important determinant of bidder long-term post-acquisition abnormal returns.

A private target is largely positively associated with acquirer BHAR, although the relation is not significant. In comparison, a subsidiary target is significantly and positively related to acquirer post-acquisition abnormal returns across the event windows. These confirm prior findings that acquirers who purchase either private or subsidiary targets tend to perform better following the acquisitions.

Panel B provides the regression results using equally-weighted benchmark

returns, which are largely the same as those in Panel A based on the value-weighted

benchmark portfolio returns. More specifically, acquirers with CEO contract earn a

one-year post-acquisition abnormal return 2% lower than firms without CEO contracts

in the univariate regression. Over the three years in contrast, bidders with contracts

earn a return 36% larger than firms without contracts. This better performance remains

and becomes 38% at the fifth anniversary of the transactions. However, the association

between CEO contracts and acquirer post-event returns is only significant for the three

year returns. After controlling all other variables, contracts are positively related to

acquirer returns. This positive association however is only significant in the long run

(*i.e.*, three to five years) but not in the short term (i.e., one year). This finding again is

consistent with the incentive effect hypothesis that contracts reduce managerial

concerns over the short-term firm gains and encourage them to maximize shareholder

wealth in the long run.

7.3.2. Acquirer Post-Acquisition CAR

Table 7.2 provides regressions analysis of acquirer post-acquisition CAR over

the one-, three- and five-year window following the acquisitions. The dependent

variable is now acquirer post-acquisition cumulative abnormal return (CAR), where

the benchmark is the value (equally)-weighted return on a matched size and book-to-

market reference portfolio. Table 7.2 shows very similar results to those on acquirer BHAR in Table 7.1. Panel A of Table 7.2 deals with the value-weighted benchmark return and Panel B focuses on the equally-weighted benchmark.

Univariate tests in Panel A of Table 7.2 shows that CEO contracts are not significant in explaining the one-year post-acquisition abnormal returns; however, contracts are positive and significantly related to the three- and five-year CARs. For example, acquirers with contracts earn a three-year post-acquisition CAR 9% higher than acquirers without these contracts. Note that this return differential between the contract and non-contract groups is smaller in magnitude compared to the results on BHAR. When all control variables except the G-index are included in the regression as shown in Model 2, CEO contracts remain significant and positive in explaining acquirer CAR. Now an acquirer with a contract gains a three-year CAR 14% higher and a five-year CAR 11% higher than its non-contract peer. After controlling for the G-index, CEO contracts remain positive in explaining bidder post-acquisition abnormal returns. However, this relation is only positive for the three-year CAR. The G-index is not significant in explaining acquirer CAR across all three windows. The regression results on all other control variables are qualitatively the same to those for BHAR in Table 7.1.

Panel B analyzes acquirer CAR where the benchmark portfolio returns are equally-weighted. Results are similar to those in Panel A. For the purpose of parsimony, I do not discuss them in details here.

7.3.3. Section Summary

In summary, the regression analysis provides support for the incentive effect hypothesis. CEO contracts are not important in explaining bidder post-acquisition abnormal returns in the short run, *i.e.*, over the one-year window. On the contrary, contracts are positive and highly significant in determining acquirer long-run post-acquisition abnormal returns, *i.e.*, over the three to five years following the acquisitions. And this relation is robust to different return metrics, event windows, control variables and the benchmark portfolios. This further confirms the prediction of the incentive effect hypothesis. Since CEOs with employment contracts may be less subject to the problem of short-termism, they are more inclined than their non-contract peers to choose acquisitions that create more shareholder value in the long run but may not necessarily perform better in the short run.[35]

7.4. Industry Effect

Mitchell and Mulherin (1996) document substantial variations in takeover activity across industries, indicating that much of the takeover activity in the 1980s was driven by broad and fundamental factors such as industry shocks. Mulherin and

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[35] Results using alternative benchmarks are qualitatively similar, *e.g.*, the size-BM-and-momentum reference portfolio returns similar to Daniel, Grinblatt, Titman, and Wermers (1997).

Boone (2000) confirm this result for the restructuring activity during the 1990s. Moreover, it is commonly recognized that firms follow industry norms in establishing compensation contracts of their top management. In general, the board of directors resorts to external consultants in deciding on terms and conditions of executive employment contracts. Typically, these consultants set industry medians as the benchmark. It is therefore possible that my results may be driven by industry effect. For example, some industries may be more likely to give their CEOs employment contracts compared to others, and meanwhile such industries also make profitable acquisitions. To account for this possibility, I conduct the industry effect analysis.

Panel A of Table 7.3 presents the cross-sectional variations in acquisition activities across the 12 Fama-French industries. It occurs that among the twelve Fama-French industries, finance service is the most frequent acquirer. Two hundred and forty two acquisitions out of the full sample of 1,083 deals (22.4%) are undertaken by acquirers from the financial service industry. Ranked second is the industry of electronic equipment, which represents 15.3% of the full sample (166 deals). Next are manufacturing industry (11.1%) and healthcare (8.2%). Consumer durables (1.9%) and chemicals (2.8%) have the lowest number of acquisitions.

Some industries appear to have a higher proportion of acquiring CEOs with employment agreements than others. For instance, 68.2% of acquiring CEOs in the telecommunications industry have employment contracts, 55.4% in financial service, 55% in utilities and 54% in energy, compared to only 23.3% in chemicals and 31.7%

in manufacturing. This preliminary evidence suggests that industries differ from each other in their behavior of granting management employment contracts.

The probability tests in Panel B show that indeed there exist significant differences across the 12 industries concerning the ratio of acquisitions made by CEOs with contracts. I hence re-estimate the regression of bidder BHAR and CAR on the presence of CEO contracts controlling for industries.

Table 7.4 shows that after accounting for the potential industry effects, the contract dummy is positive and highly significant in explaining bidder BHAR over all three windows. Further the magnitude of the return differential between the contract and non-contract group (coefficient on the contract status dummy) remains unchanged compared to the regressions without controlling for industries. Panel A of Table 7.4 uses the value-weighted benchmark portfolio returns. It demonstrates that acquirers with CEO contracts gain a three-year post-acquisition BHAR 27% larger than do acquirers without contracts. This differential increases to 99% over the five-year window, which is the same as in Panel A of Table 7.1. Panel B analyzes the impact of CEO contracts on bidder post-acquisition BHAR using equally-weighted benchmark portfolio returns. It shows the same pattern as in Panel A.

Table 7.5 examines acquirer CAR. Panel A focuses on the value-weighted benchmark while Panel B on the equally-weighted benchmark portfolios. Results are qualitatively similar to those regarding BHAR. CEO contracts remain positive and significant in explaining acquirer post-acquisition CAR across all three windows after controlling for the industry effects. Thus, the overall evidence suggests that industries

are not uniform in granting their CEOs employment contracts; however, the positive relation between the presence of CEO contracts and the value-creation to acquiring shareholders is not driven by industry effects.

7.5. Summary

This chapter presents the multivariate regressions analysis of the relation between CEO employment agreements and acquirer post-acquisition abnormal returns. The incentive effect hypothesis maintains that CEO contracts mitigate managerial myopic behavior and encourage them to make investments that maximize shareholder value in the long run. The entrenchment effect hypothesis predicts that CEO contracts merely entrench CEOs and induce them to pursue private interests at shareholder expense in sub-optimal investments. The regressions results show that contracts are positive and highly significant in explaining acquirer post-acquisition abnormal returns over the three to five years following the acquisitions. This significant and positive relation is robust to different return metrics, event windows, benchmark portfolios, a variety of control variables and industry effects. This chapter provides further support for the incentive effect hypothesis. I find no evidence consistent with the entrenchment effect hypothesis.

Chapter 8

SELECTION BIAS AND HECKMAN SELECTION MODEL

8.1. Introduction

This chapter examines the determinants of the use of CEO contracts and addresses the potential self-selection problem in the data using the Heckman (1979) two-stage selection model. I conduct both the probit and logistic regressions predicting whether an S&P CEO has an employment contract or not. The full sample includes all S&P 500 CEO during 1990-2005. I also discuss in detail the implications of the estimates of the probit and logit models with respect to the two competing hypotheses. That is, the incentive versus the entrenchment effect hypotheses.

Given that the choice of a CEO contract is by no means random, I next study the relation between CEO contracts and the value created to acquiring shareholders after adjusting for sample selection bias in the M&A sample. Both the acquirer announcement period returns and post-acquisition abnormal stock returns are analyzed using the Heckman selection model.[36] Based on the regressions results of the Heckman model, I then compare the *actual* acquirer returns to the *forecasts* of those returns should the alternative contract status be true. These analyses shed new light on the relative importance of the incentive versus the entrenchment effect of a CEO contract on managerial behavior. Finally, a chapter summary follows at the end.

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[36] Chapter 5 provides methodology details on the Heckman sample selection model.

8.2. The Determinants of CEO Contracts

This section examines the determinants of the existence of a CEO contract. The incentive effect hypothesis predicts that CEO contracts serve as an incentive mechanism aimed to reduce managerial myopia and to motivate value-maximizing investment decisions. Therefore, the use of contracts should be positively related to the likelihood of managerial myopia as well as the magnitude of shareholder costs of this myopia. In contrast, the entrenchment effect hypothesis asserts that contracts are used to entrench poor-performing CEOs and hence allow managers to pursue private benefits at shareholder expense. Consequently, contracts should be positively related to CEO power and entrenchment, as well as the benefits of entrenchment accrued to executives.

Table 8.1 presents the probit regression results predicting whether a CEO has an employment contract or not. Results are also shown for the logistic regression. The full sample consists of 1,381 different CEOs in position over the period of 1990-2005.[37] Since I require each observation to have all explanatory variables available, the final sample size reduces to 992 CEOs, among which 479 (48.3%) have employment contracts as of the event date and the rest do not. The event date is the appointment date if the CEO is hired with a contract, or the contract date if the

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[37] Some executives may depart their position as the CEO and then be reappointed the CEO of the same firm for multiple times; some executives may become the CEO of another company after serving as the CEO of a different firm. Thus I consider each of these cases as a different CEO observation in my sample.

executive enters into a contract after becoming a CEO. For executives who have no contract during their tenure as a CEO, the event date is the appointment date. The dependent variable is the contract status dummy equaling one if the CEO has an employment contract as of the event date, and zero otherwise.

The explanatory variables include factors considered to affect costs of expected managerial myopia and entrenchment as documented in prior literature. The first column shows the estimates of coefficients based on the probit regression while the second column shows the logistics regression coefficient estimates. I will discuss in detail the probit model results since the logit model estimates are similar.

CEO age is the executive's age in number of years as of the event date. Gillan *et al.* (2006) find that younger CEOs are more likely to have an employment contract. They argue that younger CEOs are subject to greater losses should their firm renege on an implicit agreement; therefore younger executives need an explicit contract to protect themselves against opportunistic behavior on the part of the firm. Cantor (1987) posits that as an executive approaches retirement, he has little concern over his labor market reputation and the market's potential for ex post settling up. In this case, it becomes more difficult to induce appropriate efforts from the manager. However, this moral hazard problem can be solved by giving CEOs shorter-duration contracts. Both Gillan *et al.* (2006) and Cantor (1987) predict a negative relation between CEO age and the use (and duration) of an explicit contract.

Table 8.1 shows that CEO age is, however, positive and significant in determining the existence of a contract, indicating the older the CEO at the initial

appointment, the more likely he is to have a contract, which contradicts both Gillan *et al.* (2006) and the theoretical prediction of Cantor (1987). One explanation for my finding is that older CEOs may have been on the labor market for longer time; they may have a more friendly relation with the Board and a higher leverage over Board decisions. As a result, it is easier for older CEOs to get a contract through their influence on the Board and further entrench themselves. This finding provides support for the entrenchment effect hypothesis.

Alternatively, older CEOs expect to be in the labor market for less time than younger CEOs. A CEO with a shorter horizon is less concerned about the long-run profits of the firm or his reputation. This is because he may depart the firm before the expected gains from a long-run project realize, yet he may have to bear the costs today of the investments (Narayanan (1985)). Therefore older CEOs may have more incentive to behave myopically. As a result, firms may contract with these CEOs in an attempt to align their horizon with the shareholders (contrary to the argument of Cantor (1987)). It is not rare that a CEO employment contract requires a retired CEO to serve as a consultant to his company in exchange for the contractual severance payment. Consequently, CEO severance pay, especially the restricted stocks and stock options, is often tied to the long-run performance of the firm. To some extent, the evidence that older CEOs are more likely to have a contract may be consistent with the idea that contracts are used to mitigate myopia. Therefore, the interpretation of the result regarding CEO age is at best mixed.

Consistent with Rusticus (2005), CEOs aged at 65 or older at the appointment are less likely to have a contract. Since 65 is the normal retirement age of an executive, chances are CEOs appointed at this age often have retired from management position of another company. They are more likely to be successful executive leaders with abundant experiences in running a firm, who may have less incentive to behave myopically in order to demonstrate that they are capable and boost their wages (Narayanan (1986)). In such cases, a contract is of little use in reducing managerial myopia which is very low in the first place. We thus expect a negative relation between the prevalence of a contract and the age65 dummy. On the contrary, the entrenchment effect hypothesis posits a positive relation between the use of a CEO contract and age65, since these executives are in general more experienced, successful and capable managers who have more power over the Board and can easily get themselves a contract to isolate themselves from disciplines on their behavior. The negative coefficient on age65 dummy provides support for the incentive effect hypothesis and contradicts the entrenchment effect premise.

According to Narayanan (1986), the more the CEO's experience with the firm, the lower the uncertainty about his ability, and the smaller the estimation error of his capability. Since his quality can be estimated with a higher precision, an executive with longer tenure (more experience) has little incentive to boost current earnings through underinvestment in the long run and demonstrate he is competent. This reduced uncertainty decreases the likelihood of potential managerial myopia and the need of a contract. Similarly, Berkovitch *et al.* (2000) and Almazan and Suarez (2003)

suggest that dismissal threat due to the large uncertainty about a manager's quality may prevent them from investing in the long term. Managers with longer tenure are subject to lower uncertainty and hence smaller replacement threat. Consequently, these managers are less likely to have a contract. The incentive effect hypothesis therefore predicts a negative relation between CEO tenure and the probability of a contract. Conversely, the entrenchment effect hypothesis posits that a CEO with a longer tenure may have more power over the Board and are more likely to have a contract and entrench himself. Under these circumstances, a positive relation between the CEO tenure and the existence of a contract is expected. Consistent with Gillan *et al.* (2006) and Rusticus (2006), I find that CEO tenure (with the company) is negative and significant in explaining the use of a contract, which supports the incentive effect hypothesis and contradicts the entrenchment effect hypothesis.

An outside CEO has a higher probability of getting a contract compared to an inside hire, consistent with Gillan *et al.* (2006) and Rusticus (2006). An outside CEO is one who has joined the firm within the past three years. Compared to executives with a longer history with the firm, an outside CEO not only has less power over the Board but is also subject to greater uncertainty about his quality, both of which contribute to a larger incentive for the executives to behave myopically in an attempt to impress the Board early. The finding thus shows when a CEO has more incentive for myopia, a contract is more likely to be observed, which lends support to the incentive effect hypothesis. The entrenchment effect hypothesis, on the contrary, predicts a negative relation between an outside CEO and the likelihood of a contract.

An inside CEO is more likely to have a good relationship with and more power over the Board than an outside hire. Given that contracts are used to impede the disciplinary effect imposed on managers by the market for corporate control and internal governance systems, a powerful CEO is more likely to have a contract as the result of his self-serving behavior seeking to avoid discipline of their actions. Therefore, the positive relation between outside CEO and the existence of contracts contradicts the entrenchment effect hypothesis.

Founder CEOs are more likely to have a contract, which is consistent with the entrenchment effect hypothesis that contracts are used by influential CEOs to entrench themselves. However, it is only marginally significant. A CEO who is also the Chairman of the Board of Directors has a higher probability of getting a contract. This is also consistent with the entrenchment effect hypothesis but contradicts the incentive effect hypothesis. Under the incentive effect hypothesis, a CEO who is also Chair of the Board has more power over the Board and is less motivated to behave myopically. If contracts are used to reduce myopia, we expect to observe a negative relation between CEO Chairman duality and contract, which is inconsistent with my finding. In contrast, the entrenchment effect hypothesis predicts a negative relation between the CEO Chair duality and the use of contract, for the more prowess an executive possesses over the Board, the easier and more likely he is to grant himself a contract, isolating himself from the disciplines on his behavior and allowing his rent-seeking actions.

CEOs in firms with larger institution ownership tend to get a contract, as predicted by the incentive effect hypothesis. Prior literature has shown that one of the sources of managerial myopia is the pressure imposed on firm managers by institution investors to show short-term profits. Institution ownership, especially investment by institutions that have high portfolio turnover and engage in momentum trading, is often considered a proxy for the magnitude of managerial myopia (Bushee (1998)). The positive and significant relation between institution ownership and the likelihood of a CEO contract demonstrates that firms are more likely to use a contract when mangers have higher incentive for myopic behavior, which supports the incentive effect hypothesis. Under the entrenchment effect hypotheses, institutional investors provide additional monitoring on management and help discipline managerial behavior. If contracts are used to entrench managers and allow managerial rent-seeking behavior, a negative relation is expected between institution ownership and the use of a contract. My finding thus stands counter to the entrenchment effect premise.

Both the market-adjusted returns and return on assets are negative in determining the use of CEO contracts, indicating that the worse the recent performance of a firm, the higher the probability of a contract. Further, a CEO is more likely to have a contract when the uncertainty about a firm's future performance is higher, *i.e.*, a negative and significant association between stock return volatility and the likelihood of a contract. Due to a higher probability of being fired in a more uncertain and disadvantageous environment, a manager is more likely to sacrifice

long-run gains for short-term ones and boost current earnings. The evidence suggests that firms tend to use contracts to protect managers against downside risk and line up their investment horizons with shareholders when the likelihood of managerial myopia is high, which supports the incentive effect hypothesis. Alternatively, a contract may also reduce managerial incentive to work hard in an adverse and volatile environment, implying that more powerful CEOs may be able to entrench themselves and secure their control benefits through an employment contract when faced with larger uncertainty and recent underperformance. Therefore to some extent, the negative coefficient on firm performance and the positive coefficient on firm return volatility may provide some support for the entrenchment effect hypothesis as well.

Firm size is negatively but insignificantly associated with the use of a CEO contract. According to Stein (1988), managers of large firms are less likely to be fired due to a takeover, since large firms are less likely to be acquired than small firms. Moreover, large firms have more assets and resources under management and are often less affected by temporary fluctuations in firm performance or market conditions. Finally, there is smaller information asymmetry regarding future firm prosperity between large firms and the market than small firms. Consequently, managers of large firms have lower incentive to behave myopically and augment current earnings in order to avoid a potential takeover as well as avoid being fired due to temporary underperformance. The incentive effect hypothesis hence predicts a negative relation between firm size and the probability of a contract. Conversely, the entrenchment effect hypothesis posits a positive relation between firm size and the use

of a contract, for the larger the firm size, the larger the control benefits to its CEO (*i.e.*, larger compensation, higher social prestige, and greater perks, *etc.*), and consequently the larger the managerial incentive for entrenchment. The negative sign on firm size is consistent with the incentive effect hypothesis but inconsistent with the entrenchment effect hypothesis; although the coefficient estimate is not significant.

Tobin's q is positively related to the use of CEO contracts, as is capital expenditure to total sales. Stein (1988) and Knoeber (1986) suggest managerial myopia to be more costly for firms with more investment opportunities. To the extent that Tobin's q and capital expenditure to sales measure growth options, it appears that firms tend to give CEO contracts when the costs of potential myopia are higher. This is consistent with the incentive effect hypothesis. However, the relation between growth opportunities and the use of a contract is statistically insignificant, consistent with Gillan *et al.* (2006).

Leverage ratio is positive but insignificant in accounting for the prevalence of contracts. Since firms with a higher leverage ratio are susceptible to a larger probability of financial distress and have less flexibility in their investments, CEOs in these firms are more motivated to behave myopically. The incentive effect hypothesis thus suggests a positive relation between leverage ratio and a CEO contract, as I find in the data. Alternatively, to the extent that leverage ratio is inversely related to growth options, the incentive effect hypothesis also posits a negative association between a contract and growth options (*i.e.*, the smaller the leverage ratio, the more the growth opportunities, and the higher the probability of a CEO contract). Therefore the

interpretation of the coefficient on leverage ratio can be two-fold. This may be the reason why the coefficient estimate of leverage ratio is not significant, that is, the two opposing effects largely cancel each other.

Results in the logistics regressions are qualitatively similar. In summary, we are more likely to observe a CEO contract if the CEO is less capable or successful (younger than 65), has less experiences and larger uncertainty about his quality (shorter tenure, outside CEO), the pressure to deliver short-term gains is higher (greater institution ownership), the firm has recently underperformed (low market-adjusted return), and the firm is faced with more volatile environment (higher stock return volatility). These findings are consistent with the incentive effect hypothesis that contracts are positively related to the likelihood of managerial myopia as well as to the shareholder costs of this short-sightedness. However, I also find the likelihood of a CEO contract to be higher when a CEO has a shorter horizon (older CEO), and when a CEO is more powerful (Chairman-CEO). These results suggest that the purpose of a CEO contract in some firms is not to maximize shareholder wealth but rather to entrench high-powered mangers and allow them to pursue private interests at shareholder expense. Overall, the majority of the evidence is consistent with the incentive effect hypothesis, yet there is some support for the entrenchment effect hypothesis as well.

8.3. Heckman Two-Stage Selection Model

Given the findings in the previous section that firms give their executives employment contracts selectively in an attempt to achieve certain goals, this section aims to address the sample selection problem in acquirer value-creation using the M&A sample. First I will discuss briefly the model specification, which was detailed in Chapter 5. Second, I examine the first-stage probit model results predicting the existence of a contract for acquiring CEOs. Finally, an analysis of the second stage regressions results including both acquirer announcement returns and acquirer post-acquisition abnormal returns follows.

8.3.1. The Model

Recall that Chapter 5 models the choice of a CEO contract as a function of the net benefits to shareholders of having them:

$$S_i^* = f(B_{ci} - B_{ni}) = Z_i\gamma + \varepsilon_i$$

$$
\begin{aligned}
I_i &= 1 \quad \text{(Contracts used)} && \text{if } S_i^* > 0 \\
&= 0 \quad \text{(Contracts not used)} && \text{o.w.}
\end{aligned}
\qquad (5.3)
$$

The returns to acquiring shareholders are modeled by two switching regimes model:

$$R_{ci} = X_{ci}\beta_c + \varepsilon_{ci} \tag{5.4}$$

$$R_{ni} = X_{ni}\beta_n + \varepsilon_{ni} \tag{5.5}$$

Recall also that equations (5.4) and (5.5) cannot be estimated directly due to a potential selection bias. This bias arises if the errors in equations (5.4) and (5.5) are correlated with the error in equation (5.3). To derive consistent estimates of the parameters in equations (5.4) and (5.5), the Heckman (1979) two-step sample selection model is employed. In the first step, we estimate the choice equation using a probit model with full sample and observations I_i. In the second step, we estimate equations (5.4) and (5.5) by OLS, with an additional explanatory variable computed from the first-step probit estimation, *i.e.*, the inverse Mills ratio to correct for the potential sample selection bias.

Under the incentive effect hypothesis, contracts are used to reduce CEO myopia so that firm value is maximized. Therefore, contracts are used whenever the net benefits of using it are larger than the benefits of not using it. That is, contracts are used ($I_i = 1$ and $S_i^* > 0$, hence ε_i from Equation (5.3) is positive) when profitability of using contracts is high (ε_{ci} in Equation (5.4) is positive). Therefore, ε_i and ε_{ci} are positively correlated, meaning a positive coefficient on the inverse Mills ratio in OLS regression of Equation (5.4). The incentive effect hypothesis also implies that contracts are not used when not using them produces higher profitability than using

contracts. Hence a negative coefficient on the inverse Mills ratio in OLS regression of Equation (5.5) is predicted.

Under the entrenchment effect hypothesis, contracts are used to entrench CEOs and allow managers to pursue private benefits at shareholder expense, thereby leading to sub-optimal investment decisions. Thus contracts are used (I_i=1 and $S_i^* > 0$, hence ε_i from Equation (5.3) is positive) when using them actually reduces firm value (ε_{ci} in Equation (5.4) is negative). Therefore, a negative coefficient on the inverse Mills ratio is obtained in the OLS regression of Equation (5.4). Similarly, the entrenchment effect hypothesis implies that contracts are not used when not using them yields smaller profits. This leads to a positive coefficient on the inverse Mills ratio in OLS regression of Equation (5.5).

