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Disentangling the Repurchase Announcement An Event Study Analysis to the Purpose of Repurchases

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Disentangling the Repurchase Announcement

An Event Study Analysis to the Purpose of Repurchases

by

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A dissertation submitted in partial fulfillment
of the requirements for the degree of
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Robin Wilber

ABSTRACT

Researchers have consistently shown that a firm's repurchase announcement is met with positive abnormal stock price return reactions. Open-market repurchases are extremely flexible, non-committal and non-punitive; thus, it is puzzling that the mere announcement of an open-market repurchase will likely increase a firm's stock price. I propose to disentangle a firm's choice to repurchase its stock to determine when a repurchase announcement is good news for shareholders and when the announcement is not.

I find that the purpose of the repurchase announcement matters. At the announcement date, managers' intention of avoiding dilution is significantly negative and enhancing shareholder value is significantly positive, as expected. However, more interesting results are observed at two-years and three-years post announcement where I show that counteracting dilution is not a good reason to conduct a repurchase and, although not as strongly negative, enhancing shareholder value does not bear out its announcement promise. Furthermore, I find that firms that repurchase their shares to finance an acquisition are well compensated for their efforts, especially in the long run. I

attribute their success to higher cash flows resulting from reducing their tax burden with their amortization deduction of the goodwill created from the purchase accounting acquisition.

Chapter 1

Introduction

It is well documented that when firms announce repurchase intentions, their stock price, on average, increases during the repurchase announcement window[1] and the increases are persistent.[2] A common explanation for this is that firms repurchase their stock when the managers believe that it is undervalued (Dittmar (2000)); thus, the repurchase activity signals undervaluation to the market. Another frequently suggested explanation for the positive stock price reaction to a firm's repurchase announcement is that a repurchase is a good use of the firm's free cash flows (Jensen (1986)). It is also suggested that repurchases may also provide for a better distribution of cash than dividends because of their temporary and flexible commitment (Jagannathan, Stephens and Weisbach (2000)).[3] This is likely one reason why companies choose to distribute cash to shareholders as repurchases over dividend increases.[4]

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[1] Dann, 1981; Comment and Jarrell, 1991; and Ikenberry, Lakonishok, and Vermaelen, 1995.

[2] Conrad and Kaul, 1993, and Lakonishok and Vermaelen, 1990.

[3] See also Guay and Harford, forthcoming JFE. Lie, 2000, finds positive stock price reactions related to self-tender offers and also large special dividends and not for regular dividend increases.

[4] Liang and Sharpe, 1999, report that in 1997 and 1998, share repurchases by S&P 500 companies exceeded dividend payments to common stockholders. Also, non-bank S&P 500 firms tripled their repurchases from 1994 to 1998 reaching $150 billion. Over the same period dividends rose only 35% to $115 billion. In another study, Ikenberry, Lakonishok and Vermaelen, 2000, report that between 1996 and 1998, more than 4,000 open-market repurchases were announced, which if fully completed, would amount to approximately $550 billion. During this same period cash dividends totaled $490 billion. Weston and Siu, 2002, show repurchases as a percentage of dividends growing from 31.4 percent to 68.1 percent from 1994 to 1998. Despite different data sets, the empirical evidence establishes a higher growth in repurchases than dividends over the 1990s.

The increased use of open-market repurchases has coincided with an increasing reliance on stock options to compensate top managers. Stock options encourage managers to choose repurchases over conventional dividend payments because repurchases, unlike dividends, do not reduce the stock price (Jolls (1998)). In a 1994-1998 sample of S&P 500 firms, gross repurchases reduced shares outstanding two percent annually; but, owing to the exercise of employee stock options, only about half of those shares were actually retired (Liang and Sharpe (1999)). Thus, it appears that repurchases are not only announced to signal undervaluation and as an appropriate use of free cash flow, but may also be conducted to cover options previously committed by the firm. Kahle (2002) suggests that if firms are repurchasing shares to fund employee stock options, then in an efficient market the announcement period return should not be as positive as if the repurchase were due to undervaluation or free cash flow. Signaling undervaluation or an effective use of cash flow are well-documented viable hypotheses that support the positive stock price reactions observed with the repurchase announcement.

Since it is well known that on average stock prices increase after a repurchase announcement, it is possible that firm managers announce repurchases for opportunistic reasons. A firm manager's options would increase in value if the stock price increased at the mere mention of a repurchase. Furthermore, an increase in stock price would support more favorable terms for an acquiring firm in a stock-financed acquisition.

I propose that not all repurchase announcements carry the same message. With this in mind, I propose to contribute to this increasingly important payout choice by

disentangling the repurchase announcement and distinguishing between a "good news" repurchase and a "no good news" repurchase.[5]

In chapter 2, I use standard event-study analysis to investigate the stock price return reaction to firms announcing a repurchase for possibly opportunistic reasons such as to facilitate an acquisition, to counteract dilution effects and to cover options. Consistent with others, I find persistence in positive abnormal returns; however, the possibly opportunistic reasons are less positive. Furthermore, the repurchase purpose of counteracting dilution shows significant negative results at two-years and three-years post announcement and although not as strong, enhancing shareholder value does not bear out its announcement promise. The strongest positive reason to conduct a repurchase is to initiate or to fund an employee stock option plan.

Since it is very likely that opportunistic behavior is motivated by the level of executive ownership in the firm, I investigate the return reaction while controlling for current ownership levels and also controlling for option ownership level of the firm's chief executive. Consistent with agency theory, I find the best abnormal three-years post announcement return performance is with firms in which CEOs own one to five percent of the stock and are compensated with a medium level of options. Unexpectedly, I find the best two-year return performance is with firms in which the CEOs own no stock and receive no options. This group also has the distinction of being the second best performer

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[5] Harford, 1997, recognizes that repurchases afford managers with the opportunity to behave opportunistically. In his investigation of Dutch-auction and fixed-price tender offer he argues that managers who are also shareholders can choose to participate or not in tendering their shares. If they choose to hold they are essentially putting their wealth at risk (especially if the signal is false). Thus, Harford argues managers could choose to participate in overpriced offers and not participate in underpriced offers. Using

at three years post announcement. This suggests that option granting and CEO ownership do not influence performance, or that the cost of the options outweigh the benefit of improved CEO performance.

In chapter 3, I focus on firms that choose to conduct a repurchase of their own stock in order to facilitate an acquisition. This activity seems puzzling in that if a firm has the cash available to repurchase its stock and thus could use cash directly for an acquisition. Thus, it seems odd that a firm should take an extra transactional step to acquire another firm, which might result in a loss of time and corporate value.[6] Also puzzling is the research that shows that cash-financed acquisitions perform better than stock-financed acquisitions. At first glance it would appear that firms are taking on additional transactions and on average might perform poorer. I find that this is not the situation. Firms that take on the extra financing step are well compensated for their efforts, especially in the long run. These firms have cash available and positive earnings, but on average have negative abnormal returns prior to their repurchase announcements. Thus, these firms are likely to be undervalued and therefore choose this method of financing to signal undervaluation in the market place. Furthermore, the stock acquisition step allows these firms to share risk with the target firms, counteract the negative effects of dilution by repurchasing their shares first, and enjoy a tax advantage for their efforts.

Most research to date has exclusively focused on the open-market repurchase. The Securities Data Corporation (1994 – date) now tracks Dutch-auction (2% of all

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probit analysis Harford finds that managers do not behave opportunistically, but rather set terms that offer to maximize shareholder wealth.

repurchases announced in 2000), fixed-price tender-offers (3percent), negotiated (4percent), and open-market negotiated (58percent), in addition to often-studied open-market repurchases (33percent). I will include open-market repurchases, Dutch-auction and fixed-price tender offers in this study and control for the announcement by the level of option granting and the motivation of the repurchase as indicated by management. Furthermore, most research has not had the advantage of the last few years of data. Original research on repurchases and options was carried out through a long-period of a bull market. Due to the market downturns of the past four years, I have the advantage of studying repurchase and options during both an increasing return market and a decreasing return market.

In order to accomplish this, I use the Securities Data Corporation Platinum database to determine that my sample of firms to be those that have chosen to repurchase their shares by the board's announcement date(s), the type of repurchase conducted, and the firm's stated reason for conducting. Information on executive compensation and option variables are taken from S&P ExecuComp database. Finally, the stock price return data is obtained from CRSP and many of my control variables from Compustat.

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[6] Most research has shown that stock-financed acquisitions decrease the market value of the bidding firm. See Bradley, Desai, and Kim, 1988; Lang, Stulz, and Walkling; 1989; Servaes, 1991; and Dennis and McConnell, 1986.

Chapter 2

When is a repurchase announcement not good news?

In recent years, firms have disbursed more cash to shareholders in the form of repurchases than in the form of dividends,[7] thus the rationale for repurchasing acquires added importance. In this chapter, I investigate the reported purpose of such repurchases to see if the repurchases carry the positive stock price reactions documented by others and I find that the underlying purpose matters. Since 1995, firms reported the following purposes for their repurchase: to enhance shareholder value; to counteract dilution; to fund a stock option plan; to indicate undervaluation; to fund an acquisition; to support an employee benefit plan; and for general business purposes. As examples of purposes mattering, I find that at the announcement date, managers' intention of avoiding dilution carries significantly negative returns and I also find that enhancing shareholder value is significantly positive. Moreover, when the results are observed at two-years and three-years post announcement they are even more interesting. For example, counteracting dilution is negative and thus is not a good reason to conduct a repurchase and although not as negative, enhancing shareholder value does not bear out its announcement promise at the two-year and three-year periods.

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[7] Ikenberry, Lakonishok and Vermaelen, 2000; Liang and Sharpe, 1999.

The organization of this chapter proceeds as follows. The first part discusses the choice between repurchases and dividends, theoretical underpinnings of free cash flows and undervaluation and the research results, the repurchase choice and the influence of management options. The second section develops the hypotheses and methodology. The third section reports the empirical findings and the last section summarizes and concludes the chapter.

Literature Review

Repurchase or Dividend Decision

During the 1990s, firms chose to disburse more cash to stockholders in the form of repurchases than in the traditional form of dividend payments. In 1997 and 1998, in fact, share repurchases by S&P 500 companies exceeded dividend payments to common stockholders. In fact, non-bank S&P 500 firms tripled their repurchases from 1994 to 1998 to $150 billion. Over the same period dividends rose only 35 percent to $115 billion (Liang and Sharpe (1999)). Grullon and Michaely (2002) suggest that repurchases are an equivalent substitute for dividends. They show that the market reaction to dividend cuts is not significantly different from zero for firms that also repurchase their shares. Grullon and Michaely argue that repurchase programs should be superior to dividend payouts because repurchases disburse cash in a way that reduces shareholder tax liability.

Repurchases also offer the firm flexibility in making payments and as such there is no long-term commitment associated with the methods of disbursement. A dividend increase suggests a permanent plan for disbursement. Jagannathan, Stephens and Weisbach (2000) suggest that dividends are paid by firms with higher permanent

operating cash flows and repurchases are paid by firms with higher temporary non-operating cash flows.

Free Cash Flows or Undervaluation

Many researchers have documented abnormal positive stock price returns to firms that repurchase their shares.[8] These researchers have found that positive cumulative abnormal returns (CARs) occur in both short-term and long-term studies. The short-term reaction could result from the firms conveying revaluation information to the public. Chang (1993) suggests that repurchases are a credible informational signal if managers know more than investors and information is costly. The new information could indicate that the firm has free cash flows and purchasing its own shares is a good investment, or that the firm believes that its shares are undervalued and purchasing shares is a rational investment in a positive net present value project.

Researchers have put forth arguments suggesting both that repurchases signal undervaluation and also that repurchases are an appealing use of free cash flows.[9] For example, Ikenberry, Lakonishok and Vermaelen (1995) justified announcement date abnormal returns of 3.5 percent for open-market repurchase announcements to managers'

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[8] Dann, 1981; Dann, Masulis, and Mayers, 1991; Ikenberry, Lakonishok, and Vermaelen, 1995; Lakonishok and Vermaelen, 1990, and Vermaelen 1981.Erwin and Miller, 1998, show that in addition to positive stock price reactions for firms announcing repurchases, they also find negative stock price reactions to rival firms.

[9] Bagwell, 1991, presents another explanation by showing that an upward sloping demand curve exists. Thus, when a firm repurchases its shares, given heterogeneous valuations, shareholders with the lowest valuations will sell and the remaining shareholders will have higher valuations and the stock price must increase.

claims to repurchase their stock because prevailing market prices are too low. Thus a repurchase is a good investment.

The other hypothesis which explains positive stock price reactions is that a repurchase is an agency mitigating, and thus effective use of free cash flows. Jensen (1986) explains the problems of firm's free cash flow as follows: It would be optimal if managers owned 100 percent of the firm. However, due to the legal structure in the United States we find that 50 percent of firms have very broad ownership. Jensen puts forth the often-cited hypothesis that given separation of management and ownership there will be agency costs. It is in the manager's best interest, for example, to increase the value of his or her personal options by influencing the current market price of the stock. Obviously, this might also benefit the shareholders.

In addition to agency mitigating, firms that choose to repurchase their own stock with free cash flows may be, in fact, choosing their best investment opportunity. The free cash flow hypothesis would support the positive abnormal stock price reactions empirically found at the announcement of a repurchase. Thus, repurchases are generally considered a good use of free cash flow because the repurchase reduces cash, which in turn reduces agency costs. On the other hand, Song (2002) argues that the open-market repurchase is not a credible commitment because repurchase distributions are not mandated by law and can occur at any time and by any method chosen by the manager.[10]

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[10]Currently the Security Exchange Commission (SEC) has few regulations regarding disclosures of repurchase activities. In a nutshell, Securities and Exchange Commission release nos. 33-7881, 34-43154, IC-24599, file no. S7-31-99 states that an issuer conducting a repurchase program need not specify the amounts, prices, and dates that it will repurchase its securities; rather, the issuer can adopt a written plan when it is not aware of material nonpublic information. On, December 10, 2002 the SEC issued a proposed amendment to its 10b-18 rule regarding providing a "safe harbor" from liability for manipulation when a

Song (2002) [11] adds that United States corporate law does not mandate corporations to pay out a certain level of cash distributions, and in fact managers have strong incentives to avoid payouts. For example, managers are more risk-averse than shareholders because it is difficult to diversify their own human capital. Thus, risk-averse managers have strong incentive to hold extra money for unexpected future hard times. Song concludes that managers have the opportunity to further their own interests, which, in turn, may result in significant social costs that may offset any benefits of the repurchase.