The following sections discuss empirical results on the first-stage and second stage regressions and test the relative impact of the two competing theories on value-creation in M&A

8.3.2. First-Stage Results

Table 8.2 provides coefficient estimates of the first-stage probit regressions predicting the probability of a CEO contract. The sample consists of 1,083 acquisitions made by S&P CEOs during 1990-2005. After requiring that each observation have all explanatory variables in both stages available, the final sample

reduces to 531 deals, of which 49.2% (261 deals) are conducted by CEOs with a contract. This ratio is consistent with prior literature (see *e.g.*, Gillan *et al.* (2006) and Schwab and Thomas (2004)) as well as the full sample results in Table 8.1. I find an acquirer tends to use a CEO contract if the CEO is older and hence have a shorter horizon in the labor market, the CEO has a shorter tenure with the firm at appointment, the CEO is hired from outside the company, the firm stock return volatility is higher, the firm is smaller, and the firm has greater growth opportunities as approximated by capital expenditures to sales ratio and leverage ratio. Prior literature suggests that firms with large growth options tend to have lower leverage ratio because they are concerned that high debts might constrain their future growth. Therefore the inverse of leverage ratio is also a proxy for growth opportunities. These findings are consistent with the prediction of the incentive effect hypothesis since contracts are used most often where the likelihood and/or the costs of managerial myopia are high.

Contrary to the finding with the full CEO sample, co-founder CEOs and CEOs who also serve as a Chairman are less likely to have a contract, indicating more powerful CEOs who need less protection on the downside tend to have no contract. This evidence provides additional support for the incentive effect hypothesis and stand in stark contrast to the entrenchment effect hypothesis; although the coefficient estimates are not significant.

Inconsistent with Table 8.1, I find no significant relation between the likelihood of a contract and the following variables: a dummy variable indicating

whether a CEO is older than 65 and institution ownership. Further, I find a positive

relation between market-adjusted returns and the use of a contract, although the

association is merely marginally significant. Finally, Tobin's q is negatively related to

the probability of a CEO contract. To the extent that Tobin' q is a proxy for the

expected future performance of the firm, this evidence suggests that firms whose

future is considered pessimistic by the market are more likely to protect and retain

their CEOs with contracts. This protection may help mitigate managerial myopia in

this adverse environment.

Overall, the majority of the evidence using the M&A sample supports the

incentive effect hypothesis (such as CEO Tenure, Outside CEO, firm stock return

volatility, firm size, leverage ratio and capital expenditure to sales). I do not find

substantial evidence consistent with the entrenchment effect hypothesis.

8.3.3. Second-Stage Regressions: Announcement Returns

Table 8.3 presents the second-stage regressions results of acquirer

announcement returns. The dependent variables are three- and five-day cumulative

abnormal returns around the announcement date (day 0) respectively. Since results

using both event windows are qualitatively similar, I only discuss in detail results on

CAR (-1, +1) for the purpose of parsimony. The first column of each regression model

displays estimation results of the 261 acquisitions made by CEO with a contract as in

Equation (5.4), while the second column on 270 deals made by CEOs without a contract as in Equation (5.5). The *t*-statistics based on the consistent asymptotic standard errors are reported in brackets.

For the contract sample, the market responds more positively to acquisitions made by older CEOs. In comparison, acquirer announcement returns are negatively related to CEO age in the non-contract sample. However, neither estimate is significantly different from zero. Tenure as CEO is the number of years the executive has been the CEO as of the acquisition announcement date. Across both samples, the longer the acquiring CEO remains in current position, the lower the announcement period return. Similarly, CEOs who are also a Chairman have a negative but insignificant impact on announcement returns in both sub-samples. As documented in prior literature, firm size is negatively but insignificantly related to bidder CAR (-1, +1) across both samples. This is because acquisitions made by firms of large size may be driven by motivation for empire building. However, since the coefficient estimates on firm size are not significant, empire building though acquisitions may not be a serious concern for S&P 500 shareholders.

Interestingly, in the sample with CEO contracts Tobin's *q* is negatively related to CAR (-1, +1). This contradicts the performance extrapolation hypothesis of Rau and Vermaelen (1998). Rau and Vermaelen (1998) find that "value" buyers (high book-to-market or low *q*) outperform "glamour" acquirers (low book-to-market or high *q*) over the three years following the transactions. They interpret this finding as evidence that both the market and the management overextrapolate the bidder's past performance as

proxied by a high *q* ratio when they assess the profitability of an acquisition. That is, managers who previously perform better are more subject to hubris and subsequently make bad acquisition decisions. This hypothesis predicts that in the short run, stock prices of glamour bidders (high *q*) increase much more than stock prices of value bidders (low *q*) around the announcement of the acquisition. In contrast, the non-contract sample does exhibit this performance extrapolation since Tobin's *q* is positively related to announcement returns, although the relation is marginally significant. Overall, it appears that contracts may help alleviate managerial hubris and performance extrapolation so that we find no evidence of this phenomenon in the contract sample.

Leverage ratio is positive and significant in explaining CAR (-1, +1) for the contract sample, but insignificant for the non-contract sample. Since firms with higher leverage ratio have less access to free cash flow and in turn are less susceptible to the agency problem of free cash flow (Jensen (1986)), the market responds more favorable to acquisitions made by firms with high leverage ratio. However, this muting effect of leverage on the agency problem of free cash flow is observed in the contract sample only, suggesting that contracts play a substantial role in mitigating the agency costs of free cash flow. The free cash flow ratio is negatively but insignificantly related to bidder announcement returns across both samples.

Across both groups, capital expenditures to total assets ratio is positive but insignificant in determining CAR (-1, +1). Relative deal value is negatively related to bidder announcement returns. This is consistent with the view that the larger the deal

value relative to acquirer market capitalization, the more likely the acquisition is motivated by empire building. It is worth notice this negative relation between relative deal value and bidder announcement return is highly significant in the no contract sample but only marginally significant in the contract sample, thereby indicating CEO contracts to discourage acquisitions motivated by empire building.

Acquirer three-year BHAR is positive but insignificantly associated with bidder announcement returns across both samples. Consistent with prior literature, cash deals exhibit better announcement returns, although the coefficient is not statistically significant. Tender offers exhibit higher but insignificant bidder announcement returns regardless of a contract. In the contract group, options based compensation is positively related to acquirer announcement returns. This is consistent with Datta *et al.* (2001), who document hat options based compensations provide executives with better incentives and encourage acquisition decisions more favorable to the market. However this relation reverses for the non-contract sample, implying that options may provide perverse incentives without explicit CEO employment contracts. Nevertheless the relations are not statistically significant.

Acquirers purchasing a private or subsidiary targets exhibit better announcement returns, which is consistent with prior literature. G-index is positive in explaining bidder CAR (-1, +1) for the contract sample and becomes negative but for the non-contract sample. Masulis *et al.* (2006) find a negative relation between acquirer anti-takeover provisions (the G-index)and acquirer announcement returns and conclude that managerial entrenchment (proxied by the anti-takeover provisions) leads

to bad acquisition decisions. My findings suggest that anti-takeover provisions do not seem to entrench managers once the managers have employment contracts to line up their incentives with the shareholders; the G-index is only negatively associated with bidder announcement returns when the CEOs have no contract. Nonetheless the relation between G-index and announcement returns is insignificant.

Finally, the coefficient estimate on the inverse Mills ratio is negative in the sample with CEO contracts (Eq. (5.4)) and positive in the non-contract sample (Eq. (5.5)). The signs of the estimates seem to be consistent with the entrenchment effect hypothesis provided the announcement returns incorporate all information regarding acquirer long-run performance. This is questionable due to the information asymmetry between the management and the market, which gives rise to managerial myopia in the first place. Note that neither of the coefficient estimates on the inverse Mills ratio is significant, indicating a sample selection bias to be of little concern in both subsamples when studying acquirer announcement returns.

8.3.4. Second-Stage Regressions: Acquirer Long-Run Returns

This section analyses bidder post-acquisition abnormal stock returns using after adjusting for self-selection bias. Table 8.4 illustrates acquirer one-, three-, and five-year post-acquisition BHAR. Panel A examines BHAR adjusted by the value-weighted returns on benchmark portfolios, while Panel B studies BHAR adjusted by

the equally-weighted benchmark returns. Since results in Panel B are quite similar to those in Panel A, I will only discuss results in Panel A.

When CEO contracts are used (Eq. (5.4)), one-year bidder post-acquisition abnormal returns are positively and significantly related to CEO age at the announcement date. When contracts are not used as in Eq. (5.5), CEO age is not significantly related to bidder one-year post-event BHAR. These patterns also hold over the three- to five-year windows. This finding suggests, for acquirers with CEO contracts *only*, the older the acquirer CEO, the better the returns to acquiring shareholders. If older CEOs are more powerful and entrenched, contracts appear to reduce managerial entrenchment and motivate value-maximizing acquisitions. Alternatively, if older CEOs (with a shorter horizon) are more prone to myopia, contracts seem to alleviate this short-sightedness and encourage value-creation to acquiring shareholders.

Tenure as CEO is the number of years a CEO has remained in current position as of acquisition announcement day. Over one year following the acquisitions, CEO tenure is insignificant in explaining bidder BHAR across both subsamples. Over the three to five years following the transactions, however, CEO tenure is significant and negative when contracts are used; and positive but insignificant when contracts are not used. This suggests that CEO tenure and employment contracts are substitutes but not complements to each other. More powerful CEOs (with a longer tenure) tend to become entrenched with a contract and make suboptimal investment decisions. Absent CEO contracts, however, CEOs with a longer tenure do not seem to engage in any

value-destroying acquisitions. This may be the reason why firms tend to grant contracts to managers with a shorter tenure (as shown in Tables 8.1 and 8.2)

Across all three event windows and both subsamples, a Chairman-CEO does not perform significantly differently from their peers. Firm size is negative but insignificant in accounting for bidder post-acquisition abnormal returns, consistent with prior literature. Tobin's q is negative but insignificant in explaining bidder post-acquisition abnormal returns.

Leverage ratio is positively related to bidder BHAR. Interestingly, over the one year window, this relation is only significant when contracts are not used; whereas over the longer five-year window, this positive relation is only significant when contracts are used. It appears that over time (*i.e.*, from the short run of one year to three years and ultimately five years after the transactions) leverage ratio is gaining more importance in explaining acquirer BHAR when contracts are used. Since firms with higher leverage ratio are more subject to financial distress and bankruptcy risk, CEOs in firms with higher leverage ratios are more prone to managerial myopia and make sub-optimal investments. The evidence thus implies that contracts provides a safety net to managers in financial distressed firms and encourage them to focus on the long run. Alternatively, the more debts a firm has, the less free cash at the discretion of management, and the more disciplines imposed on mangers by debt holders. As a result, the agency problem of free cash flow is of a smaller concern for firms with higher debt ratio. However, in the long run, high debts help reduce the agency problem of free cash flow only when a CEO contract is used.

On the contrary, the free cash flow ratio is insignificantly related to acquirer one-year abnormal returns, but significantly and positively associated with the three- and five-year BHAR when contracts are not used. In a firm with a CEO contract, free cash flow does not impact acquirer post-acquisition returns, which indicates the agency costs of free cash flow to be negligible. However, if an acquiring manager does not have a contract, the more free cash flow the acquirer has, the higher the post-acquisition long run return is. The evidence suggests that managers without contracts may be motivated to use the free cash at hand more efficiently and conduct better acquisitions compared to their peers with contracts, which is consistent with the entrenchment effect hypothesis.

Capital expenditures to total assets ratio is negatively (positively) related to acquirer post-acquisition BHAR when contracts are (not) used. However, the relation is largely insignificant. Relative deal value is not significant in determining bidder one-year or five-year BHAR, but positive and significant in explaining the three-year BHAR when the CEO does not have a contract. Since relative deal value is a proxy for acquisition risk, it implies that riskier acquisition leads to larger bidder long-run abnormal returns especially when the acquiring CEO does not have a contract. Alternatively, to the extent that relative deal value measures empire building, this finding suggests acquisitions undertaken by CEOs without contracts are less likely to be driven by empire building, which provides support for the entrenchment effect hypothesis.

Bidder announcement returns are positively yet insignificantly related to its one-year BHAR when contracts are used, but significantly and negatively related to one-year BHAR when contracts are not used. Over the three year window, CAR (-2, +2) is insignificant in accounting for bidder BHAR. Over the five years following the acquisitions, CAR (-2, +2) is positively and marginally significantly related to BHAR. It appears that bidder announcement returns are not an accurate predictor to acquirer long-run post-acquisition abnormal returns. This may be due to information asymmetry between the management and the market regarding the desirability of the projects in the long run. This information asymmetry may have contributed to managerial myopia in the first place. As such, this study mainly relies on the acquirer post-acquisition abnormal returns to gauge acquiring shareholder value creation.

Neither cash deals nor ender offers are significant in explaining acquirer post-event abnormal stock returns. Results on executive options based compensation provide insightful implications. Recall that in the univariate regressions of Chapter 7 where I did not control for the self-selection bias, the coefficient estimates on options based compensations are negative, contradicting Datta *et al.* (2001). However, after adjusting for the self-selection in bias the sample, executive stock options are positively related to acquirer post-acquisition abnormal returns across three windows and both subsamples. This is consistent with Datta *et al.* (2001), who argue that stock options help line up the incentives of executives with shareholders and motivate optimal acquisition decisions.

It is worth noting that options based compensation is only significantly related to acquirer one-year BHAR when contracts are not used. This indicates that absent CEO contracts, firms rely more on executive stock options to line up managerial incentives with shareholders and motivate good acquisitions. However, over the three years following the acquisition, options are significantly positively related to bidder BHAR across both subsamples. Conversely, over the five years following the acquisitions, executive stock options are only significant in the contract sample, indicating that absent a contract, executive options are not effective in lining up managerial interests with shareholders and eliciting better investments. Overall, CEO contracts and options based compensation seem to be substitutes to each other in determining short-run acquirer returns but complements in long-run returns.

Acquirers purchasing a private target do not outperform their peers acquiring non-private targets. Firms acquiring a subsidiary target exhibit better post-acquisition performance. Interestingly, when CEO contracts are used, acquirers who purchase a public or private target do not underperform those who purchase a subsidiary target. Evidently, contracts help reduce the differential in post-acquisition performance between acquirers purchasing a subsidiary versus those purchasing a stand-alone target.

The G-index is inversely associated with bidder post-acquisition abnormal stock returns. Over the short run (one-year), however, this negative relation between the G-index and acquirer stock returns is not significant. Over the three-year window, the G-index is negative and significant in explaining acquirer returns only for the non-

contract sample. On the contrary, the G-index is negative and significant over the five-year window when contracts are used. Overall the negative relation between G-index and acquirer three- to five-year post-acquisition BHAR confirms the view in Masulis *et al.* (2006) that anti-takeover provisions may entrench management and give rise to sub-optimal investments. While Masulis *et al.* (2006) measure acquisition desirability with bidder announcement returns, this study also examines acquirer long-run post-acquisition abnormal returns and thus adds further evidence to the literature on both G-index and M&A. Note that this entrenchment effect of G-index is only significant when contracts are not used for the three-year BHAR, meaning that contracts help may alleviate this perverse incentive provided by anti-takeover provisions. However this pattern is reversed for the five-year BHAR.

Over the one-year window, the coefficient estimate on the inverse Mills ratio is negative when contracts are used (Eq. (5.4)) and positive when contracts are not used (Eq. (5.5)). This is consistent with the notion that one-year BHAR or short-term return is lower when contracts are used. Neither coefficient estimate is significant suggesting that self-selection bias is not a serious issue in the study of acquirer one-year BHAR. At the end of the third anniversary of the transactions, however, the coefficient on the inverse Mills ratio when contracts are used (Eq. (5.4)) is positive, consistent with the incentive effect hypothesis; although the coefficient is insignificant, indicating that self-selection bias is not a significant problem for this subsample. When contracts are not used (Eq. (5.5)), the coefficient on the inverse Mills ratio is significantly negative, suggesting a significant self-selection bias consistent with the incentive effect

hypothesis. Over the five years following the acquisitions, the coefficient on the inverse Mills ratio is significantly positive when contracts are used (Eq. (5.4)) and significantly negative when contracts are not used (Eq. (5.5)), suggesting significant self-selection bias consistent with the incentive effect hypothesis in both subsamples. Overall, results on the inverse Mills ratio are consistent with the incentive effect hypothesis, which posits that firms use contracts only when doing so yields the maximum long-run abnormal returns.

Results regarding equally-weighted benchmarked BHAR are qualitatively similar. Table 8.5 illustrates self-selection bias adjusted regressions results on acquirer post-acquisition CAR and provides consistent evidence.

In summary, the regressions results on bidder post-acquisition abnormal returns and the inverse Mills ratio are consistent with the incentive effect hypothesis that CEO contracts are used whenever the net benefits of using them exceed the benefits of not using them. I find no evidence consistent with the entrenchment effect hypothesis that contracts are used as a result of managerial attempt to avoid discipline and that the use of contracts reduces shareholder value.

8.4. Comparison of Actual to Predicted Returns

The estimated models in Tables 8.3, 8.4 and 8.5 are used to obtain the forecasts of expected acquirer announcement returns and post-acquisition abnormal returns for

firms had they used the alternative contract status. Specifically, forecasts are

determined as the product of the regression coefficient estimates and the explanatory

variables, excluding the inverse Mills ratio. The inverse Mills ratio is excluded since it

is used merely to adjust for nonzero expectations of regression errors in equations

(5.4) and (5.5). I next compare the forecasts to the actual returns. I examine acquirer

announcement returns first, and then acquirer post-acquisition abnormal returns, *i.e.*,

BHAR and CAR.

8.4.1. Acquirer Announcement Returns

Table 8.6 compares the forecasted bidder announcement returns with the actual

CARs. Both CAR (-1, +1) and CAR (-2, +2) are examined. For acquiring firms using

a CEO contract, CAR (-1, +1) would have been 0.67% if contracts had not been used

(row 2), compared to an actual three-day announcement return of -0.63% (row1). The

mean change in three-day announcement return is 1.30% should a contract not be used

(row3). The *t*-statistics show that the mean change is significantly different from zero.

The last row reports the number of cases that would have experienced a negative

change in returns had the firms changed their contract status. The percentage of the

negative changes is reported in the parenthesis, under which, the *z*-statistics from a

two-sided binomial test are presented. The null hypothesis of the binomial test is that

the changes in returns are equally likely to be positive or positive. A non-parametric

test is conducted due to the problem in identifying an appropriate distribution for a parametric test. Table 8.6 shows that 105 out of the 261 deals with contracts (40.2%) would have experienced a negative change in returns had a contract not been used. The null hypothesis that 50% of the cases would have experienced a negative change should contracts not be used is rejected at the 1% level in favor of a ratio below 50% (z=-3.16). Thus, it appears that firms in the contract group would have earned a significantly larger CAR (-1, +1) if contracts were not used.

For acquirers without CEO contracts, CAR (-1, +1) would have been 0.57% had contracts been used (row2), compared to an actual CAR (-1, +1) of -0.99%. (row1). The mean change in CAR (-1, +1) should contracts be used is 1.56% (row3). This mean change is significantly different from zero based on both the t test and the binomial test, meaning that these firms would have exhibited a higher announcement returns had they given their CEOs a contract.

Acquirers in the contract group would have earned a better CAR (-2, +2) had their CEOs received no contracts (*i.e.*, the mean change is 0.68% in row3). Nevertheless, this mean change is insignificant based on the t-test and marginally significant in a binomial test. Acquirers without contracts, on the contrary would have a significantly larger CAR (-2, +2) if contracts were used.

Evidence on announcement returns is consistent with the regressions results in Table 8.3 and those in Chapter 6 on univariate analysis. The sample selection bias does not seem to be an important issue in either sample when studying bidder announcement returns. Note that we have previously found announcement returns to

be an inaccurate predictor of bidder future long-run performance in Table 8.3, due to a potential information asymmetry between the acquirers and the market regarding the desirability of the acquisitions. Given this, it is rational for an acquiring firm not to use CEO contracts so as to maximize announcement returns. Rather, firms select to use CEO contracts in order to maximize shareholder value in the long.

8.4.2. Acquirer Post-Acquisition Abnormal Returns

Table 8.7 compares the forecasts of acquirer post-acquisition BHAR had the alternative contract status been observed, to the actual BHAR over the one, three and five years following the acquisitions. Panel A examines acquirer BHAR where the benchmark portfolio returns are value-weighted, while Panel B analyses bidder BHAR with equally-weighted benchmark returns. In Panel A for firms with a CEO contract, the one-year BHAR would have been 6.95% (row2) had a contract not been used, compared to an actual return of 3.08%.(row1). The average change of 3.87% had the firm not used a contract (row3) is insignificant in a t-test and marginally significant in a binomial test.

For acquirers without a CEO contract, the one-year BHAR would have been 5.10% (row2) had the firms use a contract, compared to an actual return of 2.75% (row1). The mean difference is 2.35% had a contract been used (row3). However, the difference is not significantly different from zero in a t-test and only marginally

significant in a binomial test. Similar results are found in Panel B for the one-year acquirer BHAR using equally-weighted benchmark. The evidence on acquirer one-year BHAR suggests that firms do not give their CEOs contracts in order to maximize shareholder value in the short run. By switching to the alternative contract status, 55.6% of the firms in the contract sample and 55.9% in the non-contract sample could have gained a higher BHAR, although the difference is merely marginally significant.

Over three years following the transactions, acquirers with CEO contracts would have earned a BHAR of -22.42% had contracts not been used (row2). This is substantially lower than the actual three-year BHAR of 20.18% (row1). An average deterioration in abnormal stock returns of -42.60% if CEO contracts were not used is highly significant in both the parametric and the binomial tests. The null hypothesis of the binomial test that 50% of the cases would have experienced a negative change is rejected in favor of a higher 65.5% (row4). Of the 261 acquirer with CEO contracts 171 (65.5%) would have experienced a deterioration in BHAR had contracts not been used. Consistent with the incentive effect hypothesis, firms seem to use contracts to reduce managerial penchant for short-term gains and maximize shareholder returns in the long run.

In the non-contract subsample, the average three-year post-acquisition BHAR would have been 4.58% if contracts were used (row2), compared to an actual 3.32% (row1). The mean change of 1.26% (row3) had a contract been used is not significantly different from zero in the *t*-test. However, the binomial test shows that of the 270 firms without a contract, 158 (58.5%) would have experienced an

improvement in BHAR had they used a contract. Consistent with the incentive effect hypothesis, on average contracts improve acquirer three-year BHAR in all cases but are only used where the improvement is the greatest (*i.e.,* a difference of 42.60% vs. a change of only 1.26% in row 3). Results on bidder three-year BHAR using equally-weighted benchmark in Panel B are qualitatively similar, and provide consistent evidence.

Results regarding acquirer five-year BHAR are a bit mixed. Acquirers with a CEO contract would have earned a five-year post-acquisition BHAR of -72.90% had the contracts not been used (row2), compared to an actual return of 44.96% (row1). The average change had a contract not been used is -117.86% (row3), which is significantly different from zero in both parametric and non-parametric tests. The binomial test demonstrates that 218 out of the 261acquirers with contracts (83.5%) would have earned a significantly lower five-year BHAR had they not used CEO contracts. Consistent with the incentive effect hypothesis, firms in the contract group would have fared significantly worse over the five years following the acquisitions had they not used a CEO contract. The evidence indicates that contracts do help mitigate managerial myopia and motivate value-maximizing acquisitions.

For firms without contracts, the five-year BHAR would have been -20.59% if contracts were used (row2), compared to an actual mean return of 24.37% (row1). The mean change is -44.96% in BHAR had contracts been used instead (row3). This average change is highly significant in both the *t*-test and the binomial test. More specifically, the binomial test shows that 60.4% of the firms in the non-contract group

would have performed substantially worse had they used a CEO contract. This finding is consistent with the entrenchment effect hypothesis but contradicts the incentive effect hypothesis. However, five years is a long period of time, over which quite a few confounding events may have occurred and contributed to the mixed results. Overall the finding also suggests that firms efficiently choose not to use a contract if using one destroys shareholder wealth in the long run. Therefore, the Board of directors on average is efficient in monitoring and disciplining managerial behavior.

Results based on the equally-weighted benchmark returns in Panel B are qualitatively similar. Evidently, firms select to use contracts when and only when the net benefits to shareholders of using CEO contracts are significantly larger than the benefits of not using them. CEO contracts significantly improve bidder three-year post-acquisition abnormal returns; *i.e.*, acquirers across both subsamples would fare significantly better if they had a contract vis-à-vis not having one. This is consistent with the incentive effect hypothesis, which posits that contracts help alleviate managerial short-sightedness and maximize shareholder value in the long run. However, results on the five-year BHAR are mixed. On one hand, firms with a CEO contract would have experienced substantial deterioration in post-acquisition performance had they not used a contract, which is consistent with the incentive effect hypothesis. On the other hand, firms without a CEO contract would have done worse had they used one, which provides support for the entrenchment effect hypothesis.

Table 8.8 provides comparison of forecasted acquirer CAR if the alternative contract status were true with the actual CAR. Panel A reports results of one-, three-

and five-year CAR using value-weighted benchmark portfolio returns, while Panel B presents evidence using equally-weighted benchmark. Panel A shows that over one year following the acquisition, acquirers with CEO contracts would have gained an average CAR of 5.15% if contracts were not used (row2), in comparison to an actual one-year CAR of 4.44% (row1). However, the average increase of 0.71% had a contract not been used (row3) is not significantly different from zero. For bidders without contracts, one-year post-acquisition CAR would have been 7.95% should contracts be used (row2), compared to an actual return of 1.50% return. The mean increase of 6.45% had contracts been used (row3) is only marginally significant in the binomial test. Using equally-weighted benchmark returns in Panel B does not change the results. Therefore, acquirers do not appear to have experienced any significant changes in their short-term returns had they chosen the other contract status.

At the end of the third anniversary of the transactions, bidders with CEO contracts would have earned a post-acquisition CAR of -4.15% had contracts not been used (row2), which is significantly lower than the actual three-year CAR of 18.16% (row1). The average decline of 22.31% (row3) had a contract not been used is highly significant in both tests. It indicates that contracts do help reduce managerial myopia and encourage value-increasing investments in the long run.

For firms without CEO contracts, the three-year CAR would have been 17.51% if contracts were used (row2), compared to an actual CAR of 6.85% (row1). The average increase is 10.66% had contracts been used (row3), which is highly significant in both tests. Results using equally-weighted benchmark returns in Panel B

remain qualitatively the same. Consistent with the incentive effect hypothesis, contracts appear to help improve bidder three-year post-acquisition CAR on average in all cases, but are only used when the improvement is the greatest (22.3% vs. 10.66% improvement). Results on bidder CAR over the five years following the transactions provide similar evidence, which supports the view that contracts maximize shareholder returns over the long run by reducing managerial incentive for myopia behavior.

Overall, the evidence is consistent with the incentive effect hypothesis which states that CEO employment contracts are used if the net benefits to shareholders are larger than they would have been had contracts not been used. In addition, by comparing the forecasted and actual shareholder returns following the acquisitions, I find that CEO contracts significantly improve bidder returns in the long run, which provides support for the incentive effect hypothesis but contradicts the entrenchment effect hypothesis. These results are robust to different weighting schemes and difference event windows.

8.5. Summary

This chapter addresses the potential self-selection problem in my sample and sheds new light on the relative importance of the two competing hypotheses in affecting acquirer value-creation in M&A. First, I examine the determinants of CEO

contracts using probit and logit models, and find mixed evidence. More specifically, a CEO is more likely to have a contract if the executive is less capable or successful (younger than 65), has less experiences and hence is subject to higher uncertainty regarding his quality (shorter tenure, outside CEO), the pressure to deliver short-term gains is higher (greater institution ownership), the firm has recently underperformed (low market-adjusted return), and the firm is faced with more volatile environment (higher stock return volatility). These findings are consistent with the incentive effect hypothesis that contracts are positively related to the likelihood of managerial myopia and shareholder costs of this short-sightedness. I also find the likelihood of a CEO contract to be higher when a CEO has a shorter horizon (older CEO), or is more powerful (Chairman-CEO). These results suggest that some firms use CEO contracts not to maximize shareholder value but rather to entrench high-powered mangers and allow their rent-seeking action at the expense of shareholder wealth. Overall, the majority of the evidence is consistent with the incentive effect hypothesis, yet there is some support for the entrenchment effect hypothesis as well.

Given that firms grant their CEOs contracts selectively, I conduct the Heckman (1979) selection-bias adjusted regressions of acquirer value-creation. Based on the estimates from the Heckman two-stage regressions model, I next compare the forecasts of acquirer abnormal returns had the alternative contract status been true, to the actual bidder returns. I find evidence consistent with the premise that firms use CEO contracts when using them results in greater shareholder wealth in the long run than not using them. On average, contracts improve bidder post-acquisition abnormal

returns in the long run (with the exception of the five-year BHAR for the subsample without CEO contracts). These findings provide support for the incentive effect hypothesis that contracts alleviate managerial short-termism and motivate value-maximizing investment decisions. I find no substantial evidence consistent with the entrenchment effect hypothesis, which states that contracts are used to avoid monitoring and discipline on managerial behavior, leading managers to pursue personal interest at shareholder costs. Overall, contracts do not seem to entrench managers and induce them to make suboptimal investments.

Chapter 9

CONCLUSIONS

This thesis studies the determinants of CEO employment contracts, and the impact of CEO contracts on value-creation and managerial risk-taking in acquisitions. As of 2005, approximately half of S&P 500 CEOs worked with an employment agreement. A typical contract protects the CEO by increasing the potential costs of terminating his employment, and hence reducing the probability he will be fired due to poor performance. Given this, I examine whether the presence of a contract *ex ante* impacts CEO investment decisions within the context of mergers and acquisitions. The incentive effect hypothesis predicts that contracts protect CEOs against the downside risk if a project generates low profits in the short run, mitigate managerial short-sightedness and encourage value-maximizing investments. In addition, contracts motivate risk-averse CEOs to take more risk. Alternatively, the entrenchment effect hypothesis predicts that contracts entrench poor-performing CEOs by insulating them from the discipline of the corporate control market and the internal governance mechanisms, thereby inducing managers to pursue private benefits at shareholder expense. Besides, entrenched managers may prefer an easy and quiet life and avoid taking risk (Bertrand and Mullainathan (2003) and Atanassov (2005)).

Using a unique dataset on CEO employment contracts, I find evidence consistent with the incentive effect hypothesis. Specifically, acquirers with CEO contracts pay lower premiums for their targets, thus generating larger value to

acquiring shareholders than acquirers without such pacts. In the short run, *e.g.*, within one year after the deals, acquirers with CEO contracts do not appear to outperform acquirers without such contracts. However, over the three to five years following the acquisitions, acquirers with CEO agreements experience significantly higher abnormal stock returns than their peers without CEO contracts. Moreover, CEOs with contracts tend to take riskier acquisitions. I find no evidence that contracts entrench poor-performing CEOs and lead to bad acquisitions. These results are robust across industries, to a variety of model specifications and alternative explanations, and to the inclusion of various control variables.

In addition, I also investigate the determinants of CEO contracts using probit and logit models. Results based on both prediction models show that the probability of a CEO contract is positively related to the magnitude of potential managerial myopia and the costs to shareholders of expected myopia. For example, firms are more likely to use CEO employment contracts if the CEO have shorter horizons (older CEO), the CEO is less capable or successful (CEO age younger than 65), the uncertainty on CEO capability is higher (shorter tenure, outside CEO), the pressure to deliver short-term gains is higher (greater institution ownership), the firm has previously performed badly (low market-adjusted return), and the firm is faced with more volatile environment (higher stock return volatility).These findings are consistent with the prediction of the incentive effect hypothesis that contracts are used to mitigate managerial myopia and encourage value-maximizing investment decisions.

Given that firms select to use contracts when doing so creates more shareholder value, I conduct the Heckman (1979) two-stage selection-bias adjusted estimates of acquirer value-creation and find evidence consistent with the premise that firms use CEO contracts when using them results in greater shareholder wealth in the long run than not using them. These findings further support the incentive effect hypothesis that contracts alleviate managerial short-termism and give rise to value-maximizing investment decisions. I find no substantial evidence consistent with the entrenchment effect hypothesis, which states that contracts are used to avoid monitoring and discipline on managerial behavior, leading managers to pursue personal interest at shareholder costs.

Overall, the evidence in this thesis suggests that employment contracts alleviate managerial concerns regarding short-term profits and encourage CEOs to make investments that maximize shareholder value in the long run.

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Appendix Variable Definitions

This appendix defines accounting, executive compensation and the ownership variables used in the study. Accounting variables are from the merged CRSP and Compustat annual file. Stock return data are from CRSP and the executive compensation data are from the Standard & Poor's Execucomp database.

A1. Accounting Variables with Compustat Data Numbers

Assets (in $mn) = Book value of total assets
                 = data6

Sales-to-Assets = Total value of sales to book value of total assets
                 = data12 / data6

Leverage Ratio   = Total debt / market value of assets
                 = (Long-term debt + Debt in current liabilities) /
                     [Book value of assets-Book value of common equity
                     + Absolute value of (share price * shares outstanding)]
                 = (data9 + data34) / [data6 – data60 + abs (data199 * data25)]

Free Cash Flow Ratio = Free cash flow / Book value of total assets
                 = (Operating income before depreciation – Interest expense
                     - Income taxes – Capital expenditures) / Book assets
                 = (data13 – data15 – data16 – data128) / data6

Tobin's q = Market value of assets / Replacement costs of assets

= [Book value of assets – Book value of common equity

+ Absolute value of (share price * shares outstanding)] /

Book value of assets

= [data6 – data60 + abs (prc * data25)] / data6

ROA   = Return on assets

= Income before extraordinary items / Book value of assets

= data18 / data6

Capex-to-Sales   = Capital expenditures/Sales

= data128/data12

Capex-to-Assets   = Capital expenditures/Total assets

= data128/data6

Capex-to-PP&E   = Capital expenditures/Net property, plant & equipment

= data128/data8

R&D-to-Sales   = Research and Development expenditures/Sales

= data46/data12

R&D-to-Assets   = Research and Development   xpenditures/Total assets

= data46/data6

R&D-to-PP&E   = R&D expenditures/ Net property, plant & equipment

= data46/data8

A2. Executive Compensation and Ownership Variables

All variables are valued in thousand dollars ($000s).

Salary: The dollar value of the annual base salary (cash and stock).

Bonus: The dollar value of a bonus (cash and stock) during the fiscal year.

Other Annual (Short-Term): The dollar value of other annual compensation not properly categorized as salary or bonus.

Restricted Stock Granted: The value of restricted stock granted during the year.

Stock Options Granted: The aggregate value of stock options granted to the executive during the year as valued using S&P's Black-Scholes methodology.

Long-Term Incentive Plan Payout: The amount paid out to the executive under the company's long-term incentive plan. These plans measure company performance over a period of more than one year (generally three years).

All Other (Long-Term): Annual compensation that does not belong under other categories.

Total Compensation: Total compensation for the individual year, comprised of the following: Salary, Bonus, Other Annual, Total Value of Restricted Stock Granted, Total Value of Stock Options Granted (using Black-Scholes), Long-Term Incentive Payouts, and All Other Total.

Stock-Options Based Compensation: the sum of the value of new options (using Black-Scholes method) granted as a percentage of annual total compensation.

Share Ownership: The percentage of the company's shares owned by the executive.
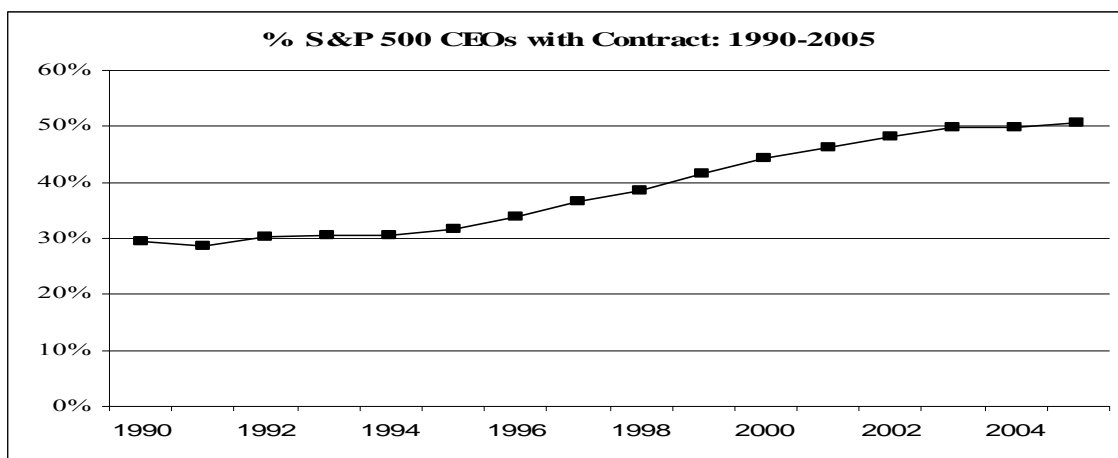
Figure 4.1 Panel A Annual percentage of S&P 500 CEOs with employment agreements during 1990-2005
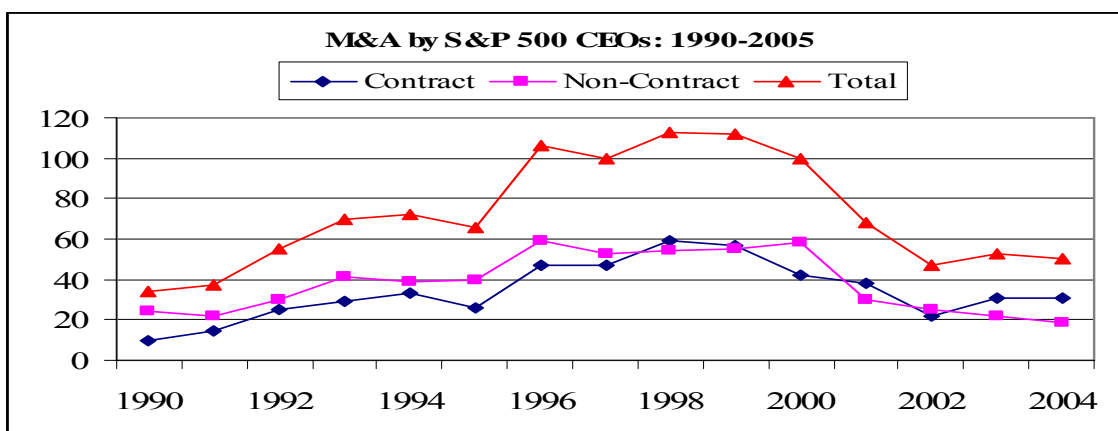
Figure 4.1 Panel B Annual number of acquisitions made by S&P 500 firms by announcement year.

Figure 4.1 Panel C Annual percentage of acquisitions made by S&P 500 CEOs with contracts.

Table 4.1 Summary Statistics of S&P 500 CEOs Categorized by Contract

This table presents the summary statistics of S&P 500 CEOs categorized by CEO contract. The full sample consists of 1,381 CEOs in office at S&P 500 firms during 1/1/1990-12/31/2005. The event date is the appointment date if the CEO is hired with a contract or the contract date if the executive enters into a contract after becoming a CEO. For CEOs without contracts, the event date is the appointment date. Age is the CEO's age at the event date. Age>=65 equals 1 if the CEO's age is greater than or equal to 65, and zero otherwise. Tenure is the number of years the executive has worked with the firm at the event date. Outside equals 1 if the executive has been with the firm for less than three years when becoming a CEO, and zero otherwise. Founder is an index equaling 1 if the CEO is a founder or comes from a founding family of the firm, and zero otherwise. CEO/Chair equals 1 if the CEO is also Chairman of Board of Directors, and zero otherwise. Institutional ownership is the number of shares owned by institutional investors dived by the number of shares outstanding. Return volatility is the standard deviation of monthly stock returns over the 12 months preceding the event date. Appendix defines the accounting, ownership, and the compensation variables. All accounting variables are measured at the fiscal year end prior to the event date and Winsorized at the 1% and 99% levels. The *t*-statistics from the *t*-test of difference between the means and *z*-statistic from the Wilcoxon rank sum test for difference between the medians are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Panel A: CEO and Governance Characteristics

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Statistics)
Age	Mean	51.25	52.12	50.53	3.67***
	Median	52.00	52.00	52.00	2.78***
	No. of Obs.	1374	617	757	
Age >= 65 (%)	Mean	3.98	5.17	3.01	2.03**
	No. of Obs.	1374	617	757	
Tenure	Mean	13.04	9.69	15.79	-9.82***
	Median	10.00	6.00	15.00	-9.87***
	No. of Obs.	1374	617	757	
Outside (%)	Mean	25.20	40.22	12.99	12.19***
	No. of Obs.	1381	619	762	
Founder (%)	Mean	13.98	10.66	16.67	-3.21***
	No. of Obs.	1381	619	762	
CEO/Chair (%)	Mean	42.51	44.75	40.68	1.52
	No. of Obs.	1381	619	762	
Institutional Ownership (%)	Mean	58.64	60.55	56.69	3.15***
	Median	60.5	63.25	59.28	3.61***
	No. of Obs.	1109	532	577	

Panel B: Firm Characteristics

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Statistics)
Return-on-Assets	Mean	4.84	3.87	5.68	-2.99***
(%)	Median	4.72	3.72	5.42	-4.75***
	No. of Obs.	1160	540	620	
Return Volatility	Mean	10.04	11.12	9.09	5.65***
(%)	Median	8.62	9.72	7.76	6.90***
	No. of Obs.	1160	540	620	
Assets	Mean	4865.87	5014.05	4769.52	0.43
($mn)	Median	5115.34	4914.77	5218.68	-0.10
	No. of Obs.	1160	540	620	
Tobin's *q*	Mean	2.05	2.09	2.02	0.71
	Median	1.47	1.46	1.49	-0.14
	No. of Obs.	1155	539	616	
Leverage	Mean	17.80	17.88	17.73	0.15
(%)	Median	14.18	13.94	14.28	-0.70
	No. of Obs.	1148	537	611	
Capex/Sales	Mean	8.88	9.19	8.61	0.55
(%)	Median	5.52	5.75	5.52	1.30
	No. of Obs.	1074	505	569	
R&D/Sales	Mean	7.83	8.08	7.63	0.15
(%)	Median	3.21	3.27	3.12	1.03
	No. of Obs.	608	274	334	

**Table 4.2 Descriptive Statistics of Acquirer Attributes, Deal Characteristics
and Top Executive Compensation Categorized by CEO Contracts**

This table presents the summary statistics of bidder attributes, deal characteristics and the top five executive compensations of acquirers at the fiscal year end prior to the acquisition announcements. The full sample consists of 1,083 completed deals made by the S&P 500 firms during 1/1/1990-12/31/2005. Contract group refers to acquisitions made by CEOs with employment contracts at the announcement date, and the non-contract group to deals by CEOs without contracts. Appendix defines the accounting, ownership, and the compensation variables. Acquirer market cap is acquirer market capitalization measured 45 days prior to the announcement. Deal value is the value of the transaction from SDC. Relative deal size is the ratio of deal value to acquirer market capitalization. Cash is a dummy variable equaling one if the deal is financed with 100% cash, and zero otherwise. Tender Offer equals one if the acquisition is identified by SDC as a tender offer and zero if a merger. Public, private or subsidiary target is a dummy variable, which equals one if the target status is public, private or subsidiary respectively, as identified by SDC. G-index is the anti-takeover provisions index used in Gompers *et. Al.* (2003). Accounting variables are Winsorized at the 1% and 99% levels. The *t*-statistics from the *t*-test of difference between the means and *z*-statistic from the Wilcoxon rank sum test for difference between the medians are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Panel A: Accounting Variables of Acquirers at the Fiscal Year End prior to Acquisition Announcement

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t/Z*-Statistics)
Assets	Mean	23,621	25,707	21,827	1.15
($mn)	Median	5,932	5,833	6,309	0.90
	No. of Obs.	1,023	473	550	
Market Cap	Mean	10,237	8,946	11,394	-2.25**
($mn)	Median	4,404	4,274	4,508	-1.47
	No. of Obs.	1,083	512	571	
Sales-to-Assets	Mean	74.42	67.06	80.73	-3.52***
(%)	Median	63.41	47.77	76.78	-4.25***
	No. of Obs.	1022	472	550	
ROA	Mean	2.98	2.45	3.43	-2.44**
(%)	Median	2.85	2.41	3.51	-3.80***
	No. of Obs.	1016	469	547	
Leverage Ratio	Mean	18.11	20.17	16.34	4.60***
(%)	Median	16.04	18.96	14.38	4.43***
	No. of Obs.	830	379	451	
Free Cash Flow Ratio	Mean	3.19	1.71	4.43	-5.50***
(%)	Median	3.61	2.75	4.01	-4.85***
	No. of Obs.	1023	473	550	
Tobin's *q*	Mean	2.09	1.81	2.33	-5.17***
	Median	1.52	1.41	1.63	-4.14***
	No. of Obs.	1023	473	550	
Capex-to-PP&E	Mean	23.48	22.31	24.43	-1.95*
(%)	Median	19.18	17.87	19.81	-1.69*
	No. of Obs.	850	382	468	
R&D-to-Assets	Mean	5.75	4.88	6.31	-2.38**
(%)	Median	3.40	3.03	3.56	-2.05**
	No. of Obs.	451	176	275	

Panel B: Deal Characteristics

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t/Z*-Statistics)
Deal Value	Mean	3,232	3,557	2,940	1.20
($mn)	Median	740	733	756	0.02
	No. of Obs.	1,083	512	571	
Relative Deal Size	Mean	32.74	37.23	28.71	2.92***
(%)	Median	14.45	14.84	13.84	1.92*
	No. of Obs.	1083	512	571	
Cash	Mean	35.64	35.74	35.55	0.07
(%)	No. of Obs.	1083	512	571	
Tender Offer	Mean	8.77	6.84	10.51	-2.16**
(%)	No. of Obs.	1083	512	571	
Public Target	Mean	52.35	51.95	52.71	-0.25
(%)	No. of Obs.	1083	512	571	
Private Target	Mean	16.53	14.84	18.04	-1.42
(%)	No. of Obs.	1083	512	571	
Subsidiary Target	Mean	31.12	33.20	29.25	1.40
(%)	No. of Obs.	1083	512	571	

Panel C: Top Five Executive Compensation, Ownership, and G-Index

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t/Z*-Statistics)
Salary ($000s)	Mean	3,418	3,608	3,243	2.65***
	Median	3,029	3,105	2,979	2.58***
	No. of Obs.	919	440	479	
Bonus ($000s)	Mean	3,533	3,983	3,119	2.61***
	Median	2,119	2,295	1,947	4.01***
	No. of Obs.	919	440	479	
Other Annual (Short-Term) ($000s)	Mean	442	544	347	2.08**
	Median	27	51	12	2.80***
	No. of Obs.	919	440	479	
Restricted Stock Granted ($000s)	Mean	1,645	1,867	1,442	1.63
	Median	0	10	0	2.46**
	No. of Obs.	919	440	479	
Stock Options Granted ($000s)	Mean	13,050	17,461	8,985	4.83***
	Median	4,153	6,168	3,469	5.86***
	No. of Obs.	909	436	473	
Long-Term Incentive Plan Payout ($000s)	Mean	877	889	865	0.16
	Median	0	0	0	-1.83*
	No. of Obs.	919	440	479	
All Other (Long-Term) ($000s)	Mean	1,390	1,986	843	4.29***
	Median	266	301	225	3.45***
	No. of Obs.	919	440	479	
Total Compensation ($000s)	Mean	23,561	29,809	17,801	5.51***
	Median	12,543	16,935	10,034	6.02***
	No. of Obs.	909	436	473	
Stock-Options Based Compensation (%)	Mean	40	44	37	4.48***
	Median	35	41	32	4.38***
	No. of Obs.	909	436	473	
Share Ownership (%)	Mean	7.6	7.4	7.8	-0.37
	Median	2.6	2.3	3.6	-2.49**
	No. of Obs.	422	226	196	
G-Index	Mean	9.8	9.9	9.7	0.82
	Median	10.0	10.0	10.0	-0.72
	No. of Obs.	890	420	470	

Table 6.1 CEO Employment Contracts and Acquisition Premiums: Full Sample

This table studies the relation between CEO employment contracts and acquisition premiums using the full sample. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Certain criteria are met. Contract group refers to acquisitions made by CEOs with an employment contracts as of the announcement date and the non-contract group to deals by CEOs without contracts. Acquisition premiums is defined as :

Acquisition Premium = (Highest Target Share Price Paid by Acquirer-Target Share Price 4 Weeks Prior)
                              Target Share Price 4 Weeks Prior to the Announcement

t-statistic of difference between the means and *z*-statistic from the Wilcoxon rank sum test for difference between the medians are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Statistics)
Premium (%)	Mean	42.26	40.18	44.06	-1.41
	Median	37.54	35.70	39.15	-1.66*
	No. of Obs.	519	240	279	