Ikenberry and Vermaelen (1996) suggest that the market would only view open-market repurchases as credible if they were firm commitments. Companies choosing to falsely signal must be forced to repurchase shares at prices above their true long-run value in order for there to be a cost to false signaling. Ikenberry and Vermaelen question

firm repurchases its common stock in the market in accordance with the rule's manner, timing, price, and volume conditions. The SEC notes that an issuer may have the incentive to manipulate the price of its securities and one way to positively affect the price is to purchase securities in the open market. This amendment would require repurchase disclosures to Regulations S-K and S-B and Forms 10-Q, 10-QSB, 10-K, 10-ksB, and 20-F indicating the total number of shares purchased for the previous quarter, the average price paid per share, the identity of the broker, the number of shares purchases as part of a publicly announced plan and the maximum number of shares that may yet be purchased. The SEC is also proposing footnote disclosure of the principal terms of publicly announced repurchase plans including 1) the date of the announcement, 2) the share or dollar amount approved, 3) the expiration date (if any), 4) each plan that has expired during the period, 5) each plan the issuer has determined to terminate prior to expiration, and 6) each plan the issuer has not purchased under during the period. In fact, as long as firms follow the SEC guidelines as set forth in SEC Rule 10b-18, firms will receive "safe harbor" protection from liability from purchasing their own stock. The 10b-18 Rule (SEC file no. S7-50-02) applies to bids for and purchases of an issuer's common stock by or for an issuer. The safe harbor does not confer absolute protection from all liability for purchases (e.g. purchases that are part of a plan or scheme to evade federal security laws) even if made in technical compliance with the Rule. Rather the safe harbor provides only that certain, specific provisions of the securities laws will not be considered to have been violated solely by reason of the manner, timing, price, or volume of such repurchases, provided the repurchases are made within the limitations of the Rule. The four conditions of the rule are 1) issuer to use a single broker or dealer per day to bid or purchase its common stock; 2) issuer cannot bid for or purchase at the opening and during the last half hour of trading during the day; 3) highest price bid or pay for must be set by independent market forces; and 4) issuers may effect daily purchases up to 25 percent of the average daily volume. The Safe Harbor is a guideline for corporations to follow to avoid being accused of fraudulent trading practices. The guidelines are not mandatory.
[11] Song, 2002, develops the theoretical rationale to argue for regulation in open-market repurchasing.

whether the news of an open-market repurchase program should be viewed as a credible information signal and further suggest that the firm's true intention is unknown.

Nohel and Tarhan (1998) investigate the motive for repurchase and suggest that it is possible for different firms to repurchase for different reasons. For example, some firms may signal a bright future (undervaluation), while others distribute excess cash. Nohel and Tarhan look at operating performance changes to see if firms are undervalued and are choosing to signal this information. If this were the case, Nohel and Tarhan argue, we should find operating performance improvement relative to what was expected and thus management would be signaling credible information. Specifically, Nohel and Tarhan hypothesize that high-growth firms may use the repurchase to signal investment opportunity, while low-growth firms may distribute cash instead. Sorting by Tobin's q, they unexpectedly find significant improvements in operating performance following the repurchases from the low-growth firms. Nohel and Tarhan find repurchasers outperform their matched-control firms by 23.3 percent for low q-firms but are significantly negative for high-q firms. They also find that leverage increases after the repurchase, but the results are driven by high-q sample of firms. They find that market-to-book values of low q firms remain lower than their control group, and post-repurchase performance at low q firms is correlated with assets sales, which supports the free cash flow hypothesis.

In another study, Evans and Gentry (1999) not only find little improvement but actually find underperformance by repurchasing firms. They find that firms that do not repurchase their shares create more long-run growth in value than firms that incorporate a buyback strategy. Specifically, they find that small and mid-size non-repurchasing firms

outperform firms that repurchase their shares. Evans and Gentry attribute these results to the productive net working capital and capital projects investments made by the non-repurchasing firms. Contrary to other researchers, their findings do not support the theory that share-repurchase programs are related to management signaling an increase in a firm's long-run performance in the market, nor that a repurchase strategy signals that shares are undervalued.

Type of Repurchase

D'Mello and Shroff (2000) show with an earning-based valuation model that 74 percent of firms announcing fixed-price tender offers were undervalued. This would indicate that firms using a fixed-price tender offer are signaling a credible undervaluation message. Thus, it appears that managers can credibly convey their perceived dollar amount of stock undervaluation by the type of repurchase offer they choose. Traditional fixed-price tender offers specify a single purchase price in advance, a number of shares sought, and an expiration date. Dutch-auction offers also specify a number of shares sought but at a range of prices within which each tendering shareholder chooses his or her minimum acceptable selling price. Generally, because the Dutch auction allows the managers to obtain a relatively low (minimum) offer price, it follows that Dutch auctions should provide a weaker signal of market price undervaluation than an otherwise equivalent fixed-price tender offer; that is, Dutch auction offers with low minimum offer prices should not be as convincing a signal of undervaluation as a fixed-price tender offer. Comment and Jarrell (1991), in their study with 1984-1989 data, find average

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excess returns of 11 percent at the announcement date with fixed-price tender offers and

8 percent for Dutch auctions. Furthermore, they find that open-market repurchase

announcements are met with only two percent average excess return. Comment and

Jarrell's results support the signaling hypothesis. Firms that send the strongest signal by

attaching a clear premium are met with the greatest event-day stock price reaction.

Li and McNally (1999) employ a conditional study framework to determine the

characteristics of firms choosing to make tender offers over those making open-market

repurchase offers. They find that tender offering firms have higher cash flows, higher

dividend yields, poorer investment opportunities, greater volatility of returns and larger

insider share holdings. Li and McNally note that this is consistent with large shareholders

having the ability to mitigate agency problems of financial slack. They conclude that

firms exhibit comparative advantage in their choice of repurchase method.

Gay, Kale and Noe (1996) present a theoretical argument of the advantages of

Dutch-auction repurchases over that of fixed-price tender offers. They confirm the

intuitive argument that firms pay more than is needed to buy back the desired number of

shares when conducting a fixed-price tender offer due to over-subscriptions. The authors

suggest that if firms use a fixed-price offer, then there will be an excessive wealth

transfer from remaining shareholders to exiting shareholders. This raises the question as

to whether there are repurchase situations where the firm pays back too much for its

stock.

In another study, Hodrick (1999) finds that the firms that will face greater stock

price elasticity are more likely to choose a Dutch-auction repurchase offer over a fixed-

price tender offer. Other characteristics of the Dutch-auction choosing firms noted by Hodrick are that they have larger market capitalizations, smaller insider holdings, larger institutional holdings, lower trading volume and tend to repurchase fewer shares during the repurchase program.

The most common type of repurchase is accomplished through open-market repurchases where a firm announcing the open-market repurchase provides no commitment to carry out its announced repurchase intentions. The firm can buy back as many, or as few, shares as desired over a period of time at varying current market prices.

Stephens and Weisbach (1998) find that between 46 percent and 75 percent of firms complete their repurchase plans within one year and 74 percent and 82 percent of shares of all firms in the sample are actually acquired.[12] Their study finds share repurchases are negatively related to prior stock-price performance and positively related to levels of cash flow. Stephens and Weisbach suggest that firms purchase the stock when it is undervalued and defer when it is overvalued and thus firms choose open-market repurchases over Dutch-auction or self-tender because of the flexibility in magnitude repurchased and the timing of the repurchase.[13] In an out-of-sample test, Ikenberry, Lakonishok and Vermaelen (2000) studied Canadian firms. Canadian firms are required to report each month the number of shares they actually repurchase. Surprisingly,

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[12] Altobelli and Wiggins, 1998, that on average firms repurchase more shares than originally authorized and conclude that the open-market repurchase announcement is a credible signal. They also find that firms actively issue shares while repurchasing so that the average decrease in shares outstanding is only about 20% of the number repurchased.

[13] Cook, Krigman, and Leach, 2001, find that while there is considerable variation across firms, NYSE firms under-going open-market repurchase activities on average beat their benchmark whereas Nasdaq firms do not. This suggests that NYSE firms are able to plan the timing of their open-market transactions to their advantage.

Ikenberry, Lakonishok and Vermaelen find that about 25 percent of firms never purchase any of their shares and less than 5 percent of firms fully complete their repurchase programs (overall the mean completion rate is 28.6 percent).

If firms use repurchases to signal undervaluation then why do we not see more firms using fixed-price and Dutch-auction arrangements, since these two methods should provide a stronger signal of undervaluation? Furthermore, Song (2002) suggests that open-market repurchases are not credible commitments since the offers can be canceled anytime without legal or market punishment. Thus, there is no cost to the insiders and if there are no costs, such announcements cannot be viewed as a signal. However, in spite of the weak and questionable signal, we find the predominant structure of a repurchase accomplished through open-market repurchases (see Table 1). Firms choose to conduct an open-market repurchase six times as frequently as fixed-price self-tender and Dutch-auctions combined. Comment and Jarrell (1991) predict that fixed-price self-tender offers should be the strongest signal of firm undervaluation followed by Dutch-auction. The weakest signal should come from open-market repurchases because they have no attached premium.

It is possible that each type of repurchase implies a different message. Persons (1994) presents a repurchase choice model. He finds that Dutch-auction repurchases are more effective takeover deterrents, while fixed-price repurchases are more effective signals of undervaluation. Persons' research sheds light on why firms choose between Dutch-auction and fixed-price tender offers, but does not help to explain why the open-

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market procedure has become the preferred method of cash disbursement to shareholders.[14]

Management Compensation and Options

In addition to reducing free cash flows through repurchases, increasing debt obligations, or increasing firm's leverage or risk levels in order to mitigate agency problems, a firm can tie manager's compensation to performance.[15] Almost a decade ago, shareholders, led by institutional investors, pressured corporate boards and executives to tie managers' compensation to performance. Under this "pay for performance" ideal, many companies began aggressive stock option plans for managers and employees. Awarding stock options to employees and executives not only tied pay to performance but was also perceived to mitigate the principal-agent problem. Thus, while repurchases increased during the 1990s, there was an increasing reliance on stock options to compensate top managers.[16]

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[14] Although open-market transactions are conducted six times as frequently as fixed-price tender-offers and Dutch-auction combined, the market value of the repurchase is considerably less. The total market value of open-market repurchases from 1984-2001 is one-third the market value of the other two methods combined.

[15] Mehran, 1992, investigates the firm's capital structure with management's incentive plans, management's equity ownership and several monitoring proxies, and finds results consistent with agency theory.

[16] Top 200 US companies allocated a record 15.2% of their shares to employee stock options as a percent of shares outstanding in 2000, compared to 7.5% in 1990 (Yang and Carlton 2002). Also executive equity holdings account for nearly 70% of CEO compensation and most of the shares are the result from the exercise of their stock options (Pearl Meyer & Partners, an executive compensation consulting firm). Also Bowen, 1996, reports in the Wall Street Journal that the 200 largest companies reserved more than ten percent of their common shares to be awarded to managers, which is an increase from six percent six years earlier.

Employees arguably have some informational advantage and there is, most likely, value in fortuitous timing of option grants and exercises.[17] Yermack (1997) finds that managers receive stock-option grants shortly before good news announcements regarding earnings, and delay such grants until after bad news announcements. Yermack suggests that options are not so much an incentive device but rather a covert mechanism for self-dealing. On the other side, compensation-based options do have a few value decreasing differences, including vesting restrictions and compensation based options that are non-transferable. Employees also tend to exercise options early (American options) leaving some value unrealized.

Stock options can encourage managers to choose repurchases over conventional dividend payments because repurchases, unlike dividends, do not reduce the per-share value of the stock. Jolls (1998) finds that firms that relied heavily on stock-option based compensation are significantly more likely to repurchase their stock than firms that do not. Furthermore, Jolls and others attribute the growth in open-market repurchases to the increase in option grants.[18]

The granting of options to both managers of firms and employees has been lauded as a sound performance-based compensation plan for firms.[19] Employees, managers, board members and sometimes consultants have been granted stock options, usually at

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[17] See Rothschild and Stiglitz, 1976, for discussion on imperfect information.
[18] Arnold and Gillenkirch, 2002; Bens, Nagar, Skinner, and Wong, 2002; Fenn and Liang, 2001; Grullon and Michaely, 2002 and 2003; and Kahle, 2002.
[19] Contrary to the argument that pay should be tied to performance, Elayan, Lau, and Meyer, 2001, find that companies which adopt incentive compensation schemes do not outperform companies without incentive compensation schemes.

the current market price.[20] The general argument for pay-for-performance is that

managers and employees will work harder if a portion of their pay is incentive-based.

The goal for employees is to profit from in-the-money options, which is likely to occur

when stock prices are high. Companies presumably will pay smaller salaries and cash

bonuses when options are substituted for direct compensation. Shareholders should

benefit in this alignment of interest to increase the value of the firm. In an ideal world, as

the firm's stock price increases, employees and managers receive higher compensation as

their options move in-the-money. Shareholders also benefit as the value of their shares

increases.[21]

Contrary evidence has been provided by Yermack (1995) in his investigation of

why companies award stock options to their top managers.[22] He tests nine agency and

financial contracting theories using Tobit and panel data analysis and finds little

explanatory power with any of these prevailing theories. Specifically, Yermack finds

companies do not provide incentives from stock option awards in any significant

association with the fraction of equity owned by the CEO. He also finds a negative

association between incentives provided by stock options and the presence of growth

opportunities which is counter to many other studies that suggest that firms with growth

opportunities provide higher levels of CEO compensation. Furthermore, Yermack finds

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[20] According to generally accepted accounting standards firms only report the difference of option grant over the current market price as an expense during the year granted. As long as companies issue options at market price or out of the money, no expense needs to be recorded. Thus firms generally choose to issue at market.

[21] David Aboody, 1996, analyzes the value of employee stock options (ESO) and finds ESOs to be negatively correlated with the firm's stock prices. In early option vesting years there is a positive effect on firm value, but vested options are considered a net cost to the firm's shareholders.

no significant association between financial leverage and incentives from stock option awards despite prediction from John and John (1993). Thus, although pay for performance has been argued to be the optimal compensation structure, it appears that there is a general absence of management incentives in CEO compensation packages.

Interestingly, during most of the 1990s bull market, executives received huge compensation packages in the form of options even when their companies lagged behind stock market averages, reports the Wall Street Journal.[23] Executives and employees were happy and investors were satisfied as long as the stock prices continued to increase. Unfortunately, there is no clear evidence that options generate better performance of a firm's earnings, suggests the Wall Street Journal. Also, it appears that executive behavior changed in other less productive ways during that period, adds the Journal.[24] Thus, although the argument for performance-based compensation is sound, the performance measure may need adjustment (for example, tied to an index) in order that the compensation costs do not outweigh their benefits (Gillan (2001)) and to force the firm to conduct ongoing repurchases to meet the option exercise demand.

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[22] Blasi, Kruse, and Berstein, 2003, argue that options can be effective only if they are granted to all employees and not just the top managers.

[23] Lee, Susan, 2002, The Ugly Option, Wall Street Journal (New York).

[24] One less productive management action has been the repricing of options. A consequence of later falling stock market prices was to make many employee and executive stock options essentially worthless, or to have been pulled "underwater". This means that the exercise price of the options has fallen below the current market price of the underlying security. Many employees had accepted compensation packages that included less salary, in hopes of large option payoffs. As the stock prices dived and the employees lost compensation, many may have chosen to relocate to another firm where they could receive an option package with a low exercise price at the new firm and ultimately a higher probability of realizing a gain. Managers of firms were thus under pressure to reprice the options in order to keep talented employees. Repricing options is a process of canceling existing outstanding options and reissuing at a lower strike price. Jin and Meulbroek, 2001, find that underwater options remain effective and conclude that restoring incentive alignment is not a sufficient reason for repricing options.

Kahle (2002) examines how stock options may have affected the firm's decision to repurchase shares and finds that firms announce repurchases when executives have large numbers of options outstanding. So, during the 1990s as executive compensation increased in the form of options[25] firms repurchased their stock at increasing prices. Bens, Nagar, Skinner and Wong (2002) substantiate this by finding that managers do repurchase shares to avoid the dilutive effects of employee stock option plans. Furthermore, the authors add that since repurchases involve paying out cash, thus reducing the future dollar return on that cash, the repurchase will ultimately result in reducing future earnings per share by reducing earnings. Thus, the original argument of initiating a repurchase to counteract dilution to presumably increase or at least maintain earnings per share may, in fact, in the long run decrease earnings per share. This is substantiated by Fenn and Liang (1998), who find negative relationships between their proxies for investment opportunity and marginal financing costs and repurchases. Lie and McConnell (1998) state that when firms repurchase shares to avoid dilution relating to option exercise there is a wealth transfer from shareholders to employees, since the cost of repurchase is much higher than the price at which employees exercise their options. Klassen and Sivakumar (2001) argue that when repurchases are conducted because managers believe their stock to be undervalued, then positive information is conveyed to the market. A repurchase to reduce dilutive effects does not convey new information about future firm performance and on one hand should be irrelevant. In this case we should not see any abnormal return reactions with a repurchase announcement to

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[25] Der Howanesian, Mara, 2002, The Buyback Boomerang, Businessweek.

counteract dilution. However, repurchasing shares does not effectively reduce economic

dilution because the firm gives up a portion of its assets to repurchase. Thus,

repurchasing to avoid dilution may have the negative effect of passing up better

investment opportunities. For these reasons, I suggest that repurchasing shares to

counteract dilution should not result in positive stock price returns reactions and may, in

fact, be negative, especially in the long run when the results of foregoing investment

opportunities are realized.

Klassen and Sivakumar (2001) note that the funding of stock option programs by

repurchasing shares is an expensive strategy and suggest that option exercise could

represent a real cost to the firm as a wealth transfer from shareholder to employee. The

Economist (1/27/01) reports a study by Smithers and Co. that documents that if options

had been accounted for at the time they were granted, the profits of large-listed

companies in 1998 would have been two-thirds lower. Klassen and Sivakumar note that

repurchases increased from 1995-1999 when stock prices were soaring and then dropped

during 2000. This implies firms were conducting buybacks as prices were increasing and

stopped when their stocks became cheap. This is in contradiction to the often-cited

undervaluation hypothesis.

Yermack (1997) finds that managers receive stock option grants shortly before

good news announcements and delay such grants until after bad news announcements.

Yermack suggests that options are not so much an incentive device, but rather a covert

mechanism for self-dealing.[26] Other researchers have suggested that managers behave opportunistically at the expense of shareholders. For example, Healy (1995) finds that firms are more likely to accrue discretionary expenses during years in which their operating income exceeds the upper limits or falls below lower limits of managers' accounting-based bonus plans. In another study, Jolls (1998) finds that option compensated managers substitute stock repurchases for dividend payments because managers normally do not share in dividends paid by the firm.

Fenn and Liang (1998) study whether firms substitute repurchases for dividends when management options are at stake. They find that share repurchases are positively related to management stock options and dividend increases are negatively related for the dividend-paying firms. Furthermore, Fenn and Liang found no statistical relationship between repurchases and management options for the non-dividend paying firms. In a similar vein, Lambert, Lanen and Larcher (1989) find that firms pay lower dividends after the adoption of stock option plans.

Liang and Sharpe (1999) study S&P 500 firms to establish the effects of firms that repurchase and exercise stock options. They find, in a 1994-1998 sample of S&P 500 firms, gross repurchases reduced shares outstanding two percent annually; however, owing to the exercise of employee stock options, only about half of those shares were

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[26] Specifically, Yermack, 1997, finds that the average abnormal stock return to the CEO is $30,000 after 20 trading days and $48,900 after 50 days. As an aside, options are awarded once a year by a compensation committee of the board acting under the authority of periodic shareholder votes. The options details are only disclosed in annual proxy statements, which could be as much as 15 months after the grant. Shareholder votes usually occur once every five years and Yermack, 1997, reports that as of his paper a NYSE's proxy expert had no knowledge of one ever being rejected.

actually retired. According to Liang and Sharpe, when firms repurchase shares to avoid

dilution relating to option exercise, there is a wealth transfer from shareholders to

employees since the cost of repurchasing is higher than the employee exercise price. This

would increase employee compensation and reduce the firm's future net income, thus

decreasing earnings per share available to the stockholder. As an aside, a firm that

chooses to issue new shares to facilitate option exercise would also experience a decrease

in earnings per share due to the increase in number of shares rather than the decrease to

earnings.

In a September 2002 Business Week article, Der Howanesian (2002) suggests that

stock repurchases can enrich executives' compensation at investors' expense. During the

1990s, cash rich firms purchased their stock at record high prices. Historically, buybacks

were supposed to be a good use of free cash flow and, as such, repurchasing activity

made sense when a firm's stock price was depressed, such as the period following the

October 1987 crash. But, did it make sense during the earlier 1990s when stock prices

were booming?

Thus, are buybacks simply a way for corporate executives to maximize their own

wealth, as Business Week suggests? Since it is well-known that repurchase

announcements are met with positive stock price return reactions, can executives boost

the price in the short-term and then sell their shares at a profit? This would have the

effect of transferring wealth from the shareholder or owners of the firm to the executives.

If this is the case, shouldn't open-market repurchase announcements be met with possibly

a negative, or at least non-positive, stock price return reaction?

Repurchases and Managerial Ownership

Researchers have suggested that the agency problem between owners and managers can be mitigated if the managers have equity ownership. Morck, Shleifer and Vishny (1990) examine inside directors' appointments and find that stock market reactions depend upon director ownership levels. Specifically, they find negative reactions when inside directors own less than five percent of the firm's common stock, significantly positive when their ownership level is between five percent and 25 percent, and insignificantly different from zero when ownership exceeds 25 percent. Morck, Shleifer and Vishny attribute this to the alignment of interests in the middle ownership range, but costs of entrenchment outweighing the benefits of alignment of interests at high levels of ownership. Thus, it appears agency issues may be mitigated when managers own between five and 25 percent of the company's stock. At ownership levels of less than five percent, agency issues are a valid concern.

McConnell and Servaes (1995) separate a large sample into high growth and low growth firms and investigate Tobin's q, debt, and equity ownership and find that firms with low (high) investment opportunity that q is positively (negatively) related to debt. McConnell and Servaes regress q with equity ownership and find some support that equity ownership is more important in low growth firms. This follows the Jensen (1986) argument that firms with poor investment opportunities are more likely to overinvest in negative net present value projects if free cash flow is available. Concluding, many other researchers have investigated the relationship between corporate value and the allocation

of shares among corporate insiders and while results differ there is a consensus that allocation of equity ownership matters.[27]

Hubbard and Palia (1996) propose the diversification-control hypothesis to address the impact of managers' private benefits of control as it relates to the bid premium paid in a merger. They develop a model and empirically show that 1) managers will indulge in non value-maximizing activities and will overpay the merger premium when the managers have a low ownership stake; 2) managers' and owners' interest are aligned as the ownership stake is increased and there is a negative relationship between the bid premium and managerial ownership; and 3) at significantly high ownership levels managers are again willing to pay high premiums due to private benefits of control. This gives rise to a non-monotonic relationship of first increasing (alignment of interest and value-maximizing behavior) and then decreasing as also shown by Morck, Shleifer and Vishny (1990).

Ofek and Yermack (1997) argue that although boards intend for stock options to boost the ownership positions of managers, there is no assurance that executive will behave accordingly. For example, modern portfolio theory suggests that managers receiving additional stock should sell those shares or shares they already own in order to diversify away the unsystematic risk associated with concentrating wealth in a single asset. Furthermore, this risk is higher for managers than ordinary investors because of their human capital investment. Ofek and Yermack find that executives sell stock during

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[27] For example see Holderness and Sheehan, 1988, and Hermalin and Weisbach, 1991, See also Lewellen, Loderer, and Rosenfeld, 1985, who find that returns to acquiring firms are positively correlated with the equity stake of the acquirer's top managers or low management ownership is associated with low returns.

years that they receive new options. Although consistent with modern portfolio theory, selling already owned shares counteracts the board's objectives. Specifically they find that, on average, executives will sell 180 shares of stock for every 1000 new stock options awarded. Additionally, executives retain virtually none of the shares they acquire with the exercise of the options

Thus, it appears that the granting of options may not have the intended purpose of aligning managers' and stockholder' objectives. Although option granting may not be the optimal method of turning managers into owners, we do know that ownership matters.[28] In the spirit of Morck, Shleifer and Vishny (1990), and of Raad and Wu (1994), I expect that the repurchase announcement should be positive for firms with high free cash flows, for it should align managerial and stockholders interests. However, if a firm has low managerial ownership and high free cash flows a repurchase could either help control the potential agency issues (good use of free cash flows) or it could be that the manager with significant options has the incentive to manipulate the firm's stock price with a repurchase announcement.

Another group which may have the incentive to manipulate and also the means to manipulate would be firms with high managerial ownership (entrenched managers) and high free cash flow. This group may be able to manipulate the firm's stock price in the short-run but may do poorly in the long-term.

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[28]Morck, Shleifer and Vishny, 1990; McConnell and Servaes, 1995; and Rosenstein and Wyatt, 1997
Contrary to these and other researchers, Himmelberg, Hubbard, and Palia, 1999, use panel data to show that we cannot conclude that a firm's performance is effected by managerial ownership.

At the other extreme are firms with high managerial ownership and low free cash flows. Firms with these characteristics should not be susceptible to agency problems and thus should not require stock options to align shareholder and manager incentives.[29] In these firms the stock option grant may be an unnecessary and expensive compensation package. Furthermore, we may find the repurchase announcement to be non-positive because options may serve to exacerbate the entrenchment problem.

I have made a theoretical argument that ownership matters and different levels of managerial stock ownership and levels of option grants can provide different managerial incentives. However, I still may not be able to disentangle the opportunistic behavior of managers. In other words, a self-serving manager who manipulates the price of the firms stock with an increase in market price is not necessarily acting against shareholders interests. In this case, it would be possible for everyone to gain.

In reference to payouts and ownership stakes, Fenn and Liang (2001) show that the highest firm payouts (dividends and repurchases) occur in firms that are more likely to have agency problems (for example, low executive ownership and high free cash flows). Jolls (1998) shows that the growth in repurchases is tied to the increase in options granted. It would appear that the firms that should derive the most benefit for granting options would be the firms with the greatest potential for agency problems. This would support significantly positive stock price reactions of firms announcing repurchase offers to cover options if the firm also had low managerial ownership and high free cash flows.

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[29] Although, these managers may not require options for agency mitigating problems, they may require options for what may be considered fair compensation in their industry.

Stock option grants may not depress current earnings directly; however, they will reduce future earnings. If a firm does not repurchase any shares, stock options will have a dilutive effect upon subsequent earnings per share. When a firm repurchases its stock, it reduces the number of shares over which earnings are divided. The cash used to finance the repurchase will reduce paid-in-capital, but will not directly affect earnings. Thus, some firms may have the incentive to combine on-going share repurchase programs with option programs to undo the erosion to earnings per share. Stock option grants should align shareholder objectives with firm managers' objectives. However, there must be a trade-off between the benefit of aligning incentives and the cost of implementing or paying for the options as they become due. For this trade-off reason, I expect to have a positive correlation between some lower level of option granting as incentives are aligned and compensation costs are not too high and a negative correlation at some higher level of option granting as the costs of the grants outweigh the alignment benefit. As an example of a high level of option granting, Barron's Online reports that Lehman Brothers issued 26 million options in 2002[30].

In summary, there have been numerous studies surrounding repurchase announcements and the effects on firm performance and stock price reactions. Although

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[30] Barron's Online reports that, "The Street's most lavish options issuer continues to be Lehman Brothers. In 2002, it issued 26 million options, fully 10% of its shares outstanding, up from 21 million in the prior year. Lehman's reported compensation last year was 51% of revenues, but if the effective value of the options is factored in, that cost rises to almost 60% -- a large wealth transfer from public shareholders to Lehman employees that isn't captured in the company's income statement. Lehman spent heavily on share repurchases last year to offset its lavish option grants, acquiring $1.5 billion of stock, more than its $1 billion of net income".

some studies have suggested a downside to repurchasing activity,[31] I am not aware of a study that attempts to disentangle the repurchase announcement to distinguish between the purposes of the repurchase announcement. My study will attempt to make this distinction by sub-sampling stock repurchase announcements as specified in the following sections.

Prediction, Data and Methodology

Hypotheses

Most research conducted on the repurchase announcement event finds that stock price returns are significantly positive on the event date and positive stock returns continue to persist for up to four years post the event date. These results are documented without questioning the motivation or the purpose of the repurchase. This research examines the purpose of the repurchase and I question whether a repurchase announcement is always viewed as "good news" and be met with significantly positive stock price reactions.

Indeed, there are possibly opportunistic reasons for firms to repurchase their own stock. Firms may repurchase their own stock to fund an acquisition, to counteract dilution effects and to cover options. In very basic terms, when a firm grants options it will ultimately either have to increase its number of shares, which will reduce earnings per share, or it can avoid this potential earnings dilution by both granting options and repurchasing its shares. On the one hand, if option granting really does mitigate agency

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[31] Kahle, 2002; Yermack, 1997; and Evans and Gentry, 1999.

problems between the owners and managers of the firm and if repurchasing shares also

has the desired effect to mitigate earnings dilution, then both activities could be positive

news. On the other hand, it can be questioned whether repurchasing to counteract dilution

is nothing more than an earning scheme by management. Thus, repurchasing to

counteract dilution may maintain a constant number of shares outstanding (denominator

in earning per share); however, earnings may be reduced (numerator) resulting in reduced

earnings per share. Thus, when employee stock options are granted the value of the

existing owners' stake in the firm is reduced.