Table 6.2 CEO Employment Contracts and Acquirer Announcement Return: Full Sample

This table examines the relation between CEO employment contracts and acquirer cumulative abnormal returns around the announcement date using the full sample. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Certain criteria are met. Contract group refers to acquisitions made by CEOs with an employment contracts as of the announcement date and the non-contract group to deals by CEOs without contracts. CAR (-1, +1) is the three- and CAR(-2, +2) is the five-day cumulative abnormal return around the announcement date (day 0), computed using raw returns net of the CRSP value-weighted market returns. *T*-statistic of difference between the means and *z*-statistic from the Wilcoxon rank sum test for difference between the medians are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Statistics)
CAR (-1, +1) (%)	Mean	-0.13	-0.09	-0.17	0.16
	Median	0.06	0.23	-0.22	0.51
	No. of Obs.	1082	512	570	
CAR (-2, +2) (%)	Mean	0.29	0.26	0.32	-0.11
	Median	0.14	0.42	0.08	0.38
	No. of Obs.	1082	512	570	

Table 6.3 CEO Employment Contracts and Acquirer Post-Event Long-Run BHAR: Full Sample

This table investigates the relation between CEO employment contracts and acquirer post-acquisition buy-and-hold abnormal return (BHAR) over one-, three- and five-year windows. The benchmark is the value- and equally-weighted returns on a matched size-and-B/M portfolio. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Certain criteria are met. Contract group refers to acquisitions made by CEOs with an employment contracts as of the announcement date and the non-contract group to deals by CEOs without contracts. The buy-and-hold abnormal return on firm i, $BHAR_i$, is calculated as

$$BHAR_i = \left\{ \left[\prod_{t=1}^{T} \left(1 + R_{i,t}\right) - 1 \right] - \left[\prod_{t=1}^{T} \left(1 + R_{benchmark,t}\right) - 1 \right] \right\} \times 100 \,,$$

where t=1 is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one-, three- and five-year anniversary date since the effective acquisition date, or the acquiring firm's delisting date, whichever is earlier. $R_{benchmark,t}$ is value- and equally-weighted return on a matched size and book-to-market portfolio return over the same holding period as the sample firm, weight being firm market capitalization at the end of previous June within the same size and book-to-market bracket. T-statistic of difference between the means and z-statistic from the Wilcoxon rank sum test for difference between the medians are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t/Z*-Statistics)
		Value-Weighted Benchmark			
One Year (%)	Mean	8.0	7.4	8.5	-0.27
	Median	-0.4	0.5	-1.0	0.51
	No. of Obs.	1083	512	571	
Three Years (%)	Mean	23.3	42.6	6.0	2.68***
	Median	-8.2	-3.7	-13.3	2.08**
	No. of Obs.	1083	512	571	
Five Years (%)	Mean	65.1	86.3	46.1	1.03
	Median	-11.8	-3.6	-18.2	2.34**
	No. of Obs.	1083	512	571	
		Equally-Weighted Benchmark			
One Year (%)	Mean	6.7	5.8	7.5	-0.43
	Median	-1.5	-1.4	-1.5	0.23
	No. of Obs.	1083	512	571	
Three Years (%)	Mean	19.8	38.8	2.7	2.67***
	Median	-12.1	-7.4	-18.5	2.16**
	No. of Obs.				
Five Years (%)	Mean	54.4	74.5	36.4	1.00
	Median	-19.3	-9.3	-25.3	2.13**
	No. of Obs.	1083	512	571	

Table 6.4 CEO Employment Contracts and Acquirer Post-Event Long-Run CAR: Full Sample

This table examines the relation between CEO employment contracts and acquirer post-acquisition cumulative abnormal return (CAR) over one-, three- and five-year windows. The benchmark is the value- and equally-weighted returns on a matched size-and-B/M portfolio. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Certain criteria are met. Contract group refers to acquisitions made by CEOs with an employment contracts as of the announcement date and the non-contract group to deals by CEOs without contracts. The cumulative abnormal return on firm i, CAR_i, is computed as

$$CAR_i = \left[\sum_{t=1}^{T} (R_{i,t} - R_{benchmark,t}) \right] \times 100,$$

where t=1 is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one-, three- and five-year anniversary date since the effective acquisition date, or the acquiring firm's delisting date, whichever is earlier. $R_{benchmark,t}$ is value- and equally-weighted return on a matched size and book-to-market portfolio return over the same period as the sample firm, weight being firm market capitalization at the end of previous June. *T*-statistic of difference between the means and *z*-statistic from the Wilcoxon rank sum test for difference between the medians are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t/Z*-Statistics)
		Value-Weighted Benchmark			
One Year (%)	Mean	6.0	6.3	5.7	0.25
	Median	3.1	4.4	2.4	0.78
	No. of Obs.	1083	512	571	
Three Years (%)	Mean	11.5	16.3	7.1	2.31**
	Median	5.7	9.1	3.5	1.86*
	No. of Obs.	1083	512	571	
Five Years (%)	Mean	22.0	26.3	18.1	1.77*
	Median	10.9	14.7	6.9	1.86*
	No. of Obs.	1083	512	571	
		Equally-Weighted Benchmark			
One Year (%)	Mean	5.0	5.0	4.9	0.04
	Median	2.8	3.3	2.4	0.52
	No. of Obs.	1083	512	571	
Three Years (%)	Mean	8.6	13.0	4.6	2.12**
	Median	3.7	7.1	0.6	1.96**
	No. of Obs.	1083	512	571	
Five Years (%)	Mean	16.5	20.1	13.3	1.47
	Median	6.5	12.4	2.1	2.03**
	No. of Obs.	1083	512	571	

Table 6.5 Four Factor Regression and Calendar Time Portfolio: Full Sample

The full sample consists of 1083 completed acquisitions made by the S&P 500 companies during the period January 1, 1990, to December 2005. Certain criteria have been met. Each month, the sample firms that have made an acquisition in the previous one-, three- and five-years are placed into two groups according to whether the acquiring CEO has an employment contract in effect as of the announcement and effective dates: the contract portfolio where the acquiring CEO has an employment agreement and the non-contract group where the CEO does not have a contract. The monthly calendar time portfolio returns are computed as the value (equally)-weighted average (the weight being the market capitalization of the acquirers at the beginning of each month) of the returns of all acquirers in the same portfolio. The weighted least squares regressions (the weight equals the number of acquisitions each month) are run of monthly calendar time portfolio returns net of the risk-free rate on four factors: the market return minus the risk-free rate (*Rm-Rf*), returns on a portfolio of small firms minus returns on a portfolio of big firms (*SMB*), returns on a high BM portfolio minus returns on a low BM portfolio (*HML*), and returns on a high momentum portfolio minus returns on a low momentum portfolio (*UMD*). The regression equation is as follows:

$$R_t - R_f = \alpha + \beta_1(R_{m,t} - R_f) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$$

The time horizon for the monthly calendar time portfolio returns are one, three and five years, that is, for firms that have taken a merger or acquisition within the past one, three, and five years. Both equally-weighted and value-weighted regressions are shown. The *t*-statistics from weighted least squares regressions are shown in the brackets. ***, **, and * denotes significantly from zero at the 1%, 5%, and 10% level in a two-sided test, respectively.

Value Weighted Portfolio

Variables	One Year (%)			Three Years (%)			Five Years (%)		
	Contract	Non-Contract	Long Con. Short Non	Contract	Non-Contract	Long Con. Short Non	Contract	Non-Contract	Long Con. Short Non
Intercept	**0.89***	**0.68***	**0.20**	**1.21***	**0.68***	**0.56****	**1.00***	**0.72***	**0.28**
	(5.42)	*(5.75)*	*(1.01)*	*(5.20)*	*(4.05)*	*(1.96)*	*(5.97)*	*(7.00)*	*(1.49)*
Rm-Rf	1.10***	0.98***	0.14***	1.02***	0.98***	0.07	1.12***	0.96***	0.17***
	(25.90)	*(31.59)*	*(2.73)*	*(17.01)*	*(22.14)*	*(0.91)*	*(26.01)*	*(36.24)*	*(3.46)*
SMB	-0.19***	-0.10***	-0.08	-0.17***	0.01	-0.16**	-0.24***	-0.12***	-0.12**
	(-4.36)	*(-3.14)*	*(1.60)*	*(-2.72)*	*(0.12)*	*(-2.12)*	*(-5.51)*	*(-4.40)*	*(-2.37)*
HML	0.14**	0.07*	0.08	-0.03	-0.02	0.01	0.11**	0.04	0.08
	(2.51)	*(1.79)*	*(1.18)*	*(-0.37)*	*(-0.33)*	*(0.07)*	*(2.05)*	*(1.30)*	*(1.21)*
UMD	-0.18***	0.07***	-0.25***	-0.22***	0.18***	-0.41***	-0.12***	0.07***	-0.20***
	(-6.38)	*(3.10)*	*(-7.21)*	*(-5.29)*	*(5.89)*	*(-7.87)*	*(-4.20)*	*(4.15)*	*(-5.94)*
Adjusted R²	85.0%	88.0%	30.8%	73.2%	80.3%	30.2%	84.7%	90.7%	29.0%

Equally Weighted Portfolio

Variables	One Year (%)			Three Years (%)			Five Years (%)		
	Contract	Non-Contract	Long Con. Short Non	Contract	Non-Contract	Long Con. Short Non	Contract	Non-Contract	Long Con. Short Non
Intercept	**0.39****	**0.37****	**0.05**	**0.56***	**0.51***	**0.11**	**0.44***	**0.45***	**0.02**
	(2.52)	*(2.63)*	*(0.32)*	*(2.91)*	*(3.02)*	*(0.50)*	*(2.93)*	*(3.63)*	*(0.13)*
Rm-Rf	1.20***	1.16***	0.04	1.19***	1.15***	0.05	1.20***	1.15***	0.05
	(29.60)	*(31.42)*	*(1.07)*	*(23.99)*	*(25.68)*	*(0.94)*	*(31.27)*	*(36.00)*	*(1.54)*
SMB	0.12***	0.15***	-0.02	0.12**	0.18***	-0.04	0.08**	0.15***	-0.07*
	(2.94)	*(3.93)*	*(-0.50)*	*(2.35)*	*(3.95)*	*(-0.73)*	*(2.17)*	*(4.67)*	*(-1.82)*
HML	0.56***	0.29***	0.27***	0.42***	0.13**	0.30***	0.57***	0.38***	0.18***
	(11.00)	*(6.13)*	*(5.09)*	*(6.52)*	*(2.28)*	*(3.97)*	*(11.73)*	*(9.42)*	*(4.07)*
UMD	-0.13***	-0.19***	0.06**	-0.17***	0.04	-0.21***	-0.12***	-0.18***	0.07***
	(-4.91)	*(-7.61)*	*(2.04)*	*(-4.84)*	*(1.25)*	*(-5.36)*	*(-4.58)*	*(-8.54)*	*(2.78)*
Adjusted R²	85.4%	88.7%	18.5%	80.2%	83.7%	26.0%	86.7%	90.7%	16.3%

Table 6.6 CEO Employment Contracts and Acquisition Premiums: Cash vs. Stock

This table examines the impact of CEO contracts on acquisition premiums across cash and stock deals. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Certain criteria are met. Cash refers to acquisitions financed with 100 percent cash and stock to acquisitions financed by a combination of cash, and/or equity and debt. Contract group refers to acquisitions made by CEOs with employment contracts as of the announcement date and the non-contract group to deals by CEOs without contracts. Acquisition premium is defined as the following:

$$\text{Acquisition Premium} = \frac{\text{(Highest Target Share Price Paid by Acquirer-Target Share Price 4 Weeks Prior)}}{\text{Target Share Price 4 Weeks Prior to the Announcement}}$$

The *t*-statistic of difference between means and *z*-statistic from the Wilcoxon rank sum test for difference between the medians are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)
		Cash				Stock			
Premium (%)	Mean	45.49	36.40	50.83	-1.98**	41.74	40.66	42.72	-0.69
	Median	39.92	31.58	48.60	-1.91*	36.41	36.24	37.54	-0.97
	No. of Obs.	73	27	46		446	213	233	

Table 6.7 CEO Employment Contracts and Acquirer Announcement Period Return: Cash vs. Stock

The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Certain criteria are met. Cash refers to acquisitions financed with 100 percent cash and stock to acquisitions financed by a combination of cash, and/or equity and debt. Contract group refers to acquisitions made by CEOs with employment contracts as of the announcement date and the non-contract group to deals by CEOs without pacts. CAR (-1, +1) is the three- and CAR(-2, +2) is the five-day cumulative abnormal return around the announcement date (day 0), computed using raw returns net of the CRSP value-weighted market returns. *T*-statistic of difference between means and *z*-statistic from the Wilcoxon rank sum test for difference between the medians are reported. Panel D reports estimations of the intercepts from the four factor weighted least squares regressions of calendar time portfolio returns. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)
		Cash				**Stock**			
CAR (-1, +1) (%)	Mean	1.27***	1.80***	0.79**	1.87*	-0.91**	-1.15***	-0.70	-0.61
	Median	0.85***	1.76***	0.45**	2.55**	-0.83***	-1.06***	-0.75***	-0.70
	No. of Obs.	386	183	203		696	329	367	
CAR (-2, +2) (%)	Mean	1.62***	2.11***	1.19***	1.34	-0.45	-0.77	-0.16	-0.75
	Median	1.05***	1.67***	0.38**	1.92*	-0.56	-0.66	-0.42	-0.72
	No. of Obs.	386	183	203		696	329	367	

Table 6.8 CEO Employment Contracts and Acquirer Post-Acquisition BHAR: Cash vs. Stock

This table investigates the relation between CEO employment contracts and acquirer post-acquisition buy-and-hold abnormal return (BHAR) over one-, three- and five-year windows, across cash and stock deals The benchmark is the value- and equally-weighted returns on a matched size-and-B/M portfolio. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Cash refers to acquisitions financed with 100 percent cash and stock to acquisitions financed by a combination of cash, and/or equity and debt. Certain criteria are met. Contract group refers to acquisitions made by CEOs with an employment contracts as of the announcement date and the non-contract group to deals by CEOs without contracts. The buy-and-hold abnormal return on firm i, $BHAR_i$, is calculated as

$$BHAR_i = \left\{ \left[\prod_{t=1}^{T} \left(1 + R_{i,t}\right) - 1 \right] - \left[\prod_{t=1}^{T} \left(1 + R_{benchmark,t}\right) - 1 \right] \right\} \times 100 \, ,$$

where t=1 is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one-, three- and five-year anniversary date since the effective acquisition date, or the acquiring firm's delisting date, whichever is earlier. $R_{benchmark,t}$ is value- and equally-weighted return on a matched size and book-to-market portfolio return over the same holding period as the sample firm, weight being firm market capitalization at the end of previous June within the same size and book-to-market bracket. T-statistic of difference between the means and z-statistic from the Wilcoxon rank sum test for difference between the medians are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)
		Cash				Stock			
Value-Weighted Benchmark Return									
One Year (%)	Mean	8.55	11.16	6.19	0.88	7.62	5.27	9.72	-0.83
	Median	0.20	1.23	-0.13	0.25	-0.45	0.04	-1.65	0.77
	No. of Obs.	386	183	203		697	329	368	
Three Years (%)	Mean	41.54	74.04	12.25	2.52**	13.19	25.11	2.53	1.42
	Median	-1.00	8.69	-3.36	1.60	-11.88	-6.73	-16.80	1.46
	No. of Obs.	386	183	203		697	329	368	
Five Years (%)	Mean	96.7	85.6	106.8	-0.29	47.6	86.7	12.6	1.71*
	Median	-3.1	8.6	-15.3	2.43**	-15.8	-13.3	-19.5	1.16
	No. of Obs.	386	183	203		697	329	368	
Equally-Weighted Benchmark Return									
One Year (%)	Mean	6.53	9.17	4.15	0.85	6.9	4.0	9.4	-1.02
	Median	-0.16	-1.65	-0.02	-0.22	-1.6	-1.4	-2.5	0.46
	No. of Obs.	386	183	203		697	329	368	
Three Years (%)	Mean	33.60	68.11	2.49	2.68***	12.1	22.5	2.8	1.23
	Median	-7.26	0.42	-10.79	1.95*	-16.8	-11.4	-20.2	1.26
	No. of Obs.					697	329	368	
Five Years (%)	Mean	76.9	70.2	82.9	-0.18	41.9	76.8	10.7	1.46
	Median	-11.4	1.0	-22.1	2.24**	-22.9	-17.1	-26.6	0.99
	No. of Obs.	386	183	203		697	329	368	

Table 6.9 CEO Employment Contracts and Acquirer Post-Acquisition CAR: Cash vs. Stock

This table examines the relation between CEO employment contracts and acquirer post-acquisition cumulative abnormal return (CAR) over one-, three- and five-year windows, across cash and tock deals. The benchmark is the value- and equally-weighted returns on a matched size-and-B/M portfolio. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Certain criteria are met. Cash refers to acquisitions financed with 100 percent cash and stock to acquisitions financed by a combination of cash, and/or equity and debt. Contract group refers to acquisitions made by CEOs with an employment contracts as of the announcement date and the non-contract group to deals by CEOs without contracts. The cumulative abnormal return on firm i, CAR_i, is computed as

$$CAR_i = \left[\sum_{t=1}^{T} (R_{i,t} - R_{benchmark,t}) \right] \times 100 ,$$

where t=1 is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one-, three- and five-year anniversary date since the effective acquisition date, or the acquiring firm's delisting date, whichever is earlier. $R_{benchmark,t}$ is value- and equally-weighted return on a matched size and book-to-market portfolio return over the same period as the sample firm, weight being firm market capitalization at the end of previous June. T-statistic of difference between the means and z-statistic from the Wilcoxon rank sum test for difference between the medians are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (t/Z-Stat.)	Full Sample	Contract	Non-Contract	Difference (t/Z-Stat.)
		Cash				Stock			
Value-Weighted Benchmark Return									
One Year (%)	Mean	6.8	8.0	5.7	0.68	5.5	5.3	5.7	-0.12
	Median	4.6	4.5	4.7	-0.22	2.7	4.4	1.9	0.78
	No. of Obs.	386	183	203		697	329	368	
Three Years (%)	Mean	18.1	26.7	10.3	2.49**	7.8	10.5	5.4	1.03
	Median	10.0	15.3	4.1	2.03**	3.7	4.7	3.2	0.88
	No. of Obs.	386	183	203		697	329	368	
Five Years (%)	Mean	27.2	35.3	19.9	2.04**	19.1	21.3	17.1	0.71
	Median	13.7	22.9	5.2	2.68**	8.2	8.2	8.0	0.46
	No. of Obs.	386	183	203		697	329	368	
Equally-Weighted Benchmark Return									
One Year (%)	Mean	5.4	6.5	4.4	0.59	4.7%	4.2%	5.2%	-0.33
	Median	4.4	3.4	4.4	-0.16	2.0%	2.8%	1.0%	0.49
	No. of Obs.	386	183	203		697	329	368	
Three Years (%)	Mean	13.9	22.6	6.0	2.51**	5.6%	7.7%	3.8%	0.78
	Median	7.6	12.4	-1.2	2.29**	2.3%	4.2%	1.1%	0.76
	No. of Obs.	386	183	203		697	329	368	
Five Years (%)	Mean	20.6	28.5	13.4	2.06**	14.3%	15.5%	13.3%	0.37
	Median	10.5	22.6	-0.2	2.94***	6.1%	6.9%	5.0%	0.45
	No. of Obs.	386	183	203		697	329	368	

Table 6.10 Four Factor Regression and Calendar Time Portfolio: Cash vs. Stock

The full sample consists of 1083 completed acquisitions made by the S&P 500 companies during the period January 1, 1990, to December 2005. Certain criteria have been met. Cash refers to acquisitions financed with 100 percent cash and stock to acquisitions financed by a combination of cash, and/or equity and debt. Panel A presents results on cash deals and Panel B on stock deals. Each month, the sample firms that have made a cash (stock) acquisition in the previous one-, three- and five-years are placed into two groups according to whether the acquiring CEO has an employment contract in effect as of the announcement and effective dates: the contract portfolio where the acquiring CEO has an employment agreement and the non-contract group where the CEO does not have a contract. The monthly calendar time portfolio returns are computed as the value (equally)-weighted average (the weight being the market capitalization of the acquirers at the beginning of each month) of the returns of all acquirers in the same portfolio. The weighted least squares regressions (the weight equals the number of acquisitions each month) are run of monthly calendar time portfolio returns net of the risk-free rate on four factors: the market return minus the risk-free rate (Rm-Rf), returns on a portfolio of small firms minus returns on a portfolio of big firms (SMB), returns on a high BM portfolio minus returns on a low BM portfolio (HML), and returns on a high momentum portfolio minus returns on a low momentum portfolio (UMD). The regression equation is as follows:

$$R_t - R_f = \alpha + \beta_1(R_{m,t} - R_f) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$$

The time horizon for the monthly calendar time portfolio returns are one, three and five years, that is, for firms that have taken a merger or acquisition within the past one, three, and five years. Both equally-weighted and value-weighted regressions are shown. The *t*-statistics from weighted least squares regressions are shown in the brackets. ***, **, and * denotes significantly from zero at the 1%, 5%, and 10% level in a two-sided test, respectively.