For these reasons, I do not think that a repurchase announcement should always

be good news. Specifically, there are situations such as the funding of an acquisition, the

covering of employee options, and the counteracting of dilution issues, that should not

necessarily be met with as positive stock price reactions as those signaling undervaluation

or enhancing stockholder value.

Hypothesis 1
The abnormal return will be less-positive or non-positive for firms announcing
repurchases for opportunistic reasons such as non-value-enhancing acquisitions,
counteracting dilution effects, and covering options as compared to the
cumulative abnormal returns for all other repurchase motives.

I have hypothesized that the return for some repurchasing activities will be less

positive or perhaps non-positive. It is possible that this may not be immediately

recognized or even distinguishable in the short run. Although the manager of a firm may

be acting opportunistically, that does not necessarily preclude that his or her actions are

aligned with the interests of shareholders. In other words, if no difference in the stock

price reactions of different types of repurchase objectives are observed at the announcement date, it may be that these types of repurchases are still consistent with either the free cash flow hypothesis or the undervaluation hypothesis and distinguishing them may be an arduous task.

Many researchers have shown the persistence in positive abnormal returns following stock repurchase announcements. This is a puzzle in that if a repurchase signals undervaluation or is an appropriate use of free cash flow, then positive announcement day reactions may be expected, but the reactions should not persist three- to four-years post event.[32] Furthermore, if the repurchases are conducted for opportunistic objectives, we should not see positive long-term abnormal returns.

Hypothesis 2

The abnormal long-run returns will be less positive or non-positive for firms announcing repurchases for opportunistic reasons such as an acquisition, counteracting dilution effects, and the covering of options as compared to the cumulative abnormal returns for all other repurchase motives.

A lack of results or mixed results from hypotheses one and two could suggest that all repurchases on average are good news and positive stock price reactions should be anticipated. However, if that were the case firms should announce repurchases even more frequently than they do, for there is no cost associated with a false signal.[33] Another possibility is that opportunistic repurchases do exist but their existence is dependent upon

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[32] Ikenberry, Lakonishok, and Vermaelen, 1995.
[33] Jagannathan and Stephens, 2001, find that the market reactions to frequent vs. infrequent repurchase announcements are consistent with undervaluation. Infrequent repurchasers have lower market-to-book ratios suggesting that they are more likely to be undervalued, are preceded by negative abnormal returns, and are on average greeted with a stronger stock price return reaction than the frequent repurchasers. Thus,

managers' ownership levels and whether or not managers and shareholders have similar goals.

I suggest a positive relationship at low-option levels and a negative relationship at high-option levels. This is similar in spirit to the work by Rosenstein and Wyatt (1997) noted earlier. However, in their paper the costs are due to entrenchment, whereas in this paper I am suggesting a wealth transfer.

As a general clarification, compensation-based options are different from exchange-traded options. One value-enhancing feature to the compensation-based option is its longer maturity date (five years may be typical). Thus, the value of options outstanding can be substantial. The number of options outstanding at the end of year is disclosed on firms' proxy statements (since 1992); however, balance sheets do not include an allowance for this liability.

In summary, I plan to test my hypothesis using standard event study methodology using the constant mean return and the market model to measure abnormal returns with the announcement of the repurchase. I plan to control the test with free cash flow variables, ownership variables, executive option levels, growth variables, firm size and the frequency of the repurchases by a firm.

Sample

The sample of repurchases is collected from Securities Data Corporation's Mergers and Acquisitions database and Repurchases database. I begin by collecting all

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although the market generally views all repurchases favorably frequent repurchasers are greeted less

open-market, Dutch-auction, and fixed-price self-tender offers with original

announcement dates between January 1, 1988 and December 31, 2002. The Repurchases

database began data accumulation with 1994 repurchases. My sample of repurchase firms

dating from 1994 through 2002 was collected from this database. Prior to 1994,

repurchases were obtained from the Mergers and Acquisition database. I found a firm

choosing to repurchase its shares to be any firm which made an acquisition of its same

cusip number. Thus, any firm with the same cusip number for the acquirer and the target

firm is considered to have made a repurchase. The Securities Data Corporation database

includes all corporate transactions involving at least five percent of the ownership of a

company where the transaction was valued at $1 million or more (after 1992, deals of any

value are covered) or where the value of the transaction was undisclosed. Financial firms

(SIC codes 6000-6999) and regulated utilities (SIC codes 4910-4949) were removed

because they are believed to face a different incentive structure around repurchase

activity. Imposing these restrictions results in an initial sample of 3999 firm repurchase

announcements including 177 Dutch-auction, 373 fixed-price tender offers and 3,449

open-market repurchases. Table 2-1 shows descriptive statics for my sample repurchase

firms.

   Along with repurchase announcements and the type of repurchase conducted, I

have also obtained several more variables from the Securities Data Corporation's

Repurchase database which have been available since 1995.[34] These variables include a

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enthusiastically.

[34] I use the sample dating from 1988 to show the frequency of open-market repurchases, Dutch-auction and
fixed-price tender offers. However, all empirical analysis is conducted with repurchases initiated between

purchase code, SIC codes, and the total shares repurchased in number, dollar value or as a percent of the common shares outstanding. The purpose codes indicate a firm-reported description of the reason why the repurchase was conducted. The codes are to support an acquisition, to avoid dilution of earnings per share, to support an employee benefit plan, to enhance shareholder value, to support a stock option plan and to signal undervaluation. These codes will determine the motivation and the effect of the different repurchase announcements.

I sub-divided my repurchase sample into four levels of executive stock option value (zero value of exercisable options, low value (option value is less than 20 percent of the executive's salary and bonus) medium value (value of exercisable options is between 20 and 150 percent of the executive's salary and bonus); and a high option level (value of exercisable options is greater than 150 percent of the executive's salary and bonus)). Slightly over 60 percent of my sample of firms granted zero options and thus I placed those firms in one group. The low, medium, and high option levels were established by placing one-third of the remaining firms in each group. The stated percentile of options granted levels are simply the way the groups fell from this arrangement. The option data is obtained from the Standards and Poor's ExecuComp database. This database contains information on executive compensation and ownership for the S&P 1500 companies (S&P 500, S&P Midcap 400, and S&P Smallcap 600 indices), beginning in 1992. Using this database, I can calculate the total number of

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1995 and 2002. Thus, all statistical testing is conducted with the sample collected through Securities Data Corporation's Repurchase database.

options held by top executives, the number of exercisable and unexercisable options held

by top executives, and the shares owned by the same executives.

In addition to my hypothesis variables, I include several control variables. Table

2-2 shows both control and hypothesis variables and the expected sign of their estimated

coefficients. Table 2-3 explains the definitions of the variables used in table 2-2 along

with theoretical justifications for the predicted signs.

Methodology

The research design to test my hypotheses uses a market model using both

ordinary least squares and Scholes-Williams beta estimation and constant mean return

model to calculate abnormal returns. I use daily data and my periods of interest are the

pre-event window (-30, +2), the announcement window (-1, +1) and post-event periods

of (+2, +30), two-years and three-years after the announcement.[35]

Market model and constant mean return model

I use event-study methodology using the constant mean return model and the

market model estimated by both ordinary least square and the method of Scholes and

Williams (1977) to measure abnormal returns (see Thompson (1995))[36] The market

model abnormal returns are defined as $A_{jt} = R_{jt} - (\alpha_j + \beta_j R_{mt})$ where A_{jt} is the abnormal

return (or prediction error) for the common stock of the jth firm on day t, R_{jt} is the rate of

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[35] I conduct both a t-test and a z-test statistic to make inference about the significance of my results. Both of these test statistics are calculate with Eventus software (see appendix A)

return of the common stock of the jth firm on day t, α_j and is the ordinary least squares

estimate of α, β_j is a parameter that measures the sensitivity of R_{jt} to the market index

R_{mt}. The least squares estimation period ends 46 days before the event date and is 255

days in length. The equally-weighted and value-weighted market indexes are both used as

benchmarks in my study. The average abnormal return AAR_t is the sample mean. The

cumulative abnormal returns are calculated as $CAR_{T1T2} = (1/N) \Sigma\Sigma$ Ajt. In earlier drafts I

also calculated buy-and-hold abnormal returns by compounding successive daily

returns.[37] However, this produced problematic results with questionable biases and thus

those results have been omitted.[38] I will show cumulative average abnormal returns for a

pre-announcement period (-30, -2), event-day (-1, +1), and three post-event periods (+2,

+30), (+31, two-years), (+31, three-years).

I will also use the market model with the Scholes-Williams beta estimation. The

beta estimator is $\beta_j = (\beta_j \text{ bar} + \beta_j + \beta_j^+) / (1 + 2\rho_m)$ where β_j bar is the ordinary least

squares (OLS) estimate from the regression of R_{jt} on R_{mt-1}, β_j is the OLS estimate form

the regression of R_{jt} on R_{mt+1}, and ρ_m is the estimated first-order autocorrelation of R_m.

The market adjusted returns are simply the difference between the actual return

and the return of the market or $A_{jt} = R_{jt} - R_{mt}$. The definitions of the average and

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[36] Thompson presents an excellent discussion of empirical methods of event studies in chapter 29 of Handbooks in Operations Research and Management Science, Volume 9. The chapter cites numerous studies and provides details of the empirical methodology that I will follow.

[37] The buy-and-hold abnormal return is calculated with the BUYHOLD command in eventus. Eventus computes buy-and-hold abnormal returns by compounding successive daily raw returns and market index returns, then adjusts the raw returns according to the abnormal return method used. The calculation for the

$$BHAR_{jT1T2} = \left[\prod_{t=T1}^{T2} (1 + R_{jt}) - 1 \right] - \left[1 + \alpha_j^{(T2 - \hat{T}1 + 1)} - 1 \right] - \hat{\beta}_j \left[\prod_{t=T1}^{T2} (1 + R_{mt}) - 1 \right]$$

buy-and-hold abnormal return follows:

[38] See Canina, Michaely, Thaler, and Womack, 1998 for a complete discussion.

cumulative average abnormal returns follow those for the market model abnormal

returns. The abnormal returns are calculated with Eventus software.

Cross-sectional model

Theoretical models often suggest that there should be an association between the

magnitude of abnormal returns and characteristics to the event observation. To

investigate this, I will use a cross sectional regression of abnormal returns on

characteristics, where Y, the dependent variable, is the observed CAR and X, the

independent variables, are a matrix of characteristics. My X variables are shown in table

2 with their predicted signs. The general regression equation is that the announcement

day excess return $= \alpha + \beta_j$ (characteristics). The cross-sectional model will be carried out

through SAS. This requires separate regressions for each year. The general regression

equation:

$$CARit = \alpha_1 + \Sigma\gamma_K TK_i + \alpha_2 D_{2i} + \alpha_3 D_{3i} + \phi_L PL_i + \beta_2 X_{2i} + \mu_{it}$$

Where TK = time series dummies from 1988 through 2002
D_{2i} = 1 if Dutch-auction, 0 otherwise
D_{3i} = 1 if fixed-price, 0 otherwise
PL_i = purpose codes (ULV, DIL, ACQ, ESV, EBP, STP)
X = all other firm characteristics (table 2)
    Market-to-book asset ratios also serve as a proxy for investment opportunities

(see e.g. Opler and Titman (1993)). All else being equal, higher market values suggest

that the firm is not undervalued and, in fact, would make the repurchase of shares a more

expensive undertaking. Thus, a high market-to-book (often referred to as a glamour

stock) would suggest a negative correlation with repurchases. Alternatively, a low book-

to-market would predict a positive correlation with repurchases.

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Repurchases may also be the choice cash distribution for temporary cash flow availability and not a permanent cash flow increase that would be more appropriately signaled by a dividend increase.[39] Thus, if a firm chooses to repurchase rather than increase dividends, it may indicate only a temporary cash flow increase and not the more desirable permanent cash flow increase. Previous research has used debt/assets, book-to-market, net operating cash flow/assets and payout ratios (common dividends/net income) as controls. I will also include these controls.

High debt levels may make managers more reluctant to distribute current cash flows. As leverage increases, the probability of financial distress and hence external financing costs increases. Reducing debt is an alternative use of disgorging free cash flow;[40] thus firms that rely more on debt will be less likely to repurchase. I will control for this with the long-term debt to assets variable.

Firms with high levels of free cash flow are at a greater risk of overinvesting and hence derive greater benefits from repurchasing their own stock. Also, firms with relatively low marginal financing costs can distribute more cash to shareholders knowing that if they must raise external funds in the future they will be able to do so relatively inexpensively. I include size as a proxy for financing costs and information asymmetry. I also include year indicator variables to control for exogenous differences in repurchases that occur over the sample period. I also control for the frequency of the repurchase announcement.[41]

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[39] Jagannathan, Stephens, and Weisbach, 1998; Guay and Harford, 1999; and Gelb, 2000.

[40] Jensen, 1986, and Berger, Ofek, and Yermack, 1997.

[41] Jagannathan, Murali, and Clifford P. Stephens, 2003, Motives For Multiple Open-Market Repurchase Programs, *Financial Management* 32, 71-91. find frequent repurchasers to be much larger, have

Announcing a repurchase to signal firm undervaluation conveys good news to the market. If undervaluation is the message being conveyed, managers can clearly signal this with the premium offered. I have included this distinction by the type of repurchase offered.[42]

I expect all of the free cash flow control variables and the variables that suggest that the firm is undervalued to have positive estimated coefficients. If the underlying reason for the firm to make the repurchase decision is value-enhancing, it should be met with positive stock price reactions. This would be consistent with past research studies.[43] I include these variables to show both consistency with other research and as control variables to help distinguish between good news and no news or bad news repurchase announcements.

Firms also self-report that repurchases are being carried out to enhance shareholder value. This term is ambiguous. The firm could be either signaling undervaluation or conducting a repurchase as an effective use of free cash flows. If firms are credibly announcing a repurchase to enhance shareholder value, then the repurchase should be met with a positive stock price reaction.

Results

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significantly less variation in operating income and have higher dividend payout ratios than infrequent repurchasers that are initiated by smaller firms with potentially higher degrees of asymmetric information. This suggests that smaller firms are more likely to repurchase for the positive motivation of signaling undervaluation.

[42]Comment and Jarrell, 1991 document that the stronger the premium offered for shares, the stronger the signal of undervaluation and measure the undervaluation signal by the type of repurchase.

[43] Dann, 1981; Vermaelen, 1981; Asquith and Mullins, 1986; Ikenberry, Lakonishok, and Vermaelen, 1995; Stephens and Weisbach, 1998.