Panel A: Cash Deals

Value Weighted Portfolio

Variables	One Year (%)			Three Years (%)			Five Years (%)		
	Contract	Non-Contract	Long Con. Short Non	Contract	Non-Contract	Long Con. Short Non	Contract	Non-Contract	Long Con. Short Non
Intercept	0.94***	0.55***	0.36	0.92***	0.39	0.58	1.00***	0.81***	0.17
	(4.04)	*(2.88)*	*(1.31)*	*(3.21)*	*(1.48)*	*(1.56)*	*(5.83)*	*(4.97)*	*(0.78)*
Rm-Rf	1.10***	1.04***	0.10	1.02***	1.07***	-0.03	1.09***	0.91***	0.22***
	(18.14)	*(20.36)*	*(1.46)*	*(13.67)*	*(15.35)*	*(-0.32)*	*(24.70)*	*(21.27)*	*(3.76)*
SMB	-0.12*	-0.06	-0.07	-0.07	-0.06	-0.05	-0.09**	-0.09**	0.01
	(-1.89)	*(-1.06)*	*(-1.01)*	*(-0.90)*	*(-0.79)*	*(-0.48)*	*(-1.98)*	*(-2.14)*	*(0.10)*
HML	0.54***	0.36***	0.16*	0.44***	0.36***	0.03	0.46***	0.23***	0.24***
	(7.02)	*(5.38)*	*(1.87)*	*(4.56)*	*(3.83)*	*(0.24)*	*(8.17)*	*(4.15)*	*(3.24)*
UMD	0.10**	0.04	0.06	0.03	0.12**	-0.08	-0.04	0.03	-0.07*
	(2.47)	*(1.08)*	*(1.43)*	*(0.60)*	*(2.21)*	*(-1.14)*	*(-1.37)*	*(1.15)*	*(-1.79)*
Adjusted R^2	64.7%	71.1%	2.4%	51.6%	57.7%	1.5%	79.4%	74.1%	11.0%

Equally Weighted Portfolio

Variables	One Year (%)			Three Years (%)			Five Years (%)		
Intercept	0.51**	0.23	0.31	0.54*	0.39*	0.27	0.48**	0.39**	0.11
	(2.50)	*(1.28)*	*(1.45)*	*(1.95)*	*(1.70)*	*(0.81)*	*(2.67)*	*(2.47)*	*(0.65)*
Rm-Rf	1.17***	1.10***	0.09	1.17***	1.11***	0.06	1.19***	1.08***	0.13***
	(22.03)	*(22.65)*	*(1.62)*	*(16.05)*	*(18.31)*	*(0.68)*	*(25.51)*	*(26.01)*	*(2.94)*
SMB	0.13**	0.11**	0.02	0.11	0.12*	0.02	0.14***	0.14***	-0.00
	(2.48)	*(2.16)*	*(0.33)*	*(1.44)*	*(1.83)*	*(0.20)*	*(2.98)*	*(3.17)*	*(-0.02)*
HML	0.63***	0.53***	0.05	0.54***	0.49***	-0.01	0.67***	0.57***	0.07
	(9.34)	*(8.35)*	*(0.76)*	*(5.68)*	*(6.08)*	*(-0.13)*	*(11.30)*	*(10.60)*	*(1.36)*
UMD	0.01	-0.09**	0.11***	0.01	-0.02	0.03	-0.06**	-0.13***	0.08**
	(0.30)	*(-2.48)*	*(2.83)*	*(0.21)*	*(-0.33)*	*(0.45)*	*(-2.03)*	*(-4.59)*	*(2.56)*
Adjusted R^2	73.7%	76.0%	2.9%	59.8%	66.9%	-1.5%	80.0%	81.5%	4.0%

Panel B: Stock Deals

	Value Weighted Portfolio								
	One Year (%)			Three Years (%)			Five Years (%)		
Variables	**Contract**	**Non-Contract**	**Long Con. Short Non**	**Contract**	**Non-Contract**	**Long Con. Short Non**	**Contract**	**Non-Contract**	**Long Con. Short Non**
Intercept	**0.84*****	**0.69*****	**0.16**	**1.23*****	**0.80*****	**0.51**	**1.00*****	**0.69*****	**0.32**
	(4.48)	*(5.20)*	*(0.71)*	*(4.80)*	*(3.92)*	*(1.57)*	*(5.04)*	*(5.74)*	*(1.39)*
Rm-Rf	1.10***	0.96***	0.16**	1.02***	0.95***	0.09	1.12***	0.97***	0.16**
	(22.63)	*(28.14)*	*(2.60)*	*(15.49)*	*(17.62)*	*(1.10)*	*(22.13)*	*(31.38)*	*(2.72)*
SMB	-0.20***	-0.10***	-0.09	-0.17**	0.00	-0.17**	-0.28***	-0.12***	-0.16**
	(-4.03)	*(-2.87)*	*(-1.53)*	*(-2.47)*	*(0.04)*	*(-2.03)*	*(-5.38)*	*(-3.73)*	*(-2.64)*
HML	0.07	0.02	0.06	-0.09	-0.08	-0.00	0.02	0.01	0.01
	(1.09)	*(0.51)*	*(0.84)*	*(-1.03)*	*(-1.18)*	*(-0.00)*	*(0.34)*	*(0.33)*	*(0.20)*
UMD	-0.23***	0.06***	-0.29***	-0.26***	0.18***	-0.45***	-0.14***	0.08***	-0.22***
	(-7.13)	*(2.83)*	*(-7.24)*	*(-5.78)*	*(5.01)*	*(-7.69)*	*(-4.09)*	*(3.87)*	*(-5.49)*
Adjusted R^2	83.1%	86.5%	30.9%	72.0%	75.2%	29.6%	81.6%	88.6%	25.5%

	Equally Weighted Portfolio								
Intercept	**0.32***	**0.44****	**-0.07**	**0.54****	**0.60*****	**0.12**	**0.41****	**0.48*****	**-0.02**
	(1.86)	*(2.59)*	*(-0.34)*	*(2.38)*	*(2.86)*	*(0.42)*	*(2.42)*	*(3.35)*	*(-0.14)*
Rm-Rf	1.21***	1.18***	0.04	1.20***	1.17***	0.05	1.20***	1.17***	0.03
	(27.22)	*(26.98)*	*(0.69)*	*(20.38)*	*(21.25)*	*(0.69)*	*(27.76)*	*(32.18)*	*(0.55)*
SMB	0.11**	0.16***	-0.04	0.12**	0.17***	-0.07	0.05	0.16***	-0.10***
	(2.50)	*(3.63)*	*(-0.77)*	*(2.08)*	*(3.23)*	*(-1.00)*	*(1.23)*	*(4.23)*	*(-2.09)*
HML	0.53***	0.20***	0.34***	0.36***	0.00	0.33***	0.52***	0.30***	0.21***
	(9.37)	*(3.56)*	*(5.00)*	*(4.71)*	*(0.04)*	*(3.60)*	*(9.43)*	*(6.57)*	*(3.53)*
UMD	-0.21***	-0.23***	0.02	-0.26***	0.05	-0.32***	-0.15***	-0.20***	0.05*
	(-7.06)	*(-7.94)*	*(0.60)*	*(-6.41)*	*(1.38)*	*(-6.55)*	*(-5.05)*	*(-8.31)*	*(1.70)*
Adjusted R^2	84.8%	87.0%	19.6%	77.2%	80.9%	30.2%	84.6%	89.8%	15.7%

Table 6.11 CEO Employment Contracts and Acquisition Premiums: Merger vs. Tender Offer

This table provides analysis on acquisition premiums across mergers and tender offers. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Certain criteria are met. Mergers are transactions identified as a merger by SDC. Tender offers are transactions explicitly identified by SDC as tender offers. Contract group refers to acquisitions made by CEOs with employment contracts as of the announcement date and the non-contract group to deals by CEOs without pacts. Acquisition premium is defined as the following:

$$\text{Acquisition Premium} = \frac{\text{(Highest Target Share Price Paid by Acquirer-Target Share Price 4 Weeks Prior)}}{\text{Target Share Price 4 Weeks Prior to the Announcement}}$$

The *t*-statistic of difference between means and *z*-statistic from the Wilcoxon rank sum test for difference between the medians are reported. Panel D reports estimations of the intercepts from the four factor weighted least squares regressions of calendar time portfolio returns. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)
				Merger				Tender Offer	
Premium (%)	Mean	40.33	38.29	42.25	-1.34	51.38	52.42	50.82	0.19
	Median	35.18	34.15	37.78	-1.27	49.73	48.36	50.90	-0.45
	No. of Obs.	428	208	220		91	32	59	

Table 6.12 CEO Employment Contracts and Acquirer Announcement Period Return: Merger vs. Tender Offer

This table presents analysis on acquirer announcement return across mergers and tender offers. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Certain criteria are met. Mergers are transactions identified as a merger by SDC. Tender offers are transactions explicitly identified by SDC as tender offers. Contract group refers to acquisitions made by CEOs with employment contracts as of the announcement date and the non-contract group to deals by CEOs without pacts. CAR (-1, +1) is the three- and CAR(-2, +2) is the five-day cumulative abnormal return around the announcement date (day 0), computed using raw returns net of the CRSP value-weighted market returns. The t-statistic of difference between means and z-statistic from the Wilcoxon rank sum test for difference between the medians are reported. Panel D reports estimations of the intercepts from the four factor weighted least squares regressions of calendar time portfolio returns. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (t/Z-Stat.)	Full Sample	Contract	Non-Contract	Difference (t/Z-Stat.)
		Merger				**Tender Offer**			
CAR (-1, +1) (%)	Mean	-0.07	-0.04	-0.09	0.09	-0.85	-0.80	-0.87	0.06
	Median	0.06	0.22	-0.16	0.47	-0.09	0.24	-0.58	0.05
	No. of Obs.	987	477	510		95	35	60	
CAR (-2, +2) (%)	Mean	0.09	0.16	0.02	0.12	-0.61	-1.91	0.16	-1.57
	Median	-0.31	-0.14	-0.46	0.68	-0.30	-0.26	-0.35	1.40
	No. of Obs.	987	477	510		95	35	60	

Table 6.13 CEO Employment Contracts and Acquirer Post-Acquisition BHAR: Merger vs. Tender Offer

This table investigates the relation between CEO employment contracts and acquirer post-acquisition buy-and-hold abnormal return (BHAR) over one-, three- and five-year windows, across mergers and tender offers The benchmark is the value- and equally-weighted returns on a matched size-and-B/M portfolio. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Mergers are transactions identified as a merger by SDC. Tender offers are transactions explicitly identified by SDC as tender offers. Certain criteria are met. Contract group refers to acquisitions made by CEOs with an employment contracts as of the announcement date and the non-contract group to deals by CEOs without contracts. The buy-and-hold abnormal return on firm i, $BHAR_i$, is calculated as

$$ BHAR_i = \left\{ \left[\prod_{t=1}^{T} \left(1 + R_{i,t}\right) - 1 \right] - \left[\prod_{t=1}^{T} \left(1 + R_{benchmark,t}\right) - 1 \right] \right\} \times 100 \text{ ,} $$

where $t=1$ is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one-, three- and five-year anniversary date since the effective acquisition date, or the acquiring firm's delisting date, whichever is earlier. $R_{benchmark,t}$ is value- and equally-weighted return on a matched size and book-to-market portfolio return over the same holding period as the sample firm, weight being firm market capitalization at the end of previous June within the same size and book-to-market bracket. T-statistic of difference between the means and z-statistic from the Wilcoxon rank sum test for difference between the medians are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)
			Merger				Tender Offer		
			Value-Weighted Benchmark Return						
One Year (%)	Mean	8.32	7.89	8.73	-0.20	4.07	0.41	6.20	-0.76
	Median	-0.29	0.49	-0.99	0.60	-0.94	-0.47	-1.11	0.22
	No. of Obs.	988	477	511		95	35	60	
Three Years (%)	Mean	25.68	46.53	6.22	2.75***	-1.53	-11.06	4.03	-0.75
	Median	-7.95	-3.63	-13.29	2.18**	-11.78	-5.96	-12.71	0.20
	No. of Obs.	988	477	511		95	35	60	
Five Years (%)	Mean	70.62	93.74	49.04	1.06	7.75	-14.99	21.01	-0.75
	Median	-10.53	-2.76	-15.81	2.18**	-30.53	-14.85	-30.89	0.41
	No. of Obs.	988	477	511		95	35	60	
			Equally-Weighted Benchmark Return						
One Year (%)	Mean	7.05	6.16	7.88	-0.40	3.49	1.41	4.70	-0.42
	Median	-1.56	-1.46	-1.75	0.22	-1.08	-0.16	-1.09	0.06
	No. of Obs.	988	477	511		95	35	60	
Three Years (%)	Mean	21.76	42.16	2.71	2.71***	-0.89	-6.63	2.46	-0.46
	Median	-12.03	-6.08	-18.47	2.20**	-16.61	-10.78	-18.62	0.18
	No. of Obs.	988	477	511		95	35	60	
Five Years (%)	Mean	59.01	80.87	38.60	1.02	6.20	-12.74	17.25	-0.76
	Median	-18.31	-9.75	-23.48	1.85*	-32.16	-2.30	-42.43	0.88
	No. of Obs.	988	477	511		95	35	60	-0.42

Table 6.14 CEO Employment Contracts and Acquirer Post-Acquisition CAR: Merger vs. Tender Offer

This table examines the relation between CEO employment contracts and acquirer post-acquisition cumulative abnormal return (CAR) over one-, three- and five-year windows, across mergers and tock tender offers. The benchmark is the value- and equally-weighted returns on a matched size-and-B/M portfolio. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Mergers are transactions identified as a merger by SDC. Tender offers are transactions explicitly identified by SDC as tender offers. Certain criteria are met. Cash refers to acquisitions financed with 100 percent cash and stock to acquisitions financed by a combination of cash, and/or equity and debt. Contract group refers to acquisitions made by CEOs with an employment contracts as of the announcement date and the non-contract group to deals by CEOs without contracts. The cumulative abnormal return on firm i, CAR_i, is computed as

$$CAR_i = \left[\sum_{t=1}^{T} (R_{i,t} - R_{benchmark,t}) \right] \times 100 \text{ ,}$$

where t=1 is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one-, three- and five-year anniversary date since the effective acquisition date, or the acquiring firm's delisting date, whichever is earlier. $R_{benchmark,t}$ is value- and equally-weighted return on a matched size and book-to-market portfolio return over the same period as the sample firm, weight being firm market capitalization at the end of previous June. T-statistic of difference between the means and z-statistic from the Wilcoxon rank sum test for difference between the medians are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)	Full Sample	Contract	Non-Contract	Difference (*t*/Z-Stat.)
		Merger				**Tender Offer**			
		Value-Weighted Benchmark Return							
One Year (%)	Mean	6.02	6.37	5.70	0.26	5.33	5.04	5.50	-0.08
	Median	2.94	4.35	2.31	0.83	5.84	5.84	5.34	0.03
	No. of Obs.	988	477	511		95	35	60	
Three Years (%)	Mean	12.17	17.74	6.97	2.58**	4.02	-3.58	8.46	-0.97
	Median	5.93	9.23	3.34	2.08**	4.25	4.25	4.35	-0.62
	No. of Obs.	988	477	511		95	35	60	
Five Years (%)	Mean	23.33	28.30	18.69	1.98**	7.60	-1.52	12.92	-0.94
	Median	11.78	15.26	8.16	1.87*	3.62	12.79	1.12	0.03
	No. of Obs.	988	477	511		95	35	60	
		Equally-Weighted Benchmark Return							
One Year (%)	Mean	4.98	4.96	5.00	-0.01	4.80	5.72	4.26	0.24
	Median	2.80	3.25	2.41	0.47	3.93	3.93	3.22	0.29
	No. of Obs.	988	477	511		95	35	60	
Three Years (%)	Mean	9.13	14.15	4.43	2.32**	2.58	-2.66	5.64	-0.67
	Median	3.83	7.63	0.63	2.09**	1.96	2.74	0.88	0.21
	No. of Obs.	988	477	511		95	35	60	
Five Years (%)	Mean	17.75	21.82	13.95	1.62	3.86	-2.93	7.82	-0.70
	Median	7.80	12.58	3.24	1.95*	-0.39	10.35	-5.51	0.26
	No. of Obs.	988	477	511		95	35	60	

Table 6.15 Four Factor Regression and Calendar Time Portfolio: Merger vs. Tender Offer

The full sample consists of 1083 completed acquisitions made by the S&P 500 companies during the period January 1, 1990, to December 2005. Certain criteria have been met. Mergers are transactions identified as a merger by SDC. Tender offers are transactions explicitly identified by SDC as tender offers. Panel A presents results on mergers and Panel B on tender offers. Each month, the sample firms that have undertaken a merger (tender offer) in the previous one-, three- and five-years are placed into two groups according to whether the acquiring CEO has an employment contract in effect as of the announcement and effective dates: the contract portfolio where the acquiring CEO has an employment agreement and the non-contract group where the CEO does not have a contract. The monthly calendar time portfolio returns are computed as the value (equally)-weighted average (the weight being the market capitalization of the acquirers at the beginning of each month) of the returns of all acquirers in the same portfolio. The weighted least squares regressions (the weight equals the number of acquisitions each month) are run of monthly calendar time portfolio returns net of the risk-free rate on four factors: the market return minus the risk-free rate (*Rm-Rf*), returns on a portfolio of small firms minus returns on a portfolio of big firms (*SMB*), returns on a high BM portfolio minus returns on a low BM portfolio (*HML*), and returns on a high momentum portfolio minus returns on a low momentum portfolio (*UMD*). The regression equation is as follows:

$$R_t - R_f = \alpha + \beta_1 (R_{m,t} - R_f) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$$

The time horizon for the monthly calendar time portfolio returns are one, three and five years, that is, for firms that have taken a merger or acquisition within the past one, three, and five years. Both equally-weighted and value-weighted regressions are shown. The *t*-statistics from weighted least squares regressions are shown in the brackets. ***, **, and * denotes significantly from zero at the 1%, 5%, and 10% level in a two-sided test, respectively.

Panel A: Merger

	Value Weighted Portfolio								
	One Year (%)			Three Years (%)			Five Years (%)		
Variables	Contract	Non-Contract	Long Con. Short Non	Contract	Non-Contract	Long Con. Short Non	Contract	Non-Contract	Long Con. Short Non
Intercept	**0.89*****	**0.66*****	**0.21**	**1.21*****	**0.65*****	**0.59****	**1.00*****	**0.68*****	**0.31**
	(5.30)	*(5.39)*	*(1.08)*	*(5.19)*	*(3.76)*	*(2.05)*	*(5.68)*	*(6.40)*	*(1.59)*
Rm-Rf	1.11***	0.98***	0.15***	1.04***	0.98***	0.08	1.13***	0.96***	0.18***
	(25.36)	*(30.55)*	*(2.91)*	*(17.20)*	*(21.49)*	*(1.09)*	*(24.90)*	*(34.87)*	*(3.50)*
SMB	-0.18***	-0.11***	-0.06	-0.16**	-0.00	-0.15**	-0.25***	-0.12***	-0.12**
	(-4.04)	*(-3.29)*	*(-1.20)*	*(-2.65)*	*(-0.03)*	*(-1.97)*	*(-5.46)*	*(-4.35)*	*(-2.36)*
HML	0.14**	0.05	0.11	-0.02	-0.06	0.05	0.11*	0.03	0.09
	(2.60)	*(1.23)*	*(1.63)*	*(-0.27)*	*(-0.94)*	*(0.51)*	*(1.84)*	*(0.86)*	*(1.33)*
UMD	-0.19***	0.08***	-0.27***	-0.22***	0.20***	-0.43***	-0.12***	0.10***	-0.21***
	(-6.38)	*(3.73)*	*(-7.78)*	*(-5.16)*	*(6.34)*	*(-8.14)*	*(-3.76)*	*(5.13)*	*(-6.21)*
Adjusted R^2	84.4%	87.4%	33.7%	73.3%	80.0%	32.0%	83.5%	90.1%	30.4%

	Equally Weighted Portfolio								
Intercept	**0.44****	**0.37****	**0.09**	**0.58*****	**0.53*****	**0.10**	**0.48*****	**0.45*****	**0.05**
	(2.75)	*(2.46)*	*(0.55)*	*(2.98)*	*(3.06)*	*(0.43)*	*(3.12)*	*(3.51)*	*(0.34)*
Rm-Rf	1.19***	1.16***	0.03	1.18***	1.14***	0.05	1.19***	1.15***	0.04
	(28.70)	*(29.84)*	*(0.72)*	*(23.21)*	*(24.79)*	*(0.84)*	*(30.36)*	*(34.71)*	*(1.06)*
SMB	0.12***	0.14***	-0.01	0.12**	0.17***	-0.03	0.09**	0.15***	-0.06
	(2.99)	*(3.46)*	*(-0.12)*	*(2.32)*	*(3.56)*	*(-0.48)*	*(2.26)*	*(4.43)*	*(-1.52)*
HML	0.56***	0.25***	0.30***	0.40***	0.05	0.35***	0.56***	0.36***	0.19***
	(10.68)	*(5.09)*	*(5.48)*	*(6.02)*	*(0.90)*	*(4.71)*	*(11.31)*	*(8.57)*	*(4.12)*
UMD	-0.13***	-0.19***	0.06*	-0.17***	0.06**	-0.24***	-0.11***	-0.18***	0.06**
	(-4.71)	*(-7.04)*	*(1.94)*	*(-4.77)*	*(1.98)*	*(-6.08)*	*(-4.26)*	*(-7.74)*	*(2.51)*
Adjusted R^2	84.5%	87.7%	20.9%	79.2%	83.5%	32.1%	86.0%	90.2%	16.2%

Panel B: Tender Offer

	Value Weighted Portfolio								
	One Year (%)			Three Years (%)			Five Years (%)		
Variables	**Contract**	**Non-Contract**	**Long Con. Short Non**	**Contract**	**Non-Contract**	**Long Con. Short Non**	**Contract**	**Non-Contract**	**Long Con. Short Non**
Intercept	**0.85****	**0.76****	**0.29**	**0.81**	**0.89***	**0.12**	**1.14*****	**0.95*****	**0.33**
	(2.17)	*(2.15)*	*(0.58)*	*(1.38)*	*(1.79)*	*(0.14)*	*(3.09)*	*(2.92)*	*(0.77)*
Rm-Rf	1.14***	0.98***	0.11	1.11***	0.94***	0.23	1.03***	0.92***	0.08
	(11.35)	*(10.94)*	*(0.83)*	*(7.19)*	*(7.24)*	*(1.09)*	*(10.85)*	*(11.14)*	*(0.73)*
SMB	-0.26**	0.05	-0.29**	-0.18	0.08	-0.28	-0.07	-0.05	-0.02
	(-2.42)	*(0.58)*	*(-2.12)*	*(-1.13)*	*(0.66)*	*(-1.28)*	*(-0.77)*	*(-0.58)*	*(-0.22)*
HML	0.32**	0.35***	-0.05	0.37**	0.41**	-0.10	0.25**	0.23**	0.01
	(2.43)	*(3.13)*	*(-0.28)*	*(1.98)*	*(2.58)*	*(-0.37)*	*(2.06)*	*(2.22)*	*(0.04)*
UMD	-0.03	-0.13**	0.06	-0.09	-0.17**	0.06	-0.19***	-0.18***	-0.01
	(-0.48)	*(-2.27)*	*(0.61)*	*(-0.95)*	*(-2.07)*	*(0.45)*	*(-2.86)*	*(-3.33)*	*(-0.18)*
Adjusted R^2	54.4%	55.5%	0.9%	33.4%	35.1%	-0.4%	55.8%	58.8%	-2.3%

	Equally Weighted Portfolio								
Intercept	**-0.24**	**0.28**	**-0.40**	**0.31**	**0.20**	**0.27**	**-0.11**	**0.33**	**-0.36**
	(-0.76)	*(0.90)*	*(-0.97)*	*(0.63)*	*(0.49)*	*(0.42)*	*(-0.38)*	*(1.14)*	*(-0.97)*
Rm-Rf	1.27***	1.08***	0.16	1.30***	1.12***	0.24	1.30***	1.07***	0.20**
	(15.85)	*(13.61)*	*(1.47)*	*(9.95)*	*(10.43)*	*(1.44)*	*(17.77)*	*(14.52)*	*(2.12)*
SMB	0.02	0.20**	-0.15	0.07	0.19*	-0.11	0.01	0.15**	-0.14
	(0.29)	*(2.51)*	*(-1.37)*	*(0.50)*	*(1.81)*	*(-0.65)*	*(0.09)*	*(1.99)*	*(-1.41)*
HML	0.63***	0.55***	0.05	0.64***	0.60***	-0.02	0.68***	0.53***	0.13
	(5.99)	*(5.49)*	*(0.36)*	*(4.01)*	*(4.61)*	*(-0.09)*	*(7.22)*	*(5.76)*	*(1.05)*
UMD	-0.18***	-0.23***	0.03	-0.17**	-0.17**	0.00	-0.20***	-0.27***	0.07
	(-3.19)	*(-4.48)*	*(0.37)*	*(-2.05)*	*(-2.55)*	*(0.03)*	*(-3.96)*	*(-5.52)*	*(1.01)*
Adjusted R^2	71.0%	67.5%	0.1%	48.9%	51.7%	-0.2%	75.0%	70.8%	2.3%

Table 6.16 Do CEOs with Contracts Acquire Riskier Targets?