Table 2-4 presents the cumulative abnormal returns (CARs) for the opportunistic purposes of funding a stock option plan, for an acquisition and to counteract dilution. The CARs for the Pre-event window, at the announcement date and three post-announcement windows are shown using the ordinary least squares market model and the Scholes-Williams market model in comparison to the equal-weighted and value-weighted CRSP market indexes. Consistent with others' research, the pre-event abnormal returns are consistently significantly negative for all models and repurchase purposes. Past research has shown significantly positive announcement day returns. My research also shows consistent positive returns. However, Hypothesis 1 is supported in that the abnormal returns are less positive for the opportunistic repurchase plans. For example, with the market model the (-1, +1) window for the non-opportunistic repurchase plans has a CAR of 3.04 percent, whereas the stock-option repurchase plan, the plan to counteract dilution, and the plan to fund an acquisition have CARs of 2.22percent, 1.57 percent, and 1.82 percent, respectively.

Consistent with others, I generally find persistence in positive abnormal returns. Kahle (2002) found that firms that repurchased shares to fund employee stock options were not as positive as firms that did not repurchase to cover employee options. Contrary to her work, I found that the repurchases for funding an option plan performed well. Kahle compared firms that repurchased their shares with firms that increased their dividends during a four-year period. I choose to use a more robust sample of firms over an eight-year period that repurchased their shares for the purpose of funding an option plan, and compared my sample with both the CRSP equal-weighted and value-weighted

benchmark portfolios. I found the market model equal-weighted CARs were 23.41 percent and 32.60 percent for the two-year and three-year post event windows. These results were all significant and very similar to the non-opportunistic plans (21.00 percent and 31.77 percent for the two-year and three-year post returns). My hypotheses proposed that opportunistic repurchase plans should not perform as well as undervaluation or free cash flow motivated plans. Although originally classified as an opportunistic plan, employee stock option plans are not serving only the firms' executives' interest, but may be serving all the firms' employees. Later tables investigate the CEO's options and ownership separately in order to distinguish opportunistic repurchases in a clearer framework.

Loughran and Vijh find that stock acquirers earn 24.2 percent less than their matched firms, on average, using buy-and-hold returns over a five-year period; whereas cash acquirers earn 18.5 percent more than their matched firms. Rau and Vermaelen (1998) find that bidders in mergers underperform for up to three years after the merger is complete. Thus, I hypothesized that firms that used a repurchase plan to facilitate an acquisition should not perform as well as the non-opportunistic repurchase plans. Although the shorter post-event time windows were less positive (non-significant), it is interesting that the post two-year and three-year returns were significantly positive (CARs of 29.42 percent and 41.49 percent, respectively). Thus, in the long-term, using a repurchase plan to finance an acquisition can be beneficial to the bidder and appears to act more like a cash-financed acquisition. This will be explored further in the next chapter.

Finally, the repurchase plan to counteract dilution reacted as predicted. All post-event day CARs are small and not significantly different from zero. Furthermore, the two-year (-2.51 percent) and three-year (-0.62 percent) are negative. Thus, to counteract dilution does not carry with it the positive abnormal returns that other repurchase purposes carry.

In order to further differentiate the purpose of repurchase, I investigate the levels of free cash flows in my sample of firms and also the CEO ownership levels, and present the results in table 2-5A and 2-5B. These tables look at the difference in mean CARs for the pre-event window, at the announcement date and a short window of 30 days post announcement, and finally two-years and three-years post announcement. Table 2-5A presents a 3X5 matrix of free cash flows (high, medium and low) and ownership levels (0 percent, less than 1 percent, 1 percent to 5 percent, 5 percent to 25 percent, and greater than 25 percent). The event-day CARs are interestingly negative for the high free cash flow and CEO stock ownership of greater than 25 percent (-4.82 percent), the medium level of free cash flow and greater than 25 percent ownership (-0.48 percent), and high free cash flows and ownership level between five percent and 25 percent (-0.45 percent).

The p-values of .006 and .000 for the two-year and three-year indicate that these groups are significantly different from each other. At two-year post announcement the high free cash flow and five percent to 25 percent ownership group has a CAR of -47.5 percent while there are strong positive CARs for low free cash flows and five percent to 25 percent ownership (+86.6 percent) and low cash flows and zero ownership (+68.8 percent). At three-year post event the high free cash flow and five percent to 25 percent

ownership group has a CAR of -44.2 percent and the high free cash flows and one

percent to five percent group has a CAR of -5.23 percent, while there are strong positive

CARs for low free cash flows and five percent to 25 ownership (+157.8 percent) and low

free cash flows and zero ownership (81.5 percent).

Table 2-5B presents a 3X3 matrix of free cash flows (high, medium and low) and

ownership levels (high, medium and low). This table shows significant CARs at two-year

and three-year post announcement. The only negative CARs shown are for the high free

cash flow and low ownership group (-4.1 percent and -2.2 percent for post two-years and

three-years respectively). Arguably this group has the most likely agency problems. The

highest positive or best performing group is the low free cash flow and high ownership

group (45.3 percent and 66.3 percent). This high ownership group presumably has little

agency problems and thus is conducting the repurchase with both owners' and managers'

objectives. Since cash flows are low, this group is likely to have a strong motivation to

make the cash draining decision to repurchase its shares. It is likely that this group is

making a very credible announcement that its current market price is low.

I noted earlier the somewhat surprising result where repurchasing to fund an

option plan has very similar results to all the non-opportunistic repurchases plans. Tables

2-6 and 2-7 explore CEO options further to distinguish between funding for an employee

option plan, which may not be opportunistic and the level of CEO options, which may

lend itself to opportunistic motivations.

In table 2-6 the repurchase sample is grouped by the value of the exercisable stock

options held by the CEO divided by the CEO's salary and bonus. Four groups were

determined: no options held, low option value (value of exercisable options is less than 20 percent of the CEO's salary and bonus), medium option value (value is between 20 percent and 150 percent) and high option value (greater than 150 percent). The results in table 2-6 are not significant; however, it should be noted that the highest CARs in the long term are shown for the medium option levels. It may be that there exist an optimum level of option grants; high enough to motivate the manager to act in the owners' interest and low enough to keep the cost of the option less than the motivational benefit.

Table 2-7 presents a 5X4 matrix of CEO ownership levels (zero, less than one percent, one to five percent, five to 25 percent and greater than 25 percent) and option levels (no, low, medium and high). Panel A of this table shows significant CARs mean differences at two-year and three-year post announcement. The groups with negative CARs at two-year post repurchase announcement are: five-to 25 percent ownership and medium options (-54.8 percent); five-to-25 percent ownership and low options (-51.5 percent); one-to-five percent ownership and zero options; (-9.9 percent), and zero ownership and no options (-0.1 percent). Due to some small sample size groups, the one to five percent ownership and zero options (n=122) is the only group with negative abnormal returns from which we can state that its negative returns are significant. The one-to-five percent ownership and zero options group also shows the same lackluster returns for the three-year post period of –10.8 percent. It is interesting to point out that the motivation to repurchase stock for any groups receiving no options cannot be to cover options. Thus the poor performance of the one-to-five percent group with no options is not a reflection of repurchasing due to the necessity of covering option commitments.

Focusing on just the two-year and three-year significant periods and only groups with greater than 20 observations, it is interesting to note that the best two-year return performance is the zero ownership and no option group. This group also has the distinction of being the second best performers at the three-year post announcement. This is consistent with option granting and CEO ownership not influencing performance or possibly the cost of the options does not outweigh the benefit of improved CEO performance. In other words it may be that option granting may increase the effort of the CEO, but not enough to affect the bottom line. This is an area that requires future study. The worst return performance group's CEOs own one to five percent of the corporation's stock and receive no options.

Consistent with agency theory, the best group performance three-years post announcement is the one-to-five ownership group receiving a medium level of options. I expect this group's interests would be well aligned with those of the shareholders because the managers have a moderate level of ownership, but not too much to be guilty of entrenchment and also receive a moderate level of options that should motivate the managers without the options costing so much too outweigh the benefit.

Strong positive abnormal returns (two-year 52.4 percent and three-year 65.1 percent) are found for the 1 percent to 5 percent CEO ownership and middle option group (n=34) and (two-year 39.3 percent and three-year 56.4 percent) for the zero ownership and no option (n=81).

In order to address the problem of some of the small sample-sized groups, panel B of table 2-7 shows just seven groups formed by combining the medium and low option

groups, including the zero ownership groups with the less than one percent ownership

groups, and blending the one to five percent ownership and five-to-25 percent ownership

into a one-to-25 percent ownership group. The best performances are seen by the greater

than 25 percent ownership group with two-year and three-year abnormal returns of 47.3

percent and 41.2 percent respectively and the one-to-25 percent ownership and the

medium and low option group with two-year and three-year abnormal returns of 44.4

percent and 28.7 percent respectively. This group would be the optimal alignment of

managers and stockholders interests group. Unexpected performance is observed by the

one to 25 percent ownership with no option group with two-year and three-year abnormal

returns of –0.4 percent and 9.7 percent, respectively. Thus, it appears that not only does

the existing ownership level matter, but it is also necessary to provide future incentives in

the form of moderate option grants.

       Much of the recent literature has focused attention on open-market conducted

repurchases due to the growth in numbers and the increase in the value of the

repurchases. Researchers have suggested that the repurchases are substitutes for

dividends or are the direct result of compensation-based option grants and the needs of

the firms to cover their options and avoid dilution effects. There is a general consensus

that the increase in open-market repurchases is due at least in part to the growth in option

grants.[44] Thus, it is likely that the incentives for open-market repurchases have changed

over time. However, what has happened to Dutch-auction and fixed-price tender offers

over time? During the 1990s the frequency of initiation has not increased as open-market

repurchases have proliferated. Do firms still elect to use these methods to signal

undervaluation (see Comment and Jarrell (1991)) or as a takeover deterrent (see Persons

(1994)?

Table 2-8 displays the cumulative abnormal returns for the market model and

Scholes-Williams model for the different types of repurchases, Dutch-auction, fixed-price

tender offers and open-market repurchases. Data is shown yearly from 1995-2002.

Using the results from the value-weighted market model returns, open-market

repurchasers perform the worst prior to the announcement with a CAR mean over time of

–7.17 percent and fixed-price offers performed well with a mean over time of 4.32

percent. The at-announcement date abnormal returns for open-market repurchases range

from a mean of 2.24 percent (1997) to 3.91 percent (2000), the smallest sample year.

Both fixed price and Dutch-auction carry the higher event-day returns (fixed price ranges

from 2.93 percent (1996) to 19.67 percent (1995) and Dutch auction from 4.55 percent

(1995) to 13.23 percent (2002)) and at first glance there is no trend over time.

A review of the long-term abnormal returns for Dutch auction repurchases shows

erratic returns ranging from –25.52 percent (2001) to 86.9 percent (2000) for the two-

year post returns and ranging from-21.98 percent (1996) to 118.89 percent (2000) for

three-years. The fixed price tender offers also show a wide range of returns over the

years. The erratic returns over years for the Dutch-auction and fixed price tender offers is

most likely influenced by small sample sizes ranging from as low as 6 events in a year to

only a high of 24 repurchase announcements.

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[44] Jolls, 1998; Dittmar, 2000; Liang and Sharpe, 2000; Jagannathan and Stephens, 2001; Klassen and

Table 2-9 is a multi-model table addressing several hypotheses. The five panels A-E display the coefficients for pre-announcement, at the announcement and post-announcement time periods (30 day, two-year and three-year). Six fixed-effects models are displayed in panel A. Although my hypotheses did not address the cumulative abnormal returns prior to the repurchase announcement, this panel shows some interesting results. The share percent variable (aggregate shares held by the CEO divided by the number of common shares outstanding) is significantly negative. This implies that the greater the percent of shares owned by the CEO the more negative the returns prior to making a repurchase announcement. The three-year least squares annual growth rate of net income variable is also significantly negative implying the higher the net income growth the more negative the cumulative abnormal returns prior to the repurchase initiation. Not surprisingly, firms that announce a repurchase due to undervaluation also have significantly negative CARs before the announcement, whereas firms that plan to fund a stock option plan perform well.

My hypotheses questions opportunistic repurchases at the announcement date. Panel B displays 8 models addressing the event date announcement CARs. A look at the significant estimates reveals the stock value (aggregate value of stock options held by the CEO as a percentage of salary and bonus) is positive. This implies a direct relationship to the CEO's option value and the stock's return reaction at the repurchase event.

As predicted, firms that announce a repurchase to counteract dilution effect do poorly (significantly negative in models six and eight). Also, predicted the non-

Sivakumar, 2001; Bens, Nagar, Skinner and Wong, 2002; and Kahle, 2002.

opportunistic purpose of enhancing shareholder value is positive (significant in models one and two). I had also predicted, non-positive returns for both repurchases for acquisitions and for stock option plans. Although negative estimators appear in several models, none are significant.

The strongest estimator is with firms announcing a Dutch-auction repurchase. Although the positive returns with a Dutch-auction is consistent with others' research, it is not consistent to find the returns stronger than the fixed-price tender offers (negative, not significant) which carries a higher premium by virtue of its makeup.

Panel C displays the short-term stock price reactions from two days to 30 days post announcement. For this period both control measures of price to book were significantly negative. As with the event time period, stock value is slightly positive. In the short-term none of the repurchase purposes show any significance. The frequency control is negative in one model and positive (not significant) in another. Dutch-auction and fixed-price repurchases show expected strong positive estimators; however, similar to the event day results the Dutch-auction firms have stronger positive returns than the fixed-price offers.

Panels D and E show two-years and three-years post announcement, respectively. During these time periods, Dutch-auction and fixed-price repurchases no longer show any superiority in returns over open-market repurchase plans. Generally for both long-term periods net income to assets is slightly negative, share percent is slightly positive and both income growth and earnings per share growth negative.

Overwhelming the purpose to counteract dilution is significantly negative in all models as predicted by the hypotheses. However, the hypothesis also predicted negative return reactions for firms funding stock option plans. This did not bear out and in fact by three-years post announcement funding the stock option plan was significantly positive. I had also predicted that the purpose of funding an acquisition would have the negative results found with most acquisition research. This estimator although generally negative was only significant in one model.

Two surprisingly results of slightly negative returns at three-years post repurchase announcement for the purpose of enhancing shareholder value and for the purpose of undervaluation. It appears that the manager's purpose of repurchase did not occur.

In summary, the purpose to counteract dilution is strongly negative in all models. This supports the argument that opportunistic repurchases do not perform as well as other repurchases. Contrary to the hypothesis, I again find that stock option plans have significantly positive long-term cumulative abnormal returns. The acquisition motivated repurchase is negative, as expected, but not significant. In the long-term, whether the repurchase was completed with a Dutch auction or fixed price tender offer was not significant.

Conclusion

The purpose of the repurchase announcement matters. At the announcement date manager's intention of avoiding dilution is significantly negative and enhancing shareholder value is significantly positive. However, more interesting results are observed at two-years and three-years post announcement. Counteracting dilution is not a

good reason to conduct a repurchase and although not as strongly negative, enhancing shareholder value does not bear out its announcement promise. Consistent with a rich history of acquisition work, conducting an acquisition in conjunction with a repurchase seems to carry the negative attributes of the acquisition-driven motivation. This will be explored further in the next chapter.

The strongest positive reason to conduct a repurchase is to initiate or fund an employee stock option plan. Both employee benefit plans and stock option plans carry positive abnormal returns well into future time periods. This is contrary to the results found by Kahle (2002). Although it was expected that stock options would fall under opportunistic CEO behavior, very different results were found. A probable explanation is that stock options not only benefit the CEO but also employees and outside shareholders. Furthermore, when the ownership structure of the sample of repurchase firms was investigated, a few unexpected results surfaced. For example, the largest positive abnormal returns were found for a subsample of firms in which the CEOs had no stock ownership and no option grants. It is not known whether these CEOs have an alternative form of incentive based pay or if the cost of the options simply outweighs the benefit of improved CEO performance.

Table 2- 1	Types of Repurchase Announcements		
	Number of Repurchase Announcements		
	Dutch-auction	Fixed-price	Open Market
1988	17	36	136
1989	16	56	279
1990	6	51	396
1991	3	52	115
1992	8	36	114
1993	5	37	260
1994	7	38	408
1995	9	8	493
1996	17	11	691
1997	21	14	664
1998	24	6	647
1999	18	14	415
2000	17	13	320
2001	9	9	177
2002	11	16	399
Total	188	397	5515

Table 2- 2   Hypothesized Relationships

Hypothesized relationships between repurchase event return and firm characteristics

Hypothesis	Variable	Predicted Sign
Hypothesis variables		
Offset dilution	Fully diluted eps/basis eps	-
	Dummy variable for firms reporting as purpose	-
Acquisition	Dummy variable for firms reporting as purpose	-
Managerial	CEO Equity Ownership	-
Ownership	Share Ownership Value	-
	Share Ownership Value + Stock Option Value	-
Control variables		
Free cash	Operating income before depreciation/assets	+
	Net income before taxes and minority interest/assets	+
	Net income before extraordinary items and discontinued operations/assets	+
	Net income before extraordinary items and discontinued operations less preferred dividends/assets	+
Under-valuation	Book-to-market	+
	Dummy variable for frequent repurchasers	-
	Dummy variable for firms reporting as purpose	+
Signaling	Type of Repurchase	Fixed +++
		Dutch ++
		Open +
Enhance Sh. Value	Dummy variable for firms reporting as purpose	+
Risk	Beta	+
	Leverage: Long-term debt/assets	+
	Long-term debt/market value	+
	Debt/Assets	+
Other Controls	Size	-
	Year	?
	Dummy variable for frequent repurchases	-

Table 2- 3   Variable Definitions

Acquisition dummy variable = dumACQ = SDC repurchase purchase code ACQ.

Beta = CRSP beta

Black Scholes option value = BlkVal = The aggregate value of stock options granted to the executive during the year as valued using S&P's Black Scholes methodology (ExecuComp BLK_VALU).

DA = Repurchase announcement was a Dutch-auction offer.

Debt/Assets = Total debt (Compustat DLTT + LCT) / assets (Compustat TA)

Dilution dummy variable = dumDIL = SDC repurchase purchase code DIL.

Employee Benefit Plan dummy variable = dumEBP = SDC repurchase purchase code EBP.

Enhance shareholder value dummy variable = dumESV = SDC repurchase purchase code ESV.

EpsDil-1 = the diluted eps/basis eps for the year prior to the repurchase announcement. EpsDil_0 = = the diluted eps/basis eps for the year of the repurchase announcement= Fully diluted eps/basis eps   =Fully diluted reported since December 15, 1997 (APB opinion No. 15 and Financial Accounting Standards No. 128) Basic EPS is earning available to common shareholders divided by the weighted average of shares outstanding. Diluted EPS increase the number of shares in the denominator to reflect the dilutive effects of convertible securities and stock options and adds back to earnings the interest payments that would not have to be made by the firm upon the conversion of bonds/preferred stock to common stock.

EPS growth = EPSgrow = the three-year least squares annual growth rate of Net Income before extraordinary items and discontinued operations less preferred dividend requirements (ExecuComp EPSEX3LS).

Exercisable unexercised options = The number of unexercised options that the executive held at the end of the year that were vested options (ExecuComp UEXNUMEX).

Table 2- 3   Variable Definitions (Continued)

Exercised options = Soptexsh = the number of options exercised by the executive during the year (ExecuComp SOPTEXSH).

Exercised options value = Soptexer = the net value realized from exercising options. It is the difference in value between the exercise price of the options and the market price of the company's stock on the date of exercise (ExecuComp SOPTEXER/1000).

Exercised to total available options = Exercised options (SOPTEXSH) / Exercised options + exercisable unexercised (SOPTEXSH + UEXNUMEX) This gives the percentage of options exercised that were exercisable (vested).

FP = Repurchase announcement was a Fixed-price tender offer.

Frequent Repurchaser = Freq = Firm made more than one repurchase announcement during the year.

Less Frequent Repurchases = Somefreq = Firm made more than one repurchase during the three-year period, but not more than one during the year.

Long-term debt/assets = long-term debt (Compustat DLT) / assets (Compustat TA)

Long-term debt/market value = long-term debt (Compustat DLT) / market value (Compustat MKVALF)

Market value = MktVal = market value (Compustat MKVALF/1000).

Net income before extraordinary items and discontinued operations/assets = ExecuComp NIBEX/Assets

Net income before extraordinary items and discontinued operations less preferred dividends/assets = NI/assets = ExecuComp NIAC/Assets.

Net income before taxes and minority interest/assets = ExecuComp PRETAX/Assets

NI growth = net income growth = The 3-year least squares annual growth rate of Net Income (ExecuComp NI3LS)

Operating income before depreciation/assets = ExecuComp OIBD/Assets

Operating Income growth = IncGrow = The three-year least squares annual growth of Operating Income before depreciation (ExecuComp OIBD3LS).

Table 2- 3	Variable Definitions (Continued)

Option grant value = Soptval = the aggregate value of all options granted to the CEO during the year as valued by the company (ExecuComp SOPTVAL).

Payout ratio = Total common dividends (item 21) / Net income

Percent Sought = Total share repurchased (SDC total shares repurchased) / Total shares outstanding (SDC Number of securities outstanding)

Purpose Code: The code describing the purpose of the repurchase program. Examples are: to enhance shareholder value (ESV) to offset dilution (DIL) to support a stock option program (STP), to indicate undervaluation (ULV), to fund and acquisition (ACQ), for an employee benefit plan (EBP), and for general business (GEN).

Price to book = The market value of assets divided by the book value of assets, where the market value of assets is the book value of assets plus the market value of equity (Compustat item #24 times Compustat item #25) minus the book value of equity. PrcBk-1 = Price to book for the year ending prior to the repurchase announcement. PrcBk_0 = Price to book for the year of the repurchase announcement.

Share % = CEO equity = The aggregate shares held by the CEO divided by the number of common shares outstanding (ExecuComp SHROWN/SHRSOUT)

Share Ownership Value = Market value of the common shares held by executive divided by the executive's salary and bonus (ExecuComp PRCC*SHROWN/TCC)

Share Ownership Value + Stock Option Value = Market value of the common shares held by executive plus the aggregate value of stock options granted to the executive during the year as valued using S&P's Black Scholes methodology divided by the executive's salary and bonus (ExecuComp (PRCC*SHROWN + BLK_VALU)/TCC)

Stock Option Plan dummy variable = dumSTP = SDC repurchase purchase code STP.

Stock Option Value = StkVal = The aggregate value of stock options granted to the executive during the year as valued using S&P's Black Scholes methodology divided by the executive's salary and bonus (ExecuComp (BLK_VALU)/TCC).

Type of Repurchase = SDC Technique code. OP = open market, DA = Dutch=auction, and FPOL = fixed-price tender-offer

Undervaluation dummy variable = dumUVL = SDC repurchase purchase code UVL.

Table 2- 4   Returns to Repurchase Purpose

Cumulative Abnormal Market model returns (CARs) for both equal and value weighted portfolios of all firms Announcing Repurchase Plans to Fund a Stock Option Plan (n=482, beta = 1.06)

Window	Market Model		Scholes-Williams Market Model	
	Equal Wt	Value Wt	Equal Wt	Value Wt
-30, -2	-3.82% ***	-4.87% ***	-4.14% ***	-5.04% ***
-1,+1	2.22% ***	2.02% ***	2.15% ***	1.97% ***
+2,+30	1.98% **	1.67% *	1.93% **	1.62% *
+31,+504	23.41% ***	24.20% ***	21.46% ***	23.14% ***
+31,+756	32.60% ***	33.88% ***	29.96% ***	33.03% ***

* significant at .10, ** significant at .05, *** significant at .01

Cumulative Abnormal Market model returns (CARs) for both equal and value weighted portfolios of all firms Announcing Repurchase Plans to Fund an Acquisition (n=96, beta = 0.75)

Window	Market Model		Scholes-Williams Market Model	
	Equal Wt	Value Wt	Equal Wt	Value Wt
-30, -2	-2.84%	-2.67%	-1.14%	-3.64%
-1,+1	1.57% **	1.68% ***	1.67% **	1.56% **
+2,+30	0.91%	1.97%	1.05%	1.27%
+31,+504	29.42% ***	30.47% ***	49.41% ***	17.94% ***
+31,+756	41.49% ***	45.92% ***	72.15% ***	26.75% ***

* significant at .10, ** significant at .05, *** significant at .01

Table 2- 4   Returns to Repurchase Purpose (continued)
Cumulative Abnormal Market model returns (CARs) for both equal and value weighted portfolios of all firms Announcing Repurchase Plans to Counteract Dilution (n=126, beta = 1.27)

Window	Market Model		Scholes-Williams Market Model	
	Equal Wt	Value Wt	Equal Wt	Value Wt
-30, -2	-3.72% **	-4.33% **	-3.74% **	-4.27% **
-1,+1	1.82% **	1.75% **	1.75% **	1.67% **
+2,+30	2.03%	1.68%	1.61%	1.20%
+31,+504	-2.51% *	3.07%	-2.28% *	2.54%
+31,+756	-0.62% *	6.16%	-0.60% *	6.63%

* significant at .10, ** significant at .05, *** significant at .01

Cumulative Abnormal Market model returns (CARs) for both equal and value weighted portfolios of all firms Announcing Repurchase Plans for purposes other than to fund a stock option plan, to fund an acquisition or to counteract dilution (n=3814, beta = 0.94)

Window	Market Model		Scholes-Williams Market Model	
	Equal Wt	Value Wt	Equal Wt	Value Wt
-30, -2	-5.36% ***	-6.44% ***	-5.42% ***	-6.53% ***
-1,+1	3.04% ***	2.94% ***	3.05% ***	2.92% ***
+2,+30	1.75% ***	1.83% ***	1.86% ***	1.57% ***
+31,+504	21.00% ***	22.40% ***	21.53% ***	19.63% ***
+31,+756	31.77% ***	34.84% ***	32.56% ***	31.23% ***

* significant at .10, ** significant at .05, *** significant at .01

Table 2-5 Free Cash Flow and Executive Ownership

A. The share ownership percentage is the number of shares held by the top executive (excluding stock options) divided by the number of common shares outstanding (ExecuComp variables SHROWN/SRSOUT). I have determined five levels of executive ownership; ZeroOwn (executive owns zero shares), Less1Own (less than one percent), 1_5Own (between one and five percent), 5_25Own (between five and 25 percent), Great25Own (greater than 25 percent).

Free cash flows are proxied with three calculations; operating income before depreciation divided by assets, net income before tax divided by assets, and net income available divided by assets. I placed the highest 30 percent of the free cash flow calculations in the high cash flow group, HCF; the next 40 percent of the free cash flow calculations in the medium group, MCF; and the lowest 30 percent of the free cash flows in the low free cash flow group, LCF. In some cases the three free cash flow proxies yielded a different classification. In such cases, the average classification was used. For example if one proxy calculation classified as high, another as medium and the final as low, the firm would be classified as MCF.

Finally, 15 groups were form by taking members of each ownership group (5) and combining it with members of each free cash flow group (3). ANOVA follows for the group differences of the abnormal returns for five event time periods. Groups are sorted from lowest to highest average abnormal return.

Group	n	(-30, -2)	(-1, +1)	(+2, +30)	(+31, +504)	(+31, +756)
HCF 1_5Own	63	-0.084	0.021	0.009	0.003	-0.052
HCF 5_25OWN	13	-0.087	-0.005	0.100	-0.475	-0.442
HCF Great25Own	6	-0.063	-0.048	0.008	0.106	0.336
HCF Less1Own	207	-0.085	0.008	0.018	0.015	0.069
HCF ZeroOwn	22	-0.068	0.023	0.021	0.568	0.645
LCF 1_5Own	32	-0.132	0.000	0.012	0.271	0.357
LCF 5_25OWN	14	-0.031	0.041	0.074	0.864	1.578
LCF Great25Own	5	-0.116	0.106	-0.003	0.477	0.356
LCF Less1Own	150	-0.048	0.017	0.035	0.206	0.453
LCF ZeroOwn	13	-0.087	0.038	0.031	0.688	0.815
MCF 1_5Own	70	-0.087	0.021	-0.001	0.082	0.112
MCF 5_25OWN	37	-0.049	-0.005	0.007	0.055	0.174
MCF Great25Own	12	-0.094	0.031	0.015	0.550	0.613
MCF Less1Own	306	-0.044	0.016	0.013	0.016	0.031
MCF ZeroOwn	31	-0.032	0.003	-0.020	0.046	0.138
P-value		0.453	0.086	0.783	0.006	0.000

Table 2-5   Free Cash Flow and Executive Ownership (Continued)

B   Ownership is proxied with three calculations; executive shares owned divided by

common shares outstanding, the market value of the common shares held by executive divided by the executive's salary and bonus, and the share ownership value plus the Black Scholes option value divided by the executives salary and bonus. The highest 30 percent of the executive ownership level were placed in the high ownership, HOwn; the next 40 percent in the medium group, MOwn; and the lowest 30 percent in the low ownership group, LOwn. In cases where the three ownership proxies yielded a different classification, the average classification was used.

Free cash flows are proxied by three calculations; operating income before depreciation divided by assets, net income before tax divided by assets, and net income available divided by assets. The highest 30 percent of the free cash flow calculations were placed in the high cash flow group, HCF; the next 40 percent in the medium group, MCF; and the lowest 30 percent in the low free cash flow group, LCF. In some cases the three free cash flow proxies yielded a different classification. In such cases, the average was used. Finally, nine groups were form by taking members of each ownership group (3) and combining it with members of each free cash flow group (3). ANOVA follows for the group differences of the abnormal returns for five event time periods noted.