This table presents the uncertainty and risk about the targets The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Certain criteria are met. Contract group refers to acquisitions made by CEOs with an employment contract as of the announcement date, and the non-contract group to deals by CEOs without contracts. Relative deal size is the ratio of each transaction value to the acquirer market capitalization. The same 2-digit SIC code is a dummy variable equaling 1 if the acquirer and the target share the same 2-digit SIC code, and zero otherwise. The same Fama-French industry is a dummy variable, which equals one if the bidder and the target share the same Fama-French industry, and zero otherwise. Target R&D-to-PP&E is the ratio of target research and development expenditure to PP&E. Target q is target Tobin's q. Both target accounting ratios are measured at the fiscal year end prior to the announcement. Appendix provides detailed definitions. Column 6 reports the t-statistics of difference between means and z-statistics of difference between medians. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (t/Z-Stat.)
Relative Deal Size	Mean	0.33	0.37	0.29	2.92***
	Median	0.14	0.15	0.14	1.92*
	No. of Obs.	1083	512	571	
The Same 2-Digit SIC Code	Mean	0.50	0.46	0.53	-2.30**
	Median	0.00	0.00	1.00	-2.30**
	No. of Obs.	1081	510	571	
The Same Fama-French Industry	Mean	0.69	0.66	0.73	-2.50***
	Median	1.00	1.00	1.00	-2.49***
	No. of Obs.	1081	510	571	
Target R&D-to-PP&E	Mean	0.76	0.93	0.65	2.02**
	Median	0.25	0.31	0.19	1.84*
	No. of Obs.	219	88	131	
Target q	Mean	2.09	2.05	2.12	-0.52
	Median	1.49	1.50	1.45	-0.06
	No. of Obs.	490	229	261	

Table 6.17 Changes in Acquirer Risk Following Acquisitions

This table analyses changes in acquirer risk post- versus pre-acquisitions. The full sample consists of 1,083 acquisitions completed by the S&P 500 firms during 1/1/1990-12/31/2005. Certain criteria are met. Contract group refers to acquisitions made by CEOs with an employment contract as of the announcement date, and the non-contract group to deals by CEOs without contracts. Relative deal size is the ratio of each transaction value to the acquirer market capitalization. The same 2-digit SIC code is a dummy variable equaling 1 if the acquirer and the target share the same 2-digit SIC code, and zero otherwise. The same Fama-French industry is a dummy variable, which equals one if the bidder and the target share the same Fama-French industry, and zero otherwise. The standard deviation of acquirer daily stock returns is computed during two time periods: The post-acquisition period is from 11 to 70 days following the effective date and the pre-acquisition period is from 120 to 61 days prior to the announcement date. ΔStdev.Raw is the difference between the post- and pre-acquisition standard deviations of bidder daily stock returns. ΔStdev.VW is the difference between the post- and pre-acquisition standard deviations of acquirer daily stock returns net of the value-weighted CRSP market return. ΔStdev.EW is the difference between the post- and pre-acquisition standard deviations of acquirer daily returns net of the equally-weighted CRSP market return. ΔAcquirer q is the difference between acquirer q ratio measured at the fiscal year end two years following the effective date and the ratio at the fiscal year end preceding the announcement. ΔCapex-to-Assets is the difference between the capital expenditure to total assets ratio of acquirers measured at the fiscal year end two years following the effective date and the ratio at the fiscal year end preceding the announcement. ΔCapex-to-PP&E is the difference between bidder capital expenditure to PP&E measured at the fiscal year end two years following the effective date and the ratio at the fiscal year end prior to the announcement. Appendix provides detailed definitions. Column 6 reports the t-statistics of difference between means and z-statistics of difference between medians. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Variable	Statistics	Full Sample	Contract	Non-Contract	Difference (t/Z-Stat.)
Δ Stdev.Raw (%)	Mean	-0.01	0.05	-0.07	1.73*
	Median	-0.01	0.00	-0.02	0.71
	No. of Obs.	1076	507	569	
Δ Stdev.VW (%)	Mean	-0.02	0.04	-0.08	1.80*
	Median	-0.02	-0.01	-0.03	0.63
	No. of Obs.	1076	507	569	
Δ Stdev.EW (%)	Mean	-0.02	0.04	-0.08	1.82*
	Median	-0.01	0.00	-0.03	0.72
	No. of Obs.	1076	507	569	
Δ Acquirer q	Mean	-0.57	-0.37	-0.73	2.17**
	Median	-0.06	-0.08	-0.05	-1.04
	No. of Obs.	903	406	497	
Δ Capex-to-Assets (%)	Mean	-0.90	-0.45	-1.24	2.07**
	Median	-0.57	-0.34	-0.80	2.65***
	No. of Obs.	754	330	424	
Δ Capex-to-PP&E (%)	Mean	-3.16	-1.98	-4.03	2.48***
	Median	-1.25	-1.19	-1.30	1.25
	No. of Obs.	739	316	423	

Table 7.1 Regressions of Post-Acquisition Long-Run BHAR on CEO Contracts: 1990-2005

The full sample consists of 1083 completed acquisitions made by the S&P 500 companies during the period January 1, 1990, to December 2005. Certain criteria have been met. The dependent variable is, respectively, the one-, three- and five-year post-acquisition buy-and-hold or cumulative abnormal returns of the acquiring firms. The buy-and-hold abnormal return on firm i, BHR_i, is calculated as

$$BHAR_i = \left\{ \left[\prod_{t=1}^{T} \left(1 + R_{i,t}\right) - 1 \right] - \left[\prod_{t=1}^{T} \left(1 + R_{benchmark,t}\right) - 1 \right] \right\} \times 100 \ ,$$

where $t=1$ is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one-, three- and five-year anniversary date since the effective acquisition date, or the acquiring firm's delisting date, whichever is earlier. $R_{benchmark,t}$ is the return on a matched size and book-to-market portfolio return over the same holding period as the sample firm. For value-weighted returns, the benchmark portfolio returns are weighted by firm market capitalization measured at the end of June in previous year within the same size and book-to-market bracket. Contract is a dummy variable equaling one if the acquiring firm's CEO has a contract as of the announcement date; and zero otherwise. Size is the natural logarithm of the total assets at the fiscal year end prior to acquisition announcement. Relative deal value is the ratio of total deal value of the acquisition to acquirer market capitalization measured one month prior to the announcement date. Financed by cash only is a dummy equaling one if the purchase of the target is financed with 100% cash and zero otherwise. Car (-2, +2) is the five-day cumulative abnormal returns of acquiring firms around the announcement date. Tender offer is one if the deal is identified as a tender offer by SDC and zero if it is a merger. Options based compensation is the ratio of the value of new stock options (using modified Black-Scholes method) granted to the top five executive to their total compensation. Private target is an index variable, which equals one is the target status is private and zero otherwise. Subsidiary target is a dummy variable equaling one if the target is a subsidiary as defined by SDC. G-Index is the anti-takeover provisions index constructed as in Gompers *et al.* (2003). Appendix provides the definitions of all accounting ratios in the tests. All accounting and compensation variables are measured at the fiscal year end prior to the acquisition announcement and winsorized at the 1% and 99% levels. *T*-statistics based on the White (1980) heteroskedasticity-consistent standard errors are reported in the brackets. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Panel A: BHAR Adjusted by Value-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

Independent Variable	One Year BHAR			Three Years BHAR			Five Years BHAR		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	0.08***	-0.03	-0.32	0.06	0.62	-0.42	0.46	1.25	0.14
	(2.73)	(-0.13)	(-1.39)	(0.96)	(1.49)	(-1.07)	(1.79)	(1.28)	(0.22)
Contract	**-0.01**	**0.06***	**0.02**	**0.37***	**0.27***	**0.15****	**0.40**	**0.95***	**0.09**
	(-0.27)	*(1.67)*	*(0.66)*	*(2.68)*	*(3.18)*	*(2.10)*	*(1.03)*	*(1.94)*	*(0.87)*
Size		-0.03*	0.00		-0.10***	0.03		-0.30**	-0.04
		(-1.81)	(0.15)		(-2.63)	(0.89)		(-2.16)	(-0.81)
Tobin's *q*		0.16***	0.10**		0.02	0.05		-0.09	0.04
		(4.29)	(2.29)		(0.52)	(1.47)		(-0.91)	(0.85)
Leverage Ratio		0.06	0.12		0.22	0.25		0.18	0.94
		(0.32)	(0.66)		(0.60)	(0.76)		(0.19)	(1.61)
Free Cash Flow Ratio		-1.52**	0.08		1.37	1.25		0.29	3.47
		(-2.08)	(0.21)		(1.59)	(1.33)		(0.08)	(1.43)
Capex to PP&E		0.03	-0.02		0.78	0.12		9.10**	1.45
		(0.11)	(-0.09)		(1.50)	(0.27)		(2.11)	(1.23)
Relative Deal Value		0.12*	0.09		0.06	0.06		0.14	0.09
		(1.91)	(1.15)		(0.67)	(0.59)		(0.71)	(0.58)
Financed by Cash Only		0.04	-0.03		-0.01	0.01		-1.04*	-0.31
		(0.65)	(-0.60)		(-0.10)	(0.12)		(-1.78)	(-0.91)
CAR (-2, +2)		0.08	-0.04		0.62	1.01**		0.64	2.73**
		(0.22)	(-0.08)		(1.33)	(2.18)		(0.29)	(2.11)
Tender Offer		0.12**	0.13*		-0.07	0.02		0.64	-0.03
		(2.10)	(1.94)		(-0.55)	(0.19)		(1.30)	(-0.16)
Options Based Compensation		-0.29**	-0.09		-0.37*	-0.16		-2.22	-0.75
		(-3.00)	(-1.17)		(-1.85)	(-0.88)		(-1.43)	(-1.24)
Private Target		0.12	0.08		-0.02	0.16		0.58	0.04
		(1.47)	(1.03)		(-0.13)	(1.14)		(0.91)	(0.21)
Subsidiary Target		0.18**	0.21**		0.17	0.26**		1.44*	0.56
		(2.47)	(2.43)		(1.22)	(2.11)		(1.85)	(1.54)
G-Index			0.00			-0.02			-0.03
			(-0.01)			(-1.35)			(-1.16)
Adjusted R-Squared	0%	18%	9%	1%	6%	5%	0%	9%	6%
N	1083	698	611	1083	698	611	1083	698	611

Panel B: BHAR Adjusted by Equally-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

Independent Variable.	One Year BHAR			Three Years BHAR			Five Years BHAR		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	0.08**	0.08	-0.18	0.03	0.95**	-0.04	0.36	1.78*	0.76
	(2.43)	(0.37)	(-0.81)	(0.42)	(2.28)	(-0.11)	(1.46)	(1.79)	(1.22)
Contract	**-0.02**	**0.06**	**0.01**	**0.36*****	**0.27*****	**0.15****	**0.38**	**0.93***	**0.07**
	(-0.43)	*(1.50)*	*(0.43)*	*(2.67)*	*(3.16)*	*(2.06)*	*(1.00)*	*(1.90)*	*(0.63)*
Size		-0.04**	-0.01		-0.13***	-0.01		-0.36**	-0.10*
		(-2.26)	(-0.37)		(-3.41)	(-0.16)		(-2.56)	(-1.91)
Tobin's q		0.15***	0.09**		0.01	0.04		-0.10	0.02
		(4.19)	(2.20)		(0.43)	(1.23)		(-1.06)	(0.44)
Leverage Ratio		-0.04	0.01		-0.05	-0.02		-0.17	0.56
		(-0.22)	(0.06)		(-0.13)	(-0.07)		(-0.18)	(0.94)
Free Cash Flow Ratio		-1.62**	0.03		1.19	1.27		0.22	3.59
		(-2.22)	(0.08)		(1.41)	(1.39)		(0.06)	(1.49)
Capex to PP&E		0.00	-0.03		0.82	0.15		9.26**	1.53
		(0.02)	(-0.18)		(1.58)	(0.36)		(2.14)	(1.30)
Relative Deal Value		0.12**	0.09		0.07	0.06		0.16	0.08
		(1.98)	(1.16)		(0.85)	(0.60)		(0.83)	(0.50)
Financed by Cash Only		0.04	-0.02		-0.02	0.01		-1.02*	-0.28
		(0.64)	(-0.56)		(-0.17)	(0.09)		(-1.74)	(-0.83)
CAR (-2, +2)		0.14	0.03		0.72	1.06**		0.71	2.76**
		(0.37)	(0.06)		(1.60)	(2.27)		(0.32)	(2.13)
Tender Offer		0.12**	0.13*		-0.01	0.06		0.71	0.02
		(2.11)	(1.92)		(-0.12)	(0.57)		(1.45)	(0.09)
Options Based Compensation		-0.29***	-0.11		-0.44**	-0.25		-2.28	-0.79
		(-3.10)	(-1.40)		(-2.24)	(-1.36)		(-1.46)	(-1.30)
Private Target		0.13	0.09		0.03	0.19		0.65	0.08
		(1.57)	(1.14)		(0.21)	(1.36)		(1.02)	(0.44)
Subsidiary Target		0.18**	0.20**		0.20	0.29**		1.48*	0.58
		(2.44)	(2.38)		(1.41)	(2.28)		(1.88)	(1.60)
G-Index			0.00			-0.02			-0.03
			(-0.28)			(-1.48)			(-1.39)
Adjusted R-Squared	0.0%	18.3%	9.2%	0.7%	8.4%	5.6%	0.1%	9.6%	6.5%
N	1083	698	611	1083	698	611	1083	698	611

Table 7.2 Regressions of Post-Acquisition Long-Run CAR on CEO Contracts: 1990-2005

The full sample consists of 1083 completed acquisitions made by the S&P 500 companies during the period January 1, 1990, to December 2005. Certain criteria have been met. The dependent variable is, respectively, the one-, three- and five-year post-acquisition cumulative abnormal return on firm i, CAR_i, computed as

$$CAR_i = \left[\sum_{t=1}^{T} (R_{i,t} - R_{benchmark,t}) \right] \times 100 ,$$

where $t=1$ is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one-, three- and five-year anniversary date since the effective acquisition date, or the acquiring firm's delisting date, whichever is earlier. $R_{benchmark,t}$ is the return on a matched size and book-to-market portfolio return over the same holding period as the sample firm. For value-weighted returns, the benchmark portfolio returns are weighted by firm market capitalization measured at the end of June in previous year within the same size and book-to-market bracket. Contract is a dummy variable equaling one if the acquiring firm's CEO has a contract as of the announcement date; and zero otherwise. Size is the natural logarithm of the total assets at the fiscal year end prior to acquisition announcement. Relative deal value is the ratio of total deal value of the acquisition to acquirer market capitalization measured one month prior to the announcement date. Financed by cash only is a dummy equaling one if the purchase of the target is financed with 100% cash and zero otherwise. Car (-2, +2) is the five-day cumulative abnormal returns of acquiring firms around the announcement date. Tender offer is one if the deal is identified as a tender offer by SDC and zero if it is a merger. Options based compensation is the ratio of the value of new stock options (using modified Black-Scholes method) granted to the top five executive to their total compensation. Private target is an index variable, which equals one is the target status is private and zero otherwise. Subsidiary target is a dummy variable equaling one if the target is a subsidiary as defined by SDC. G-Index is the anti-takeover provisions index constructed as in Gompers *et al.* (2003). Appendix provides the definitions of all accounting ratios in the tests. All accounting and compensation variables are measured at the fiscal year end prior to the acquisition announcement and winsorized at the 1% and 99% levels. *T*-statistics based on the White (1980) heteroskedasticity-consistent standard errors are reported in the brackets. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Panel A: CAR Adjusted by Value-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

Independent Variable	One Year CAR			Three Years CAR			Five Years CAR		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	0.06***	0.06	-0.17	0.07***	0.63***	0.09	0.18***	0.91***	0.75**
	(3.43)	(0.42)	(-1.06)	(2.78)	(2.68)	(0.33)	(5.74)	(3.37)	(2.34)
Contract	**0.01**	**0.05***	**0.04**	**0.09***	**0.14***	**0.09***	**0.08***	**0.11***	**0.04**
	(0.25)	*(1.91)*	*(1.23)*	*(2.31)*	*(2.76)*	*(1.94)*	*(1.77)*	*(1.79)*	*(0.70)*
Size		-0.02*	0.00		-0.08***	-0.02		-0.13***	-0.08***
		(-1.85)	(0.20)		(-3.82)	(-0.91)		(-5.12)	(-3.05)
Tobin's q		0.11***	0.07***		0.07***	0.05**		0.06**	0.06*
		(5.45)	(2.94)		(3.22)	(1.99)		(2.29)	(1.80)
Leverage Ratio		-0.07	-0.03		0.04	0.12		0.47*	0.44
		(-0.48)	(-0.18)		(0.18)	(0.49)		(1.69)	(1.54)
Free Cash Flow Ratio		-0.75**	0.06		0.24	0.53		0.48	0.51
		(-2.04)	(0.17)		(0.47)	(0.94)		(0.78)	(0.77)
Capex to PP&E		-0.14	-0.18		-0.03	-0.20		0.51	0.04
		(-0.97)	(-1.23)		(-0.11)	(-0.81)		(1.53)	(0.14)
Relative Deal Value		0.06	0.03		0.06	0.07		0.08	0.06
		(1.37)	(0.50)		(1.08)	(1.21)		(1.32)	(0.89)
Financed by Cash Only		0.02	0.00		0.02	0.02		-0.08	-0.04
		(0.63)	(-0.09)		(0.39)	(0.28)		(-1.03)	(-0.59)
CAR (-2, +2)		0.11	0.16		0.06	0.39		0.07	0.78*
		(0.57)	(0.52)		(0.24)	(1.11)		(0.16)	(1.85)
Tender Offer		0.08*	0.08*		-0.02	0.01		-0.04	-0.07
		(1.88)	(1.84)		(-0.31)	(0.19)		(-0.48)	(-0.77)
Options Based Compensation		-0.18***	-0.05		-0.23**	-0.02		-0.26*	-0.17
		(-2.89)	(-0.83)		(-2.06)	(-0.18)		(-1.87)	(-1.32)
Private Target		0.05	0.02		0.00	0.06		-0.03	-0.03
		(0.97)	(0.33)		(0.00)	(0.67)		(-0.28)	(-0.33)
Subsidiary Target		0.09**	0.12**		0.09	0.14*		0.20**	0.15*
		(2.18)	(2.44)		(1.22)	(1.86)		(2.32)	(1.77)
G-Index			0.00			-0.01			-0.01
			(0.29)			(-0.98)			(-1.44)
Adjusted R-Squared	0.0%	17.2%	7.7%	0.5%	9.1%	4.7%	0.3%	12.1%	8.0%
N	1083	698	611	1083	698	611	1083	698	611

Panel B: CAR Adjusted by Equally-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

Independent Variable	One Year CAR			Three Years CAR			Five Years CAR		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	0.05***	0.16	-0.05	0.05*	0.89***	0.39	0.13***	1.25***	1.14***
	(2.97)	(1.12)	(-0.30)	(1.78)	(3.80)	(1.41)	(4.21)	(4.55)	(3.51)
Contract	**0.00**	**0.05***	**0.03**	**0.08****	**0.14****	**0.09****	**0.07**	**0.10***	**0.03**
	(0.04)	**(1.74)**	**(1.00)**	**(2.12)**	**(2.82)**	**(1.97)**	**(1.47)**	**(1.78)**	**(0.61)**
Size		-0.03**	-0.01		-0.11***	-0.05**		-0.16***	-0.12***
		(-2.45)	(-0.44)		(-4.86)	(-2.01)		(-6.36)	(-4.29)
Tobin's q		0.10***	0.06***		0.06***	0.04		0.04	0.04
		(5.23)	(2.80)		(2.64)	(1.46)		(1.62)	(1.15)
Leverage Ratio		-0.15	-0.12		-0.14	-0.07		0.28	0.23
		(-1.01)	(-0.75)		(-0.56)	(-0.29)		(1.00)	(0.79)
Free Cash Flow Ratio		-0.83**	0.02		0.13	0.53		0.39	0.52
		(-2.26)	(0.05)		(0.25)	(0.98)		(0.67)	(0.82)
Capex to PP&E		-0.17	-0.21		-0.02	-0.18		0.56*	0.08
		(-1.15)	(-1.41)		(-0.06)	(-0.74)		(1.68)	(0.26)
Relative Deal Value		0.06	0.03		0.07	0.07		0.08	0.05
		(1.45)	(0.51)		(1.21)	(1.15)		(1.39)	(0.71)
Financed by Cash Only		0.02	0.00		0.02	0.01		-0.07	-0.04
		(0.65)	(-0.03)		(0.25)	(0.19)		(-1.02)	(-0.56)
CAR (-2, +2)		0.17	0.23		0.14	0.45		0.11	0.81
		(0.85)	(0.77)		(0.54)	(1.31)		(0.28)	(1.95)
Tender Offer		0.08*	0.08*		0.01	0.04		-0.01	-0.04
		(1.90)	(1.83)		(0.07)	(0.53)		(-0.07)	(-0.47)
Options Based Compensation		-0.19***	-0.07		-0.28***	-0.08		-0.29**	-0.20
		(-3.03)	(-1.12)		(-2.56)	(-0.74)		(-2.12)	(-1.55)
Private Target		0.06	0.03		0.03	0.08		0.02	0.00
		(1.08)	(0.45)		(0.43)	(1.00)		(0.18)	(-0.02)
Subsidiary Target		0.09**	0.11**		0.11	0.15		0.22**	0.16
		(2.13)	(2.35)		(1.48)	(2.10)		(2.57)	(1.98)
G-Index			0.00			-0.01			-0.02*
			(0.02)			(-1.14)			(-1.65)
Adjusted R-Squared	0.0%	17.5%	7.8%	0.4%	11.8%	6.1%	0.2%	15.2%	10.4%
N	1083	698	611	1083	698	611	1083	698	611

Table 7.3 Cross-Sectional Variations in M&A Activities across Industries Categorized by CEO Employment Contracts

The full sample consists of 1,083 completed acquisitions made by the S&P 500 companies during 1/1/1990-12/31/2005. Certain criteria are met. Panel A presents the acquisition activities across the Fama-French 12 industries categorized by the presence of a CEO employment contract. Contract group refers to acquisitions made by CEOs with employment contracts as of the announcement date and the non-contract group to deals by CEOs without contracts. Panel B reports the probability values from tests assessing the null of no variation in acquisition activities between the contract and non-contract groups across the 12 Fama-French industries.

Panel A: Frequency of M&A Activity Across Fama-French 12 Industry Categorized by CEO Contracts

	No. of Obs.			% of Entire Sample			% Within Industry	
Fama-French 12 Industries	**Full Sample**	**Contract**	**Non-Contract**	**Full Sample**	**Contract**	**Non-Contract**	**Contract**	**Non-Contract**
1. Consumer Non-Durables	68	22	46	6.3%	2	4.3	32.4%	67.7
2. Consumer Durables	20	7	13	1.9	0.7	1.2	35	65
3. Manufacturing	120	38	82	11.1	3.5	7.6	31.7	68.3
4. Energy: Oil and Gas	67	36	31	6.2	3.3	2.9	53.7	46.3
5. Chemicals and Allied Products	30	7	23	2.8	0.7	2.1	23.3	76.7
6. Electronic Equipment: Computers, Software	166	58	108	15.3	5.3	10	35	65
7. Telephone and Television Transmission	66	45	21	6.1	4.2	1.9	68.2	31.8
8. Utilities	71	39	32	6.6	3.6	3	55	45
9. Shops: Wholesale & Retail	60	26	34	5.5	2.4	3.1	43.3	56.7
10. Healthcare, Medical Equipment & Drugs	88	43	45	8.2	4	4.2	48.9	51.1
11. Money: Finance	242	134	108	22.4	12.4	10	55.4	44.6
12. Other: Mines, Transp., Hotels & Entertain.	85	57	28	7.9	5.3	2.6	67.1	32.9
Total	1,083	512	571	100	47.3	52.7		

Panel B: Tests Comparing M&A Frequency Categorized by CEO Contracts Across Industries

	Probability Value		
Category	**Pearson Chi-Square**	**Likelihood Ratio**	**Mantel-Haenszel**
M&A Activity Categorized by CEO Contracts	<0.0001	<0.0001	<0.0001
Degree of Freedom	11	11	1

Table 7.4. Regressions of Long-Run Post-Acquisition BHAR on CEO Contracts and Industries

The full sample consists of 1,083 completed acquisitions made by the S&P 500 firms during 1/1/1990-12/31/2005. The dependent variable is one, three and five year acquirer BHAR, where the benchmark is the matched size-and-BM portfolio. Table 4.2 and Appendix provide definitions of the independent variables. The industry dummies are defined according to Fama-French 12 industries. The t-statistics based on White (1980) heteroskedasticity-consistent standard errors are reported in the brackets. ***, **, and * denote significance at the 1%, 5% and 10% levels in a two-sided test.