Panel A Groups	n	(-30, -2)	(-1, +1)	(+2, +30)	(+31, +504)	(+31, +756)
HCF Hown	88	-0.077	0.006	0.020	0.108	0.218
HCF Lown	89	-0.081	0.013	-0.001	-0.041	-0.022
HCF Mown	134	-0.089	0.011	0.033	0.038	0.035
LCF Hown	53	-0.084	0.010	0.029	0.453	0.663
LCF Lown	80	-0.054	0.027	0.040	0.183	0.477
LCF Mown	81	-0.059	0.018	0.028	0.292	0.482
MCF Hown	138	-0.066	0.014	0.021	0.080	0.138
MCF Lown	112	-0.053	0.002	0.014	0.018	0.043
MCF Mown	206	-0.041	0.022	-0.005	0.038	0.056
P-value	980	0.539	0.385	0.417	0.087	0.037

Panel B Groups					(+31, +504)	(+31, +756)
HCF Lown	88				-0.041	-0.022
LCF Mown	81				0.292	0.482
P-value					0.037	0.016

Panel C Groups					(+31, +504)	(+31, +756)
HCF Lown	88				-0.041	-0.022
LCF Hown	53				0.453	0.663
P-value					0.013	0.007

Table 2-6   Executive Options

Executive option value is determined by the value of the exercisable stock option divided by the total salary and bonus (ExecuComp variables SOPTEXER/TCC). I have determined four option value levels They are no or zero value of exercisable options, NoOpt; low value of exercisable options, LOpt (value of exercisable options is less than 20 percent of the executive's salary and bonus); medium value of exercisable options, MOpt (value of exercisable options is between 20 and 150 percent of the executive's salary and bonus); and a high option level, HOpt (value of exercisable options is greater than 150 percent of the executive's salary and bonus).

ANOVA follows for the group differences of the abnormal returns for five event time periods: 30 days to two days prior to the repurchase announcement (-30, -2), the event period (-1, +1), 30 days post-announcement (+2, +30), two-years post-announcement (+31, +504), and three-years post-announcement.

Panel A Groups	n	(-30, -2)	(-1, +1)	(+2, +30)	(+31, +504)	(+31, +756)
Hopt	159	-0.070	0.024	0.008	0.132	0.215
Lopt	79	-0.070	0.018	0.026	0.164	0.249
Mopt	156	-0.044	0.006	0.035	0.183	0.308
NOopt	583	-0.068	0.014	0.013	0.054	0.116
P-value	976	0.579	0.191	0.409	0.436	0.358

Panel B Groups	n	(-30, -2)	(-1, +1)	(+2, +30)	(+31, +504)	(+31, +756)
Hopt	159	-0.070	0.024	0.008	0.132	0.215
Lopt	79	-0.070	0.018	0.026	0.164	0.249
Mopt	156	-0.044	0.006	0.035	0.183	0.308
P-value	393	0.491	0.063	0.388	0.896	0.804

Panel C Groups	n	(-30, -2)	(-1, +1)	(+2, +30)	(+31, +504)	(+31, +756)
Hopt	159	-0.070	0.024	0.008	0.132	0.215
Lopt&Mopt	235	-0.053	0.010	0.032	0.177	0.288
P-value	393	0.424	0.046	0.187	0.656	0.571

Table 2- 7 Executive Ownership and Options

The share ownership percentage is the number of shares held by the top executive (excluding stock options) divided by the number of common shares outstanding. Five levels of executive ownership are ZeroOwn (executive owns zero shares), Less1Own (less than one percent), 1_5Own (between one and five percent), 5_25Own (between five and 25 percent), Great25Own (greater than 25 percent).
Executive option value is determined by the value of the exercisable stock option divided by the total salary and bonus. Four option value levels are no or zero value of exercisable options, NoOpt; low value of exercisable options, LOpt (value of exercisable options is less than 20 percent); medium value of exercisable options, MOpt (value of exercisable options is between 20 and 150 percent); and a high option level, HOpt (value of exercisable options is greater than 150 percent of the executive's salary and bonus). Finally, 18 groups were form by taking members of each ownership group (5) and combining it with members of each option level group (4) (Two groups have no members.). ANOVA follows for the group differences of the abnormal returns for five event time periods: 30 days to two days prior to the repurchase announcement (-30, -2), the event period (-1, +1), 30 days post-announcement (+2, +30), two-years post-announcement (+31, +504), and three-years post-announcement.

Panel A Groups	n	(-30, -2)	(-1, +1)	(+2, +30)	(+31, +504)	(+31, +756)
1_5Own HOpt	52	-0.084	0.013	0.046	0.167	0.294
1_5Own LOpt	15	-0.124	0.052	-0.044	0.462	0.694
1_5Own MOpt	34	-0.056	0.024	0.041	0.524	0.651
1_5Own NOpt	122	-0.081	0.013	0.002	-0.099	-0.108
5_25Own HOpt	10	0.008	0.010	0.012	0.363	0.653
5_25Own LOpt	2	-0.065	-0.171	-0.083	-0.515	-0.583
5_25Own MOpt	11	-0.061	-0.014	0.014	-0.548	-0.450
5_25Own NOpt	60	-0.061	0.015	0.037	0.192	0.521
Great25Own HOpt	2	-0.886	-0.004	0.179	1.509	1.586
Great25Own LOpt	1	-0.112	0.066	0.059	1.148	0.863
Great25Own NOpt	21	-0.074	0.029	-0.027	0.332	0.420
Less 1Own HOpt	145	-0.062	0.021	0.006	0.101	0.218
Less 1Own LOpt	93	-0.051	0.021	0.026	0.244	0.325
Less 1Own MOpt	166	-0.034	0.008	0.016	0.139	0.299
Less 1Own NOpt	513	-0.063	0.009	0.016	0.065	0.138
ZeroOwn HOpt	4	-0.059	0.048	0.020	-0.001	0.138
ZeroOwn MOpt	4	-0.133	-0.008	0.132	0.867	0.938
ZeroOwn NOpt	81	-0.053	0.013	-0.013	0.393	0.564
P-value	1335	0.000	0.156	0.559	0.003	0.006

Table 2-7	Executive Ownership and Option (Continued)					
Panel B Groups	n	(-30, -2)	(-1, +1)	(+2, +30)	(+31, +504)	(+31, +756)
1_25Own/Hopt	62	-0.069	0.012	0.040	0.198	0.352
1_25Own/MLopt	62	-0.074	0.018	0.012	0.287	0.441
1_25Own/Nopt	182	-0.074	0.013	0.013	-0.004	0.097
Great25	28	-0.115	0.023	0.005	0.412	0.473
Less1/Hopt	150	-0.062	0.022	0.006	0.098	0.216
Less1/MLopt	263	-0.042	0.012	0.021	0.187	0.318
Less1/Nopt	594	-0.061	0.009	0.012	0.110	0.197
P-value	1340	0.444	0.717	0.857	0.197	0.339

Table 2- 8   Type of Repurchase Abnormal Returns Pre-Event CAR

Dutch-Auction			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	9	0.96	-0.45%		1.24%		-1.14%		0.47%	
1996	17	0.61	1.15%		-1.10%		0.77%		-0.94%	
1997	21	1.01	-4.38%		-1.69%		-5.81%		-2.73%	
1998	24	0.85	-5.07%		-5.89%		-4.67%		-5.76%	
1999	18	0.78	0.43%		1.16%		0.68%		1.15%	
2000	17	0.58	-2.12%		-0.40%		-0.98%		0.00%	
2001	9	1.05	-7.67%		1.35%		-9.39%	*	0.38%	
2002	11	0.56	-1.66%		-2.87%		-1.35%		-2.43%	
1995-2002	126	0.84	-2.49%	*	-1.51%	*	-2.66%	*	-1.67%	*

Fixed Price			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	8	0.96	4.39%		6.00%		6.10%		5.83%	
1996	11	0.61	0.42%		1.67%		0.80%		1.69%	
1997	14	1.01	-2.86%		-2.23%		-2.74%		-2.11%	
1998	6	0.85	6.57%		-0.57%		4.34%		-1.21%	
1999	14	0.78	2.02%		3.77%		1.33%		3.18%	
2000	13	0.58	11.82%		9.36%		12.88%	*	10.47%	
2001	9	1.05	20.43%	**	21.19%	**	19.83%	**	20.96%	**
2002	16	0.56	0.91%		-0.26%		0.70%		0.16%	
1995-2002	91	0.84	4.61%		4.32%		4.63%		4.40%	

Open Market			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	493	0.96	-2.52%	***	-2.75%	***	-2.60%	***	-6.06%	***
1996	691	0.61	-3.27%	**	-4.30%	***	-3.31%	***	-4.33%	***
1997	664	1.01	-4.08%	***	-5.24%	***	-3.80%	***	-5.85%	***
1998	647	0.85	-7.90%	***	-12.44%	***	-8.07%	***	-12.32%	***
1999	415	0.78	-8.76%	***	-7.54%	***	-9.15%	***	-7.92%	***
2000	320	0.58	-11.75%	***	-13.88%	***	-11.83%	***	-13.52%	***
2001	177	1.05	-5.57%	***	-6.17%	***	-6.62%	***	-6.08%	***
2002	399	0.56	-4.48%	***	-6.99%	***	-4.83%	***	-6.76%	***
1995-2002	3806	0.84	-5.65%	***	-7.17%	***	-5.78%	***	-7.29%	***

Table 2- 8	Type of Repurchase (continued) At Announcement CARs (-1,+1)								
Dutch-Auction			Market Model				Scholes-Williams		
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	9	0.96	4.41%	***	4.55%	***	4.37%	*	4.38%	*
1996	17	0.61	9.32%	***	9.12%	***	9.32%	***	9.14%	***
1997	21	1.01	9.66%	**	10.06%	***	9.63%	***	10.14%	***
1998	24	0.85	8.24%	***	8.17%	***	8.36%	***	8.25%	***
1999	18	0.78	7.93%	***	7.91%	***	7.91%	***	7.78%	**
2000	17	0.58	12.96%	***	12.79%	***	12.91%	***	12.81%	***
2001	9	1.05	9.50%	**	9.80%	**	9.53%	***	9.85%	***
2002	11	0.56	13.28%	***	13.23%	***	13.12%	***	13.00%	***
1995-2002	126	0.84	9.47%	***	9.50%	***	9.46%	***	9.49%	***

Fixed Price			Market Model				Scholes-Williams		
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	8	0.96	19.54%	***	19.67%	***	19.52%	***	19.55%	***
1996	11	0.61	2.91%		2.93%		2.86%		2.85%	
1997	14	1.01	4.16%	**	4.13%	**	4.11%	**	4.09%	**
1998	6	0.85	5.18%	***	4.66%	**	5.22%	***	4.75%	**
1999	14	0.78	12.70%	***	13.08%	***	12.65%	***	13.13%	***
2000	13	0.58	11.08%	***	10.67%	***	11.21%	***	11.18%	***
2001	9	1.05	10.97%	***	10.35%	***	11.39%	***	.1079*	***
2002	16	0.56	7.93%	***	7.59%	***	7.77%	***	7.53%	***
1995-2002	91	0.84	9.07%	***	8.92%	***	9.08%	***	9.01%	***

Open Market			Market Model				Scholes-Williams		
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	493	0.96	2.48%	***	2.47%	***	2.48%	***	2.45%	***
1996	691	0.61	2.41%	***	2.35%	***	2.44%	***	2.33%	***
1997	664	1.01	2.34%	***	2.24%	***	2.36%	***	2.03%	***
1998	647	0.85	3.45%	***	3.23%	***	3.54%	***	3.24%	***
1999	415	0.78	3.57%	***	3.72%	***	3.59%	***	3.75%	***
2000	320	0.58	4.20%	***	3.91%	***	4.24%	***	4.01%	***
2001	177	1.05	4.86%	***	3.74%	***	4.54%	***	3.95%	***
2002	399	0.56	3.29%	***	3.05%	***	3.31%	***	3.07%	***
1995-2002	3806	0.84	3.07%	***	2.91%	***	3.08%	***	2.90%	***

Table 2- 8   Type of Repurchase (continued) Short-term (+2,+30) CARs

Dutch-Auction			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	9	0.96	0.00%		0.94%		-0.17%		0.27%	
1996	17	0.61	1.07%		0.13%		1.14%		-0.11%	
1997	21	1.01	-5.83%	*	-3.10%		-7.42%		-4.71%	
1998	24	0.85	3.01%		2.37%		3.95%		2.75%	
1999	18	0.78	-4.71%		-0.45%		-3.96%		-0.46%	
2000	17	0.58	13.47%	*	10.55%	*	12.36%	*	10.04%	
2001	9	1.05	4.36%		4.73%		4.44%		5.05%	
2002	11	0.56	2.91%		2.47%		2.91%		2.82%	
1995-2002	126	0.84	1.53%		1.93%		1.33%		1.64%	

Fixed Price			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	8	0.96	-7.04%		-5.82%		-6.64%		-6.40%	
1996	11	0.61	2.35%		0.90%		0.56%		-0.55%	
1997	14	1.01	4.55%		6.58%		4.58%		6.44%	
1998	6	0.85	-18.28%	*	-21.51%	**	-20.68%	**	-23.41%	***
1999	14	0.78	-3.74%		-1.98%		-5.04%		-2.18%	
2000	13	0.58	-4.26%		-1.67%		-3.66%		-2.24%	
2001	9	1.05	-0.15%		0.34%		-1.25%		-0.58%	
2002	16	0.56	-0.39%		-0.87%		-0.14%		-0.68%	
1995-2002	91	0.84	-2.24%		-1.47%		-2.62%		-2.01%	

Open Market			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	493	0.96	0.17%		0.49%		0.14%		0.11%	
1996	691	0.61	0.89%	***	2.35%	***	0.85%	***	0.55%	*
1997	664	1.01	0.68%		0.61%		0.83%		-0.53%	
1998	645	0.85	3.59%	***	1.73%		3.78%	***	1.73%	
1999	415	0.78	2.18%		4.89%	***	2.10%		4.34%	***
2000	320	0.58	2.93%	***	1.73%	**	3.05%	***	2.11%	**
2001	177	1.05	5.24%	*	6.47%	**	5.81%	*	6.40%	**
2002	399	0.56	1.93%		1.69%		1.96%		1.62%	
1995-2002	3804	0.84	1.84%	***	1.73%	***	1.92%	***	1.43%	***

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Table 2- 8   Type of Repurchase (continued) Two-year post CARs

Dutch-Auction			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	9	0.96	15.16%		9.84%		10.57%		2.50%	
1996	17	0.61	29.08%	*	2.99%		24.87%	*	1.33%	
1997	21	1.01	-25.93%	**	-17.44%	**	-44.54%	**	-33.91%	***
1998	24	0.85	-3.08%		11.60%		-2.47%		10.84%	
1999	18	0.78	21.38%	*	52.79%	***	22.70%	*	56.29%	***
2000	17	0.58	98.74%	***	86.99%	***	94.99%	***	85.17%	***
2001	9	1.05	-60.34%	**	-25.52%	*	-66.22%	**	-32.68%	**
2002	11	0.56	-15.43%		-7.76%		-9.11%		-5.06%	
1995-2002	126	0.84	10.73%	*	16.90%	*	6.62%		13.19%	*