Panel A: BHAR Adjusted by Value-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

Independent Variable	One Year BHAR	Three Year BHAR	Five Year BHAR
Intercept	-0.03	0.23	0.39
	(-0.12)	(0.55)	(0.38)
Contract	**0.07***	**0.27***	**0.99***
	(1.67)	**(3.11)**	**(1.83)**
Size	-0.04**	-0.12***	-0.35**
	(-2.07)	(-2.85)	(-2.36)
Tobin's q	0.15***	0.02	-0.07
	(4.03)	(0.61)	(-0.73)
Leverage Ratio	-0.02	0.68*	1.39
	(-0.12)	(1.83)	(1.47)
Free Cash Flow Ratio	-1.43**	1.53*	-0.80
	(-1.97)	(1.64)	(-0.20)
Capex to PP&E	0.04	0.63	8.41**
	(0.15)	(1.16)	(2.08)
Relative Deal Value	0.12*	0.07	0.19
	(1.79)	(0.76)	(0.92)
Financed by Cash Only	0.03	-0.04	-1.13*
	(0.56)	(-0.36)	(-1.90)
CAR (-1, +1)	0.09	0.73*	1.24
	(0.25)	(1.72)	(0.58)
Tender Offer	0.14**	-0.06	0.52
	(2.40)	(-0.45)	(1.20)
Stock-Options Based Compensation	-0.24**	-0.32	-2.19
	(-2.14)	(-1.53)	(-1.26)
Private Target	0.11	-0.00	0.47
	(1.35)	(-0.02)	(0.75)
Subsidiary Target	0.18**	0.16	1.36*
	(2.37)	(1.13)	(1.79)
1. Consumer Non-Durables	0.12	0.48***	1.40**
	(1.43)	(2.81)	(2.18)
2. Consumer Durables	0.08	0.59	3.17
	(0.81)	(1.26)	(1.49)
3. Manufacturing	0.05	0.37**	1.00*
	(0.64)	(2.46)	(1.64)
4. Energy: Oil and Gas	0.06	0.90***	1.20**
	(0.65)	(4.33)	(2.00)
5. Chemicals and Allied Products	0.03	0.43**	1.60**
	(0.26)	(2.09)	(2.06)
6. Electronics	0.09	0.64***	1.88**
	(0.97)	(3.12)	(2.24)
7. Telecommunication	0.02	0.30*	1.08*
	(0.18)	(1.65)	(1.81)
8. Utilities	0.27*	0.39**	0.88
	(1.70)	(2.26)	(1.23)
9. Shops: Wholesale & Retail	0.01	0.31*	0.79*
	(0.05)	(1.78)	(1.75)
10. Healthcare, Medical & Drugs	0.03	0.40**	1.16**
	(0.23)	(2.07)	(2.24)
11. Money: Finance	0.15	0.78***	1.74***
	(1.63)	(3.86)	(2.88)
Adjusted R-Squared	19.1%	10.0%	9.9%
N	698	698	698

Panel B: BHAR Adjusted by Equally-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

Independent Variable	One Year BHAR	Three Year BHAR	Five Year BHAR
Intercept	0.11	0.61	0.94
	(0.47)	(1.45)	(0.92)
Contract	**0.06**	**0.26*****	**0.97***
	(1.46)	**(3.03)**	**(1.79)**
Size	-0.05**	-0.15***	-0.41***
	(-2.55)	(-3.61)	(-2.75)
Tobin's q	0.15***	0.02	-0.09
	(3.93)	(0.59)	(-0.86)
Leverage Ratio	-0.13	0.44	1.12
	(-0.68)	(1.15)	(1.17)
Free Cash Flow Ratio	-1.57**	1.17	-1.15
	(-2.17)	(1.28)	(-0.29)
Capex to PP&E	0.02	0.65	8.53**
	(0.07)	(1.20)	(2.10)
Relative Deal Value	0.12*	0.09	0.22
	(1.86)	(1.00)	(1.11)
Financed by Cash Only	0.03	-0.05	-1.12*
	(0.55)	(-0.43)	(-1.87)
CAR (-1, +1)	0.14	0.82**	1.31
	(0.38)	(1.97)	(0.61)
Tender Offer	0.14**	-0.02	0.57
	(2.38)	(-0.13)	(1.33)
Stock-Options Based Compensation	-0.25**	-0.41*	-2.28
	(-2.21)	(-1.96)	(-1.30)
Private Target	0.12	0.04	0.53
	(1.41)	(0.25)	(0.85)
Subsidiary Target	0.18**	0.18	1.39*
	(2.35)	(1.31)	(1.83)
1. Consumer Non-Durables	0.12	0.49***	1.44**
	(1.38)	(2.83)	(2.21)
2. Consumer Durables	0.09	0.59	3.21
	(0.98)	(1.24)	(1.51)
3. Manufacturing	0.03	0.35**	1.00
	(0.44)	(2.42)	(1.62)
4. Energy: Oil and Gas	0.02	0.79***	1.10*
	(0.23)	(3.98)	(1.84)
5. Chemicals and Allied Products	0.00	0.39*	1.60**
	(0.03)	(1.95)	(2.05)
6. Electronics	0.06	0.59***	1.88**
	(0.66)	(2.96)	(2.23)
7. Telecommunication	0.02	0.27	0.99*
	(0.17)	(1.46)	(1.68)
8. Utilities	0.24	0.28*	0.76
	(1.52)	(1.69)	(1.06)
9. Shops: Wholesale & Retail	-0.02	0.29*	0.79*
	(-0.21)	(1.64)	(1.76)
10. Healthcare, Medical & Drugs	0.01	0.40**	1.25**
	(0.11)	(2.11)	(2.41)
11. Money: Finance	0.14	0.78***	1.79**
	(1.53)	(3.85)	(2.95)
Adjusted R-Squared	19.3%	11.6%	10.6%
N	698	698	698

Table 7.5. Regressions of Long-Run Post-Acquisition CAR on CEO Contracts and Industries

The full sample consists of 1,083 completed acquisitions made by the S&P 500 firms during 1/1/1990-12/31/2005. The dependent variable is one, three and five year acquirer CAR, where the benchmark is the matched size-and-BM portfolio. Table 4.2 and Appendix provide definitions of the independent variables. The industry dummies are defined according to Fama-French 12 industries. The t-statistics based on White (1980) heteroskedasticity-consistent standard errors are reported in the brackets. ***, **, and * denote significance at the 1%, 5% and 10% levels in a two-sided test.

Panel A: CAR Adjusted by Value-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

Independent Variable	One Year CAR	Three Year CAR	Five Year CAR
Intercept	0.05	0.36	0.60**
	(0.34)	(1.48)	(2.19)
Contract	**0.05***	**0.14***	**0.09**
	(1.83)	**(2.75)**	**(1.56)**
Size	-0.03**	-0.09***	-0.14***
	(-2.11)	(-4.23)	(-5.61)
Tobin's q	0.10***	0.07***	0.06**
	(5.12)	(3.06)	(2.10)
Leverage Ratio	-0.09	0.38	0.94***
	(-0.58)	(1.61)	(3.29)
Free Cash Flow Ratio	-0.68*	0.34	0.66
	(-1.77)	(0.63)	(1.07)
Capex to PP&E	-0.14	-0.15	0.34
	(-0.90)	(-0.58)	(1.04)
Relative Deal Value	0.05	0.07	0.07
	(1.26)	(1.16)	(1.30)
Financed by Cash Only	0.02	0.01	-0.10
	(0.52)	(0.13)	(-1.39)
CAR (-1, +1)	0.11	0.14	0.17
	(0.56)	(0.56)	(0.45)
Tender Offer	0.09**	-0.02	-0.03
	(2.21)	(-0.20)	(-0.36)
Stock-Options Based Compensation	-0.16**	-0.22*	-0.24*
	(-2.30)	(-1.90)	(-1.72)
Private Target	0.05	0.01	-0.01
	(0.91)	(0.13)	(-0.06)
Subsidiary Target	0.09**	0.08	0.19**
	(2.07)	(1.11)	(2.23)
1. Consumer Non-Durables	0.07	0.31***	0.32***
	(1.11)	(2.62)	(2.53)
2. Consumer Durables	0.07	0.19	0.42
	(0.87)	(0.96)	(1.52)
3. Manufacturing	0.03	0.26**	0.29**
	(0.46)	(2.39)	(2.46)
4. Energy: Oil and Gas	0.08	0.58***	0.76***
	(1.16)	(5.03)	(5.95)
5. Chemicals and Allied Products	-0.02	0.26*	0.37**
	(-0.29)	(1.64)	(2.04)
6. Electronics	0.05	0.49***	0.62***
	(0.70)	(3.88)	(4.54)
7. Telecommunication	0.03	0.19	0.35**
	(0.44)	(1.51)	(2.35)
8. Utilities	0.12	0.28**	0.34***
	(1.35)	(2.17)	(2.57)
9. Shops: Wholesale & Retail	-0.02	0.27**	0.26**
	(-0.20)	(2.10)	(2.00)
10. Healthcare, Medical & Drugs	0.02	0.32***	0.43***
	(0.20)	(2.53)	(3.03)
11. Money: Finance	0.09	0.54***	0.69***
	(1.25)	(4.54)	(5.18)
Adjusted R-Squared	18.0%	14.3%	18.4%
N	698	698	698

Panel B: CAR Adjusted by Equally-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

Independent Variable	One Year CAR	Three Year CAR	Five Year CAR
Intercept	0.18	0.66***	0.96***
	(1.15)	(2.72)	(3.48)
Contract	**0.05**	**0.13***	**0.09**
	(1.59)	**(2.72)**	**(1.49)**
Size	-0.03***	-0.12***	-0.18***
	(-2.76)	(-5.32)	(-6.93)
Tobin's q	0.10***	0.06***	0.04
	(4.92)	(2.58)	(1.50)
Leverage Ratio	-0.18	0.21	0.79***
	(-1.14)	(0.9)	(2.72)
Free Cash Flow Ratio	-0.79**	0.11	0.44
	(-2.05)	(0.21)	(0.74)
Capex to PP&E	-0.16	-0.15	0.37
	(-1.03)	(-0.56)	(1.14)
Relative Deal Value	0.06	0.07	0.08
	(1.35)	(1.38)	(1.51)
Financed by Cash Only	0.02	0.00	-0.10
	(0.53)	(-0.01)	(-1.40)
CAR (-1, +1)	0.16	0.21	0.21
	(0.82)	(0.85)	(0.58)
Tender Offer	0.09**	0.01	-0.01
	(2.21)	(0.07)	(-0.09)
Stock-Options Based Compensation	-0.17**	-0.27**	-0.28**
	(-2.40)	(-2.44)	(-2.04)
Private Target	0.05	0.04	0.03
	(0.98)	(0.48)	(0.35)
Subsidiary Target	0.09**	0.10	0.21**
	(2.02)	(1.37)	(2.48)
1. Consumer Non-Durables	0.07	0.31***	0.32**
	(1.04)	(2.67)	(2.58)
2. Consumer Durables	0.09	0.20	0.43
	(1.14)	(0.98)	(1.56)
3. Manufacturing	0.02	0.25**	0.29**
	(0.26)	(2.38)	(2.48)
4. Energy: Oil and Gas	0.05	0.52***	0.70***
	(0.74)	(4.68)	(5.66)
5. Chemicals and Allied Products	-0.04	0.23	0.36
	(-0.53)	(1.50)	(2.03)
6. Electronics	0.02	0.45***	0.61***
	(0.32)	(3.71)	(4.50)
7. Telecommunication	0.03	0.17	0.30**
	(0.47)	(1.29)	(1.97)
8. Utilities	0.10	0.21*	0.27**
	(1.08)	(1.68)	(2.05)
9. Shops: Wholesale & Retail	-0.03	0.25**	0.25*
	(-0.42)	(2.00)	(1.92)
10. Healthcare, Medical & Drugs	0.01	0.32***	0.45***
	(0.07)	(2.65)	(3.32)
11. Money: Finance	0.08	0.54***	0.71***
	(1.15)	(4.57)	(5.29)
Adjusted R-Squared	18.2%	16.2%	21.2%
N	698	698	698

Table 8.1 Probit and Logit Models Predicting the Use of CEO Contracts

This table presents the probit and logit models predicting the use of CEO employment contracts by the S&P 500 firms The full sample consists of 992 CEOs in office at S&P 500 firms during 1/1/1990-12/31/2005 that have all data available. The dependent variable, Contract, equals one if the firm has a CEO contract at the event date, and zero otherwise. The event date is the appointment date if the CEO is hired with a contract or the contract date if the executive enters into a contract after becoming a CEO. For CEOs without contracts, the event date is the appointment date. Age is the CEO's age at the event date. Age>=65 equals 1 if the CEO's age is greater than or equal to 65, and zero otherwise. Tenure is the number of years the executive has worked with the firm at the event date. Outside equals 1 if the executive has been with the firm for less than three years when becoming a CEO, and zero otherwise. Founder is an index equaling 1 if the CEO is a founder or comes from a founding family of the firm, and zero otherwise. CEO/Chair equals 1 if the CEO is also Chairman of Board of Directors, and zero otherwise. Institutional ownership is the number of shares owned by institutional investors dived by the number of shares outstanding. Return volatility is the standard deviation of monthly stock returns over the 12 months preceding the event date. Appendix defines the accounting, variables. All accounting variables are measured at the fiscal year end prior to the event date and Winsorized at the 1% and 99% levels. The t-statistics are reported in the brackets ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Independent Variable	Probit Model	Logit Model
Intercept	-1.68***	-2.81***
	(-3.56)	(-3.54)
CEO Age	0.02***	0.04***
	(2.67)	(2.74)
CEO Age >= 65	-0.39*	-0.64*
	(-1.71)	(-1.63)
Tenure w/ firm	-0.03***	-0.04***
	(-5.47)	(-5.43)
Outside CEO	0.57***	0.95***
	(4.54)	(4.55)
Founder	0.30*	0.48*
	(1.76)	(1.77)
Chairman/CEO	0.21**	0.35**
	(2.20)	(2.25)
Institution Ownership	0.83***	1.37***
	(3.51)	(3.45)
Market-adjusted return	-0.21*	-0.35
	(-1.70)	(-1.50)
Return on Assets	-0.66	-1.46
	(-1.32)	(-1.42)
Return Volatility	2.63***	4.52***
	(3.18)	(3.14)
Firm Size	-0.01	-0.01
	(-0.20)	(-0.26)
Tobin's q	0.01	0.01
	(0.24)	(0.32)
Leverage Ratio	0.04	0.01
	(0.11)	(0.02)
Capex to Sales	0.00	-0.01
	(0.01)	(-0.03)
N	992	992.00
N w/ Contracts (%)	479 (48.3%)	479 (48.3%)
Pseudo R-Squared	14.0%	14.2%
Log Likelihood	-590.63953	-589.64

Table 8.2 Heckman Selection Model First Stage: Probit Estimates of the Use of CEO Contracts

This table presents the probit estimates of the use of CEO employment contracts by the S&P 500 firms. It is the first-stage of the Heckman (1979) two-stage sample selection model. The full sample consists of acquiring CEOs who have completed 531 deals in the M&A sample during 1/1/1990-12/31/2005 that have all variables available in both stages. The dependent variable, Contract, equals one if the firm has a CEO contract at the event date, and zero otherwise. The event date is the appointment date if the CEO is hired with a contract or the contract date if the executive enters into a contract after becoming a CEO. For CEOs without contracts, the event date is the appointment date. Age is the CEO's age at the event date. Age>=65 equals 1 if the CEO's age is greater than or equal to 65, and zero otherwise. Tenure is the number of years the executive has worked with the firm at the event date. Outside equals 1 if the executive has been with the firm for less than three years when becoming a CEO, and zero otherwise. Founder is an index equaling 1 if the CEO is a founder or comes from a founding family of the firm, and zero otherwise. CEO/Chair equals 1 if the CEO is also Chairman of Board of Directors, and zero otherwise. Institutional ownership is the number of shares owned by institutional investors dived by the number of shares outstanding. Return volatility is the standard deviation of monthly stock returns over the 12 months preceding the event date. Appendix defines the accounting, variables. All accounting variables are measured at the fiscal year end prior to the event date and Winsorized at the 1% and 99% levels. The *t*-statistics are reported in the brackets ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Independent Variable	Probit
Intercept	-1.68***
	(-3.56)
CEO Age	0.02**
	(1.98)
CEO Age >= 65	0.10
	(0.21)
Tenure w/ firm	-0.02**
	(-2.56)
Outside CEO	0.73***
	(4.32)
Founder	-0.33
	(-1.50)
Chairman/CEO	-0.10
	(-0.78)
Institution Ownership	-0.15
	(-0.43)
Market-adjusted return	0.45*
	(1.87)
Return on Assets	0.08
	(0.10)
Return Volatility	3.46***
	(2.61)
Firm Size	-0.07*
	(-1.67)
Tobin's *q*	-0.15***
	(-2.99)
Leverage Ratio	-0.86*
	(-1.70)
Capex to Sales	1.71**
	(2.39)
N	531
N w/ Contracts (%)	261 (49.2%)
Pseudo R-squared	14.5%
Log Likelihood	-338.98

Table 8.3 Heckman Selection Model Second Stage:
Regressions of Acquirer Announcement CAR Categorized by CEO Contracts

The full sample consists of 351 completed acquisitions made by the S&P 500 companies during the period January 1, 1990, to December 2005. Certain criteria have been met. The dependent variable is the three- and five-day acquirer announcement returns. CAR (-1, +1) is the three- and CAR (-2, +2) is the five-day cumulative abnormal return around the announcement date (day 0), computed using raw returns net of the CRSP value-weighted market returns. Age is CEO age as of the announcement date. Tenure as CEO is the number of years the CEO remains in current position as of the announcement date. Chairman/CEO is a dummy variable taking on value 1 if the CEO is also Chairman of the Board of directors of the acquiring firm as of the announcement date. Size is the natural logarithm of the total assets at the fiscal year end prior to acquisition announcement. Relative deal value is the ratio of total deal value of the acquisition to acquirer market capitalization measured one month prior to the announcement date. Financed by cash only is a dummy equaling one if the purchase of the target is financed with 100% cash and zero otherwise. 3-YR BHAR is acquirer three-year buy-and-hold abnormal returns adjusted by the value-weighted returns on the matched size and book-to-market referenced portfolios. Tender offer is one if the deal is identified as a tender offer by SDC and zero if it is a merger. Options based compensation is the ratio of the value of new stock options (using modified Black-Scholes method) granted to the top five executive to their total compensation. Private target is an index variable, which equals one is the target status is private and zero otherwise. Subsidiary target is a dummy variable equaling one if the target is a subsidiary as defined by SDC. G-Index is the anti-takeover provisions index constructed as in Gompers *et al.* (2003). Inverse Mills Ratio is computed from the Heckman first stage probit regressions predicting the use of CEO contracts. Appendix provides the definitions of all accounting ratios in the tests. All accounting and compensation variables are measured at the fiscal year end prior to the acquisition announcement and winsorized at the 1% and 99% levels. The *t*-statistics based on the consistent asymptotic standard errors are reported in the brackets. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Independent Variables	CAR (-1,+1)		CAR (-2,+2)	
	261 Acquisitions with Contract Eq. (5.4)	**270 Acquisitions w/o Contract Eq. (5.5)**	**261 Acquisitions with Contract Eq. (5.4)**	**270 Acquisitions w/o Contract Eq. (5.5)**
Intercept	-0.0289	0.0389	0.0313	0.0693
	(-0.57)	(0.70)	(0.50)	(1.23)
Age	0.0005	-0.0002	0.0001	-0.0004
	(0.63)	(-0.26)	(0.12)	(-0.48)
Tenure as CEO	-0.0001	-0.0011	-0.0004	-0.0016*
	(-0.16)	(-1.24)	(-0.36)	(-1.77)
Chairman/CEO	-0.0038	-0.0035	-0.0047	-0.0069
	(-0.37)	(-0.34)	(-0.37)	(-0.65)
Firm Size	-0.0033	-0.0014	-0.0050	-0.0027
	(-0.86)	(-0.34)	(-1.08)	(-0.64)
Tobin's q	-0.0029	0.0033*	-0.0058*	0.0031
	(-1.14)	(1.70)	(-1.88)	(1.55)
Leverage	0.1028***	0.0132	0.1332***	-0.0021
	(2.79)	(0.30)	(2.94)	(-0.05)
Free Cash Flow	-0.0238	-0.0851	-0.0256	-0.0802
	(-0.30)	(-1.06)	(-0.26)	(-0.98)
Capex to Assets	0.0481	0.0207	0.1183	-0.0306
	(0.48)	(0.17)	(0.95)	(-0.24)
Relative Deal Val.	-0.0238*	-0.0247**	-0.0332**	-0.0252**
	(-1.89)	(-2.25)	(-2.14)	(-2.25)
3-YR BHAR	0.0005	0.0040	0.0030	0.0068
	(0.13)	(0.81)	(0.68)	(1.36)
Financed by Cash	0.0010	0.0053	-0.0075	0.0018
	(0.09)	(0.51)	(-0.59)	(0.16)
Tender Offer	0.0201	0.0026	0.0145	0.0079
	(1.28)	(0.21)	(0.74)	(0.63)
Options Comp.	0.0152	-0.0089	0.0237	-0.0151
	(0.68)	(-0.36)	(0.86)	(-0.59)
Private Target	0.0254*	0.0375***	0.0340**	0.0338**
	(1.90)	(2.78)	(2.07)	(2.45)
Subsidiary Target	0.0381***	0.0087	0.0454***	0.0156
	(3.18)	(0.75)	(3.08)	(1.32)
G-Index	0.0011	-0.0010	-0.0017	-0.0012
	(0.71)	(-0.69)	(-0.89)	(-0.81)
Inverse Mills Ratio	**-0.0204**	**0.0218**	**-0.0175**	**0.0121**
	(-1.62)	*(1.43)*	*(-1.13)*	*(0.78)*
Adjusted R-squared	12.4%	5.6%	12.9%	6.7%

Table 8.4 Heckman Selection Model Second Stage:
Regressions of Acquirer Post-Acquisition BHAR Categorized by CEO Contracts

The full sample consists of 351 completed acquisitions made by the S&P 500 companies during the period January 1, 1990, to December 2005. Certain criteria have been met. The dependent variable is, respectively, the one-, three- and five-year post-acquisition buy-and-hold or cumulative abnormal returns of the acquiring firms. The buy-and-hold abnormal return on firm i, BHR_i, is calculated as

$$BHAR_i = \left\{ \left[\prod_{t=1}^{T} (1 + R_{i,t}) - 1 \right] - \left[\prod_{t=1}^{T} (1 + R_{benchmark,t}) - 1 \right] \right\} \times 100 ,$$

where $t=1$ is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one-, three- and five-year anniversary date since the effective acquisition date, or the acquiring firm's delisting date, whichever is earlier. $R_{benchmark,t}$ is the return on a matched size and book-to-market portfolio return over the same holding period as the sample firm. For value-weighted returns, the benchmark portfolio returns are weighted by firm market capitalization measured at the end of June in previous year within the same size and book-to-market bracket. Age is CEO age as of the announcement date. Tenure as CEO is the number of years the CEO remains in current position as of the announcement date. Chairman/CEO is a dummy variable taking on value 1 if the CEO is also Chairman of the Board of directors of the acquiring firm as of the announcement date. Size is the natural logarithm of the total assets at the fiscal year end prior to acquisition announcement. Relative deal value is the ratio of total deal value of the acquisition to acquirer market capitalization measured one month prior to the announcement date. Financed by cash only is a dummy equaling one if the purchase of the target is financed with 100% cash and zero otherwise. Car (-2, +2) is the five-day cumulative abnormal returns of acquiring firms around the announcement date. Tender offer is one if the deal is identified as a tender offer by SDC and zero if it is a merger. Options based compensation is the ratio of the value of new stock options (using modified Black-Scholes method) granted to the top five executive to their total compensation. Private target is an index variable, which equals one is the target status is private and zero otherwise. Subsidiary target is a dummy variable equaling one if the target is a subsidiary as defined by SDC. G-Index is the anti-takeover provisions index constructed as in Gompers *et al.* (2003). Inverse Mills Ratio is computed from the Heckman first stage probit regressions predicting the use of CEO contracts. Appendix provides the definitions of all accounting ratios in the tests. All accounting and compensation variables are measured at the fiscal year end prior to the acquisition announcement and winsorized at the 1% and 99% levels. The *t*-statistics based on the consistent asymptotic standard errors are reported in the brackets. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Panel A: BHAR Adjusted by Value-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

	One Year		Three Year		Five Year	
	261 Acquisitions with Contract Eq. (5.4)	**270 Acquisitions w/o Contract Eq. (5.5)**	**261 Acquisitions with Contract Eq. (5.4)**	**270 Acquisitions w/o Contract Eq. (5.5)**	**261 Acquisitions with Contract Eq. (5.4)**	**270 Acquisitions w/o Contract Eq. (5.5)**
Independent Variables						
Intercept	-0.91***	-0.25	-1.74*	-1.59**	-3.26*	-1.97
	(-2.79)	*(-0.57)*	*(-1.93)*	*(-2.27)*	*(-1.92)*	*(-0.89)*
Age	0.02***	0.00	0.04***	0.01	0.08***	0.02
	(3.74)	*(0.38)*	*(3.09)*	*1.45*	*(3.54)*	*(0.72)*
Tenure as CEO	0.00	0.00	-0.03*	0.01	-0.11***	0.02
	(-0.56)	*(-0.31)*	*(-1.64)*	*(1.30)*	*(-3.70)*	*(0.58)*
Chairman/CEO	-0.02	-0.04	-0.04	-0.04	0.42	-0.43
	(-0.34)	*(-0.48)*	*(-0.21)*	*(-0.27)*	*(1.22)*	*(-1.03)*
Firm Size	0.00	-0.03	-0.02	0.03	-0.22*	-0.02
	(-0.17)	*(-1.03)*	*(-0.36)*	*(0.50)*	*(-1.74)*	*(-0.13)*
Tobin's q	-0.02	0.00	-0.06	-0.04	-0.04	-0.11
	(-1.15)	*(-0.31)*	*(-1.25)*	*(-1.41)*	*(-0.50)*	*(-1.39)*
Leverage	0.25	0.70**	0.80	0.48	7.74***	1.05
	(1.06)	*(2.05)*	*(1.20)*	*(0.86)*	*(6.18)*	*(0.60)*
Free Cash Flow Ratio	0.34	0.99	-0.98	2.04**	2.00	5.46*
	(0.67)	*(1.58)*	*(-0.69)*	*(2.00)*	*(0.75)*	*(1.69)*
Capex to Assets	-0.51	0.75	-3.59**	1.14	-5.47	0.35
	(-0.78)	*(0.77)*	*(-2.00)*	*(0.73)*	*(-1.63)*	*(0.07)*
Relative Deal Value	0.00	-0.02	0.13	0.36**	-0.31	0.32
	(0.03)	*(-0.23)*	*(0.56)*	*(2.57)*	*(-0.72)*	*(0.74)*
CAR (-2, +2)	0.03	-2.10***	0.63	1.07	-0.38	4.58*
	(0.08)	*(-4.34)*	*(0.68)*	*(1.36)*	*(-0.22)*	*(1.85)*
Cash Deals	0.01	0.01	-0.23	0.19	0.22	-0.52
	(0.21)	*(0.06)*	*(-1.24)*	*(1.40)*	*(0.65)*	*(-1.23)*
Tender Offer	0.08	0.13	0.20	0.01	0.03	-0.16
	(0.83)	*(1.34)*	*(0.71)*	*(0.06)*	*(0.06)*	*(-0.32)*
Options Based Comp.	0.05	0.72***	0.71*	0.88***	1.57**	1.58
	(0.37)	*(3.75)*	*(1.78)*	*(2.84)*	*(2.11)*	*(1.60)*
Private Target	-0.13	0.17	0.24	0.02	-0.49	-0.28
	(-1.49)	*(1.59)*	*(1.01)*	*(0.09)*	*(-1.09)*	*(-0.51)*
Subsidiary Target	0.06	0.24***	0.46**	0.20	0.46	0.89*
	(0.80)	*(2.65)*	*(2.15)*	*(1.33)*	*(1.13)*	*(1.92)*
G-Index	0.00	-0.01	-0.02	-0.05***	-0.12**	-0.06
	(0.43)	*(-1.31)*	*(-0.81)*	*(-2.60)*	*(-2.26)*	*(-0.98)*
Inverse Mills Ratio	**-0.03**	**0.03**	**0.11**	**-0.46****	**0.72***	**-1.57*****
	(-0.33)	*(0.24)*	*(0.51)*	*(-2.40)*	*(1.70)*	*(-2.59)*
Adjusted R-squared	4.2%	11.1%	5.4%	9.0%	20.1%	4.4%

Panel B: BHAR Adjusted by Equally-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

Independent Variables	One Year		Three Year		Five Year	
	261 Acquisitions with Contract Eq. (5.4)	270 Acquisitions w/o Contract Eq. (5.5)	261 Acquisitions with Contract Eq. (5.4)	270 Acquisitions w/o Contract Eq. (5.5)	261 Acquisitions with Contract Eq. (5.4)	270 Acquisitions w/o Contract Eq. (5.5)
Intercept	-0.70**	-0.37	-1.74*	-2.18***	-3.07*	-3.90
	(-2.08)	(-0.82)	(-1.89)	(-2.65)	(-1.87)	(-1.61)
Age	0.01***	0.00	0.03*	0.01	0.04	0.01
	(3.04)	(0.23)	(1.93)	(1.22)	(1.56)	(0.45)
Tenure as CEO	0.00	0.00	-0.02	0.01	-0.07**	0.03
	(-0.57)	(-0.49)	(-1.05)	(0.83)	(-2.32)	(0.65)
Chairman/CEO	-0.02	-0.01	-0.08	-0.06	0.13	-0.53
	(-0.24)	(-0.13)	(-0.44)	(-0.38)	(0.39)	(-1.16)
Firm Size	-0.03	-0.04	0.01	0.04	-0.04	0.08
	(-1.02)	(-1.09)	(0.10)	(0.61)	(-0.30)	(0.42)
Tobin's q	-0.04**	-0.02	-0.11**	-0.05*	-0.09	-0.09
	(-2.13)	(-1.07)	(-2.39)	(-1.77)	(-1.15)	(-1.09)
Leverage	0.14	0.58*	-0.54	0.06	3.74***	0.54
	(0.56)	(1.64)	(-0.80)	(0.09)	(3.09)	(0.28)
Free Cash Flow Ratio	0.25	1.17*	-1.54	1.77	0.67	4.29
	(0.47)	(1.80)	(-1.07)	(1.48)	(0.26)	(1.22)
Capex to Assets	-0.84	0.42	-4.42**	-1.49	-8.73***	-5.09
	(-1.26)	(0.42)	(-2.43)	(-0.81)	(-2.69)	(-0.94)
Relative Deal Value	0.00	0.04	0.16	0.23	-0.28	0.13
	(0.01)	(0.47)	(0.69)	(1.43)	(-0.68)	(0.26)
CAR (-2, +2)	0.03	-1.81***	1.31	1.41	1.34	4.91*
	(0.09)	(-3.61)	(1.38)	(1.53)	(0.79)	(1.81)
Cash Deals	0.05	0.01	-0.12	0.25	0.31	-0.27
	(0.78)	(0.14)	(-0.64)	(1.63)	(0.94)	(-0.59)
Tender Offer	0.05	0.09	0.17	-0.10	-0.02	-0.13
	(0.52)	(0.88)	(0.58)	(-0.52)	(-0.05)	(-0.24)
Options Based Comp.	0.06	0.81***	0.71*	1.11***	1.42**	1.74
	(0.42)	(4.05)	(1.75)	(3.03)	(1.97)	(1.62)
Private Target	-0.15	0.15	0.33	0.01	-0.10	-0.20
	(-1.63)	(1.39)	(1.35)	(0.05)	(-0.22)	(-0.33)
Subsidiary Target	0.01	0.24**	0.35	0.10	0.41	0.79
	(0.11)	(2.53)	(1.60)	(0.58)	(1.05)	(1.55)
G-Index	0.00	-0.02	0.00	-0.05**	-0.06	-0.04
	(0.43)	(-1.50)	(-0.08)	(-2.36)	(-1.18)	(-0.70)
Inverse Mills Ratio	**-0.03**	**0.00**	**0.02**	**-0.49****	**0.33**	**-1.65****
	(-0.41)	**(0.04)**	**(0.10)**	**(-2.16)**	**(0.81)**	**(-2.50)**
Adjusted R-squared	2.3%	10.0%	4.2%	7.3%	10.0%	3.1%

Table 8.5 Heckman Selection Model Second Stage:
Regressions of Acquirer Post-Acquisition CAR Categorized by CEO Contracts

The full sample consists of 351 completed acquisitions made by the S&P 500 companies during the period January 1, 1990, to December 2005. Certain criteria have been met. The dependent variable is, respectively, the one-, three- and five-year post-acquisition cumulative abnormal return on firm i, CAR_i, computed as

$$CAR_i = \left[\sum_{t=1}^{T} (R_{i,t} - R_{benchmark,t}) \right] \times 100 \,,$$

where $t=1$ is the first trading day following the effective date, $R_{i,t}$ is the return on stock i on day t and T is the one-, three- and five-year anniversary date since the effective acquisition date, or the acquiring firm's delisting date, whichever is earlier. $R_{benchmark,t}$ is the return on a matched size and book-to-market portfolio return over the same holding period as the sample firm. For value-weighted returns, the benchmark portfolio returns are weighted by firm market capitalization measured at the end of June in previous year within the same size and book-to-market bracket. Age is CEO age as of the announcement date. Tenure as CEO is the number of years the CEO remains in current position as of the announcement date. Chairman/CEO is a dummy variable taking on value 1 if the CEO is also Chairman of the Board of directors of the acquiring firm as of the announcement date. Size is the natural logarithm of the total assets at the fiscal year end prior to acquisition announcement. Relative deal value is the ratio of total deal value of the acquisition to acquirer market capitalization measured one month prior to the announcement date. Financed by cash only is a dummy equaling one if the purchase of the target is financed with 100% cash and zero otherwise. Car (-2, +2) is the five-day cumulative abnormal returns of acquiring firms around the announcement date. Tender offer is one if the deal is identified as a tender offer by SDC and zero if it is a merger. Options based compensation is the ratio of the value of new stock options (using modified Black-Scholes method) granted to the top five executive to their total compensation. Private target is an index variable, which equals one is the target status is private and zero otherwise. Subsidiary target is a dummy variable equaling one if the target is a subsidiary as defined by SDC. G-Index is the anti-takeover provisions index constructed as in Gompers *et al.* (2003). Inverse Mills Ratio is computed from the Heckman first stage probit regressions predicting the use of CEO contracts. Appendix provides the definitions of all accounting ratios in the tests. All accounting and compensation variables are measured at the fiscal year end prior to the acquisition announcement and winsorized at the 1% and 99% levels. The *t*-statistics based on the consistent asymptotic standard errors are reported in the brackets. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively, in a two-sided test.

Panel A: CAR Adjusted by Value-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

Independent Variables	One Year		Three Year		Five Year	
	261 Acquisitions with Contract Eq. (5.4)	270 Acquisitions w/o Contract Eq. (5.5)	261 Acquisitions with Contract Eq. (5.4)	270 Acquisitions w/o Contract Eq. (5.5)	261 Acquisitions with Contract Eq. (5.4)	270 Acquisitions w/o Contract Eq. (5.5)
Intercept	-0.79***	-0.40	-0.80	-0.53	0.03	0.08
	(-2.78)	(-1.20)	(-1.62)	(-1.19)	(0.06)	(0.16)
Age	0.02***	0.00	0.03***	0.01	0.03***	0.01
	(4.07)	(0.97)	(3.84)	(1.02)	(3.69)	(0.81)
Tenure as CEO	0.00	0.00	-0.02**	0.01*	-0.03***	0.01
	(-0.91)	(-0.36)	(-2.14)	(1.82)	(-3.31)	(1.05)
Chairman/CEO	-0.01	-0.03	-0.01	0.03	0.15	0.03
	(-0.24)	(-0.53)	(-0.15)	(0.38)	(1.38)	(0.29)
Firm Size	-0.01	-0.01	-0.04	-0.02	-0.14***	-0.06
	(-0.32)	(-0.26)	(-1.13)	(-0.48)	(-3.44)	(-1.60)
Tobin's q	-0.01	-0.02**	-0.04	-0.04**	-0.04*	-0.06***
	(-0.73)	(-2.01)	(-1.44)	(-2.56)	(-1.66)	(-3.62)
Leverage	0.26	0.33	0.95***	0.13	1.89***	0.66*
	(1.23)	(1.26)	(2.61)	(0.37)	(4.86)	(1.69)
Free Cash Flow Ratio	0.25	0.59	-0.28	0.59	0.13	0.38
	(0.55)	(1.23)	(-0.36)	(0.91)	(0.16)	(0.52)
Capex to Assets	-0.46	0.41	-1.45	0.83	-1.61	0.90
	(-0.83)	(0.55)	(-1.48)	(0.83)	(-1.54)	(0.81)
Relative Deal Value	-0.05	-0.07	-0.08	0.31	-0.14	0.31***
	(-0.72)	(-1.08)	(-0.65)	(3.50)	(-1.05)	(3.09)
CAR (-2, +2)	-0.18	-0.95**	-0.44	-0.23	0.14	0.08
	(-0.61)	(-2.56)	(-0.88)	(-0.46)	(0.26)	(0.15)
Cash Deals	0.02	0.01	-0.02	0.08	0.04	-0.03
	(0.40)	(0.22)	(-0.25)	(0.95)	(0.36)	(-0.28)
Tender Offer	0.09	0.09	0.00	0.09	-0.10	-0.05
	(0.97)	(1.16)	(0.01)	(0.94)	(-0.58)	(-0.44)
Options Based Comp.	0.07	0.53***	0.42*	0.50**	0.35	0.81***
	(0.57)	(3.57)	(1.95)	(2.50)	(1.53)	(3.64)
Private Target	-0.11	0.05	0.02	0.03	-0.11	-0.04
	(-1.48)	(0.61)	(0.14)	(0.25)	(-0.79)	(-0.31)
Subsidiary Target	0.02	0.15**	0.08	0.16*	0.04	0.18*
	(0.30)	(2.08)	(0.69)	(1.68)	(0.34)	(1.68)
G-Index	0.00	-0.01	-0.02	-0.02**	-0.03*	-0.03***
	(0.25)	(-0.60)	(-1.30)	(-2.12)	(-1.86)	(-2.66)
Inverse Mills Ratio	**-0.05**	**0.02**	**-0.07**	**-0.21***	**-0.06**	**-0.16**
	(-0.71)	**(0.24)**	**(-0.57)**	**(-1.75)**	**(-0.45)**	**(-1.21)**
Adjusted R-squared	4.1%	5.6%	6.3%	9.7%	14.8%	13.7%

Panel B: CAR Adjusted by Equally-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

	One Year		Three Year		Five Year	
Independent Variables	**261 Acquisitions with Contract Eq. (5.4)**	**270 Acquisitions w/o Contract Eq. (5.5)**	**261 Acquisitions with Contract Eq. (5.4)**	**270 Acquisitions w/o Contract Eq. (5.5)**	**261 Acquisitions with Contract Eq. (5.4)**	**270 Acquisitions w/o Contract Eq. (5.5)**
Intercept	-0.63**	-0.42	-0.71	-0.56	-0.11	-0.26
	(-2.20)	(-1.23)	(-1.47)	(-1.18)	(-0.20)	(-0.48)
Age	0.01***	0.00	0.02**	0.01	0.01	0.00
	(3.41)	(0.86)	(2.44)	(0.96)	(1.50)	(0.40)
Tenure as CEO	0.00	0.00	-0.01	0.01	-0.02	0.01
	(-0.89)	(-0.54)	(-1.33)	(1.36)	(-1.60)	(0.93)
Chairman/CEO	-0.01	-0.01	-0.03	0.02	0.06	-0.01
	(-0.17)	(-0.22)	(-0.27)	(0.24)	(0.55)	(-0.06)
Firm Size	-0.02	-0.02	-0.03	-0.04	-0.09**	-0.07*
	(-1.09)	(-0.61)	(-0.92)	(-1.23)	(-2.12)	(-1.73)
Tobin's q	-0.03*	-0.04***	-0.07***	-0.07***	-0.07**	-0.08***
	(-1.76)	(-3.02)	(-2.80)	(-4.02)	(-2.56)	(-4.21)
Leverage	0.13	0.22	0.12	-0.06	0.79**	0.52
	(0.61)	(0.84)	(0.33)	(-0.16)	(1.98)	(1.22)
Free Cash Flow Ratio	0.19	0.69	-0.49	0.62	-0.13	0.12
	(0.41)	(1.41)	(-0.63)	(0.91)	(-0.15)	(0.15)
Capex to Assets	-0.59	0.14	-1.91**	-0.46	-3.09***	-0.93
	(-1.04)	(0.19)	(-1.99)	(-0.44)	(-2.87)	(-0.77)
Relative Deal Value	-0.05	-0.03	-0.04	0.27***	-0.11	0.17
	(-0.66)	(-0.45)	(-0.35)	(2.89)	(-0.79)	(1.61)
CAR (-2, +2)	-0.04	-0.69*	0.29	0.15	0.81	0.19
	(-0.14)	(-1.84)	(0.57)	(0.28)	(1.44)	(0.31)
Cash Deals	0.05	0.03	0.04	0.14	0.10	0.10
	(0.93)	(0.42)	(0.40)	(1.56)	(0.94)	(0.99)
Tender Offer	0.05	0.04	-0.04	0.01	-0.13	-0.07
	(0.58)	(0.57)	(-0.23)	(0.13)	(-0.74)	(-0.61)
Options Based Comp.	0.09	0.58***	0.44**	0.56***	0.38	0.81***
	(0.73)	(3.87)	(2.06)	(2.64)	(1.57)	(3.37)
Private Target	-0.11	0.04	0.10	0.05	-0.01	0.00
	(-1.40)	(0.46)	(0.77)	(0.43)	(-0.08)	(0.01)
Subsidiary Target	-0.01	0.13*	0.07	0.12	0.10	0.13
	(-0.12)	(1.82)	(0.63)	(1.24)	(0.76)	(1.14)
G-Index	0.00	-0.01	0.00	-0.03**	-0.01	-0.03**
	(0.28)	(-0.96)	(-0.31)	(-2.43)	(-0.42)	(-2.29)
Inverse Mills Ratio	**-0.04**	**0.00**	**-0.15**	**-0.25****	**-0.20**	**-0.27****
	(-0.63)	**(0.02)**	**(-1.23)**	**(-2.10)**	**(-1.46)**	**(-1.97)**
Adjusted R-squared	2.1%	5.7%	5.5%	10.7%	11.0%	11.2%

**Table 8.6 Comparison of *Forecasts* of Acquirer Announcement CAR If
the Alternative Contract Status were Used with the *Actual* Announcement CAR**

This table compares mean actual acquirer announcement period returns to mean forecasts of acquirer announcement returns if the alternative CEO contract status were used. CAR (-1, +1) is the three- and CAR (-2, +2) is the five-day cumulative abnormal return around the announcement date (day 0), computed using raw returns net of the CRSP value-weighted market returns. Forecasts of announcement CAR if contracts were used are determined as the product of the regression coefficients estimates from the regression of the 261 acquisitions with CEO contracts [Eq. (5.4) in Table 8.3] and the independent variables, excluding the inverse Mills ratio, for each firm in the sample of acquisitions without CEO contracts. The forecast s of acquirer announcement CAR if CEO contracts were not used are determined in the same way using the regression estimates for the 270 deals without CEO contracts [Eq. (5.5) in Table 8.3]. The third row presents mean changes in CAR if the alternative contract status were true. The *t-statistics* based on the two-sided test with the null that the mean change is zero are in the brackets. ***, **, * indicates significance at the 1%, 5% and 10% level respectively. The last row provides the number of cases with negative changes in CAR had the other contract status been true. The percentage of the negative changes is reported in the parenthesis The *z*-statistics based on the two-sided binomial test with the null hypothesis that changes in acquirer returns are equally likely to be positive or negative are reported in the brackets. ***, **, * indicates the significance at the 1%, 5%, and 10% level.

	CAR (-1,+1) (%)		CAR (-2,+2) (%)	
	261 Acquisitions with Contract	**270 Acquisitions w/o Contract**	**261 Acquisitions with Contract**	**270 Acquisitions w/o Contract**
Mean *Actual* CAR	-0.63	-0.99	-0.43	-0.82
Mean *Predicted* CAR if alternative is used	0.67	0.57	0.25	0.27
Mean *Change* if the other contract status were true (*t-stat*)	1.30*** *(3.17)*	1.56*** *(3.80)*	0.68 *(1.33)*	1.09** *(2.54)*
No [%]of Negative Change if the other contract status were true (*z-stat*)	105 [40.2%]*** *(-3.16)*	102 [37.8%]*** *(-4.02)*	117 [44.8%]* *(-1.67)*	113 [41.9%]*** *(-2.68)*

Table 8.7 Comparison of *Forecasts* of Acquirer Post-Acquisition BHAR If the Alternative Contract Status were Used with the *Actual* BHAR

This table compares mean actual acquirer BHAR to mean forecasts of acquirer BHAR if the alternative CEO contract status were used. Forecasts of BHAR if contracts were used are determined as the product of the regression coefficients estimates from the regression of the 261 acquisitions with CEO contracts [Eq. (5.4) in Table 8.4] and the independent variables, excluding the inverse Mills ratio, for each firm in the sample of acquisitions without CEO contracts. The forecast s of acquirer BHAR if CEO contracts were not used are determined in the same way using the regression estimates for the 270 deals without CEO contracts [Eq. (5.5) in Table 8.4]. Panel A presents results on BHAR adjusted by value-weighted return on matched size and book-to-market reference portfolios, while Panel B on BHAR adjusted by equally-weighted benchmark portfolio returns. The third row presents mean changes in BHAR if the alternative contract status were true. The *t-statistics* based on the two-sided test with the null hypothesis that the mean change is zero are in the brackets. ***, **, * indicates significance at the 1%, 5% and 10% level respectively. The last row provides the number of cases with negative changes in BHAR had the other contract status been true. The percentage of the negative changes is reported in the parenthesis The *z*-statistics based on the two-sided binomial test with the null hypothesis that changes in acquirer returns are equally likely to be positive or negative are reported in the brackets. ***, **, * indicates the significance at the 1%, 5%, and 10% level.

Panel A: BHAR Adjusted by Value-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

	One Year (%)		Three Year (%)		Five Year (%)	
	261 Acquisitions with Contract	270 Acquisitions w/o Contract	261 Acquisitions with Contract	270 Acquisitions w/o Contract	261 Acquisitions with Contract	270 Acquisitions w/o Contract
Mean *Actual* BHAR	3.08	2.75	20.18	3.32	44.96	24.37
Mean *Predicted* BHAR if the other status were true	6.95	5.10	-22.42	4.58	-72.90	-20.59
Mean *Change* if the alternative were used (*t-stat*)	3.87 *(1.33)*	2.35 *(0.70)*	-42.60*** *(-5.94)*	1.26 *(0.24)*	-117.86*** *(-8.09)*	-44.96*** *(-2.67)*
No.[%] of cases where change in BHAR is negative (*z-stat*)	116 [44.4%]* *(-1.80)*	119 [44.1%]* *(-1.95)*	171 [65.5%]*** *(5.01)*	112 [41.5%]*** *(-2.80)*	218 [83.5%]*** *(10.83)*	163 [60.4%]*** *(3.41)*
Panel B: BHAR Adjusted by Equally-Weighted Return on Matched Size and Book-to-Market Reference Portfolios						
Mean *Actual* BHAR	-17.19	-16.97	-54.82	-76.07	-116.42	-145.94
Mean *Predicted* BHAR if the other status were true	-13.10	-16.37	-98.55	-67.42	-243.54	-159.11
Mean *Change* if the alternative were used (*t-stat*)	4.09 *(1.39)*	0.60 *(0.17)*	-43.73*** *(-6.08)*	8.65 *(1.41)*	-127.12*** *(-9.68)*	-13.17 *(-0.76)*
No.[%] of cases where change in BHAR is negative (*z-stat*)	123 [47.1%] *(-0.93)*	133 [49.3%] *(-0.24)*	167 [64%]*** *(4.52)*	105 [38.9%]*** *(-3.65)*	209 [80.1%]*** *(9.72)*	141 [52.2%] *(0.73)*

**Table 8.8 Comparison of *Forecasts* of Acquirer Post-Acquisition CAR If
the Alternative Contract Status were Used with the *Actual* CAR**

This table compares mean actual acquirer post-acquisition CAR to mean forecasts of acquirer post-acquisition CAR if the alternative CEO contract status were used. Forecasts of CAR if contracts were used are determined as the product of the regression coefficients estimates from the regression of the 261 acquisitions with CEO contracts [Eq. (5.4) in Table 8.5] and the independent variables, excluding the inverse Mills ratio, for each firm in the sample of acquisitions without CEO contracts. The forecast s of acquirer CAR if CEO contracts were not used are determined in the same way using the regression estimates for the 270 deals without CEO contracts [Eq. (5.5) in Table 8.5]. Panel A presents results on CAR adjusted by value-weighted return on matched size and book-to-market reference portfolios, while Panel B on CAR adjusted by equally-weighted benchmark returns. The third row presents mean changes in BHAR if the alternative contract status were true. The *t-statistics* based on the two-sided test with the null hypothesis that the mean change is zero are in the brackets. ***, **, * indicates significance at the 1%, 5% and 10% level respectively. The last row provides the number of cases with negative changes in BHAR had the other contract status been true. The percentage of the negative changes is reported in the parenthesis The *z-statistics* based on the two-sided binomial test with the null hypothesis that changes in acquirer returns are equally likely to be positive or negative are reported in the brackets. ***, **, * indicates the significance at the 1%, 5%, and 10% level.

Panel A: CAR Adjusted by Value-Weighted Return on Matched Size and Book-to-Market Reference Portfolios

	One Year (%)		Three Year (%)		Five Year (%)	
	261 Acquisitions with Contract	270 Acquisitions w/o Contract	261 Acquisitions with Contract	270 Acquisitions w/o Contract	261 Acquisitions with Contract	270 Acquisitions w/o Contract
Mean *Actual* CAR	4.44	1.50	18.16	6.85	29.77	21.16
Mean *Predicted* CAR if the other status were true	5.15	7.95	-4.15	17.51	17.11	26.13
Mean *Change* if the alternative were used (*t-stat*)	0.71 (0.31)	6.45*** (2.64)	-22.31*** (-5.57)	10.66*** (3.11)	-12.66*** (-2.86)	4.97 (1.27)
No.[%] of cases where change in CAR is negative (*z-stat*)	133 [51.0%] (0.31)	119 [44.1%]* (-1.95)	170 [65.1%]*** (4.89)	105 [38.9%]*** (-3.65)	148 [56.7%]** (2.17)	114 [42.2%]** (-2.56)
Panel B: CAR Adjusted by Equally-Weighted Return on Matched Size and Book-to-Market Reference Portfolios						
Mean *Actual* CAR	-11.55	-14.26	-28.01	-40.41	-38.89	-52.35
Mean *Predicted* CAR if the other status were true	-10.63	-9.88	-50.00	-25.59	-57.89	-37.23
Mean *Change* if the alternative were used (*t-stat*)	0.92 (0.40)	4.38* (1.78)	-21.99 (-5.72)	14.82*** (4.28)	-19.00*** (-3.42)	15.12*** (3.85)
No.[%] of cases where change in CAR is negative (*z-stat*)	135 [51.7%] (0.56)	129 [47.8%] (-0.73)	182 [69.7%]*** (6.38)	94 [34.8%]*** (-4.99)	169 [64.8%]*** (4.77)	99 [36.7%]*** (-4.38)

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