Fixed Price			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	8	0.96	-0.27%		-3.44%		-4.96%		-10.29%	
1996	11	0.61	47.80%	***	38.55%	***	45.09%	***	38.73%	***
1997	14	1.01	30.24%		24.42%		28.38%		24.11%	
1998	6	0.85	22.99%		16.63%		25.85%		18.58%	
1999	14	0.78	9.60%		28.14%	*	11.82%		33.77%	**
2000	13	0.58	61.40%	***	52.45%	***	62.76%	***	59.80%	***
2001	9	1.05	16.55%		19.33%		19.69%		21.34%	
2002	16	0.56	-3.15%		8.45%		-7.07%		2.39%	
1995-2002	91	0.84	23.33%	***	24.39%	***	22.63%	***	24.89%	***

Open Market			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	493	0.96	20.32%	***	16.15%	***	19.59%	***	12.45%	***
1996	691	0.61	25.58%	***	1.99%	***	24.87%	***	1.52%	***
1997	664	1.01	-5.58%	***	-14.52%	***	-2.21%	***	-30.87%	***
1998	643	0.85	0.04%	***	24.41%	***	1.01%	***	22.15%	***
1999	415	0.78	41.18%	***	66.57%	***	37.95%	***	64.43%	***
2000	320	0.58	44.47%	***	26.75%	***	43.60%	***	33.09%	***
2001	177	1.05	-22.96%	***	-8.44%	***	-19.77%	***	-9.82%	***
2002	399	0.56	-14.28%	***	0.56%	***	-12.45%	***	-2.07%	***
1995-2002	3802	0.84	11.99%	***	13.23%	***	12.43%	***	9.37%	***

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Table 2- 8   Type of Repurchase (continued) Three-year CARs

Dutch-Auction			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	9	0.96	17.32%		6.43%		11.92%		-4.68%	
1996	17	0.61	12.60%		-21.98%		6.91%		-24.31%	*
1997	21	1.01	-37.61%	***	-16.66%	***	-62.20%	***	-38.12%	***
1998	24	0.85	26.53%	*	49.05%	***	28.88%	**	50.48%	***
1999	18	0.78	44.61%	**	93.86%	***	45.23%	**	98.89%	***
2000	17	0.58	138.77%	***	118.89%	***	132.27%	***	116.48%	**
2001	9	1.05	-79.17%	***	-0.30%	*	-86.24%	***	-40.78%	**
2002	11	0.56	-15.43%		-7.76%		-9.11%		-5.06%	
1995-2002	126	0.84	19.62%	**	30.21%	***	14.02%	**	25.55%	***

Fixed Price			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	8	0.96	17.51%		6.95%		4.94%		-7.22%	
1996	11	0.61	45.69%	***	32.70%	**	38.89%	***	30.09%	**
1997	14	1.01	17.03%		12.01%		13.35%		12.12%	
1998	6	0.85	22.90%		12.67%		23.69%		11.26%	
1999	14	0.78	24.95%	**	46.25%	***	29.64%	**	57.40%	***
2000	13	0.58	69.43%	***	61.28%	***	68.63%	***	67.59%	***
2001	9	1.05	28.34%		34.83%		34.57%		39.13%	
2002	16	0.56	-3.15%		8.45%		-7.07%		2.39%	
1995-2002	91	0.84	27.34%	***	28.02%	***	25.50%	***	28.34%	***

Open Market			Market Model				Scholes-Williams			
Year	n	B	Equal Wt		Value Wt		Equal Wt		Value Wt	
1995	493	0.96	38.74%	***	21.92%	***	38.21%	***	16.59%	***
1996	691	0.61	25.11%	***	-9.15%	***	23.92%	***	-9.76%	***
1997	664	1.01	-13.98%	***	14.58%	***	-8.48%	***	-38.89%	***
1998	643	0.85	19.00%	***	52.11%	***	19.47%	***	53.07%	***
1999	415	0.78	65.06%	***	103.45%	***	58.69%	***	99.39%	***
2000	320	0.58	46.14%	***	26.00%	***	45.69%	***	33.63%	***
2001	177	1.05	-36.28%	***	-12.74%	***	-30.28%	***	-0.15%	***
2002	399	0.56	-14.28%	***	0.56%	***	-12.45%	***	-2.07%	***
1995-2002	3802	0.84	18.16%	***	20.39%	***	18.64%	***	15.28%	***

Table 2-9 Market Reaction to Repurchase Announcements

Models 1 through 6 include 913 firms that announce open-market repurchases from 1995 to 2002. $Return_{it} = b_0 + b_1 X_{it} + b_2 Year\ Indicators + e_{it}$. (t-statistics in parentheses; ***, **, and * denote significant levels at 1%, 5% and 10% levels).

A. Return for (-30, -2) Panel A is 1 of 2

Variable	(1)		(3)		(5)		(6)	
Intercept	-0.07482		-0.04384	*	-0.05735	***	-0.04381	*
	(-.81)		(-1.75)		(6.67)		(-1.69)	
PrcBk-1	-0.00007		0.00014				0.00014	
	(-0.71)		(0.42)				(0.43)	
EpsDil-1	0.03759							
	(0.41)							
NI/assets	-0.04718							
	(-0.63)							
Share%	-0.07526	**						
	(-2.14)							
StkVal	-0.00128							
	(-0.08)							
IncGrow	-0.00032		-0.00057	**			-0.00057	**
	(-1.66)	*	(-2.25)				(-2.24)	
EpsGrow			0.00000				0.00000	
			(0.25)				(0.32)	
MktVal	0.00034							
	(0.97)							
BlkVal	0.00039							
	(0.66)							
Soptexer			0.00051				0.00050	
			(0.68)				(0.66)	
DumACQ	0.00598		0.00667		0.02134		0.01139	
	(0.09)		(0.11)		(0.30)		(0.18)	
DumDIL	0.01781		0.01478		0.01877		0.01712	
	(0.63)		(0.48)		(0.67)		(0.56)	
DumEBP	0.00539		-0.00762		-0.00630		-0.00664	
	(0.21)		(-0.26)		(-0.22)		(-0.22)	
DumESV	-0.02367		-0.00148		-0.02299		-0.00185	
	(-1.22)		(-0.07)		(-1.26)		(-0.09)	
DumSTP	0.04380	**	0.04167	**	0.03036		0.04277	**
	(2.13)		(2.04)		(1.53)		(2.07)	
DumUVL	-0.08009	***	-0.11400	***	-0.08829	***	-0.11392	***
	(-3.11)		(-4.21)		(-3.43)		(-4.19)	
Freq							-0.01310	
							(-0.69)	
Somefreq							0.00623	
							(0.37)	
Year	Yes		Yes		No		Yes	
Adj. R^2	0.0365		0.0517		0.0121		0.0494	

Table 2-9 (Continued)

Models 7 and 8 include 963 firms that announce open-market, Dutch-auction or fixed-price repurchases from 1995 to 2002.

A. Return for (-30, -2) Panel A is 2 of 2.

Variable	(2)		(4)		(7)	(8)
Intercept	-0.00872		-0.06282	***		
	(-0.07)		(-2.76)			
PrcBk_0	-0.00059		-0.00017			
	(-0.71)		(-0.52)			
EpsDil_0	0.04454					
	(0.36)					
Share%	-0.07525	**				
	(-2.04)					
IncGrow	-0.00049	**				
	(-2.27)					
EpsGrow			0.00000			
			(0.38)			
MktVal			0.00028			
			(0.81)			
Soptexer	-0.00004		0.00052			
	(-0.03)		(0.67)			
DumACQ	0.00855					
	(0.12)					
DumDIL	0.01317					
	(0.43)					
DumEBP	-0.00437					
	(-0.15)					
DumESV	-0.03493					
	(-1.60)					
DumSTP	0.04245	**				
	(1.97)					
DumUVL	-0.08121	***				
	(-2.87)					
Year	Yes		Yes			
Adj. R^2	0.0422		0.0144			

Table 2-9 (continued)

B.   Return for (-1 +1) Panel B is 1 of 2

Variable	(1)		(3)		(5)		(6)	
Intercept	-0.03232		0.00069		0.01572	***	-0.00184	
	(-0.83)		(0.06)		(4.50)		(-0.16)	
PrcBk-1	-0.00001		-0.00019				-0.00019	
	(-0.18)		(-1.33)				(-1.34)	
EpsDil-1	0.03675							
	(0.95)							
NI/assets	-0.00686							
	(-0.22)							
Share%	-0.01687							
	(-1.14)							
StkVal	0.00135	*						
	(1.90)							
IncGrow	-0.00009		-0.00007				-0.00006	
	(-1.13)		(-0.61)				(-0.52)	
EpsGrow			0.00001	**			0.00001	**
MktVal	-0.00008							
	(-0.56)							
BlkVal	0.00004							
	(0.15)							
Soptexer			0.00048				0.00049	
			(1.45)				(1.07)	
DumACQ	-0.01342		0.01246		0.00938		0.00908	
	(0.47)		(0.45)		(0.32)		(0.33)	
DumDIL	-0.01188		-0.02039		-0.00829		-0.02241	*
	(-0.99)		(-1.52)		(-0.73)		(-1.65)	
DumEBP	-0.00812		-0.01216		-0.00449		-0.01263	
	(-0.66)		(-0.93)		(-0.39)		(-0.96)	
DumESV	0.01024	*	0.00831		0.00718		0.00772	
	(1.25)		(0.89)		(0.97)		(0.82)	
DumSTP	-0.00019		-0.01008		-0.00389		-0.01136	
	(-0.02)		(-1.12)		(-0.48)		(-1.25)	
DumUVL	0.00239		-0.00985		0.00015		-0.01064	
	(0.22)		(-0.82)		(0.01)		(-0.89)	
Freq							0.00641	
							(0.76)	
Somefreq							0.00244	
							(0.33)	
Year	Yes		Yes		No		Yes	
Adj. R^2	-0.0062		0.0062		-0.0041		0.0052	

Table 2-9 (continued)

B. Return for (-1 +1) Panel B is 2 of 2.

Variable	(2)		(4)		(7)		(8)	
Intercept	-0.00352		0.00384		0.00596		0.01180	
	(-.007)		(0.39)		(0.53)		(1.29)	
PrcBk_0	0.00004		-0.00019					
	(0.13)		(-1.34)					
EpsDil_0	0.00529							
	(0.11)							
Share%	-0.01509							
	(-1.01)							
IncGrow	-0.00012				-0.00012			
	(-1.33)				(-1.08)			
EpsGrow			0.00001	**	0.00000			
MktVal			-0.00004					
			(-0.30)					
Soptexer	0.00001	*	0.00049		0.00039			
	(1.69)		(1.46)		(1.16)			
DumACQ	0.01274				0.00983		0.01381	
	(0.44)				(0.35)		(0.47)	
DumDIL	-0.01956				-0.01793		-0.00754	*
	(-1.60)				(-1.30)		(-0.65)	
DumEBP	-0.00823				-0.01211		-0.00395	
	(-0.64)				(-0.91)		(-0.34)	
DumESV	0.01963	**			0.00512		0.00745	
	(2.22)				(0.56)		(0.97)	
DumSTP	-0.00182				-0.00960		-0.00324	
	(-0.21)				(-1.05)		(-0.39)	
DumUVL	0.00026				-0.00405		0.00470	
	(0.02)				(-0.34)		(0.44)	
Freq					0.01			
					(0.77)			
Somefreq					0.00			
					(0.06)			
DA					0.07	***	0.06122	***
					(5.11)		(4.69)	
FP					-0.02		-0.01425	
					(-0.68)		(-0.48)	
Year	Yes		Yes		Yes		Yes	
Adj. R^2	0.0002		0.0052		0.0390		0.0139	

Table 2-9 (continued)

C. Return for (+2 +30) Panel C is 1 of 2

Variable	(1)		(3)		(5)		(6)	
Intercept	-0.05920		0.00274		0.01746	**	0.01165	
	(-0.77)		(0.14)		(2.44)		(0.56)	
PrcBk-1	-0.00004		-0.00089	***			-0.00088	
	(-0.49)		(-3.45)				(-3.44)	***
EpsDil-1	0.05954							
	(0.78)							
NI/assets	0.06832							
	(1.11)							
Share%	0.00731							
	(0.25)							
StkVal	0.00247	*						
	(1.77)							
IncGrow	-0.00019		0.00041	**			0.00037	*
	(-1.20)		(2.01)				(1.82)	
EpsGrow			0.00000				0.00001	
			(0.57)				(0.97)	
MktVal	0.00058							
	(0.20)							
BlkVal	-0.00007							
	(-0.15)							
Soptexer			-0.00053				-0.00063	
			(-0.96)				(-1.04)	
DumACQ	0.00179		0.01022		0.00542		0.02843	
	(0.03)		(0.20)		(0.09)		(0.57)	
DumDIL	-0.01649		-0.00534		-0.02721		0.00491	
	(-0.70)		(-0.22)		(-1.16)		(0.20)	
DumEBP	-0.02076		-0.01848		-0.01060		-0.01550	
	(-0.87)		(-0.77)		(-0.44)		(-0.65)	
DumESV	-0.00223		0.00829		0.00542		0.00986	
	(-0.14)		(0.49)		(0.36)		(0.58)	
DumSTP	0.01879		0.00397		0.02073		0.00996	
	(1.11)		(0.24)		(1.26)		(0.61)	
DumUVL	0.01361		0.02833		0.01873		0.03119	
	(0.64)		(1.30)		(0.87)		(1.44)	
Freq							-0.04007	***
							(-2.64)	
Somefreq							-0.00017	
							(-0.01)	
Year	Yes		Yes		No		Yes	
Adj. R^2	-0.0009		0.0452		-0.0021		0.0572	

Table 2-9 (continued)
C. Return for (+2 +30) Panel C is 2 of 2.

Variable	(2)		(4)		(7)		(8)	
Intercept	-0.01616		0.00549		-0.00635		0.00638	
	(-0.16)		(0.31)		(-0.16)		(0.23)	
PrcBk_0	0.00058		-0.00078	***				
	(0.85)		(-3.07)					
EpsDil_0	-0.01730							
	(-0.17)							
Share%	0.00372							
	(0.12)							
IncGrow	-0.00007				0.00026			
	(-0.39)				(0.68)			
EpsGrow			0.00000		0.00000			
			(0.54)		(0.28)			
MktVal			0.00018					
			(0.67)					
Soptexer	0.00103	***	-0.00055		0.00039			
	(0.91)		(-0.90)		(-0.33)			
DumACQ	0.00401				-0.00125		-0.00343	
	(0.07)				(-0.01)		(-0.04)	
DumDIL	-0.01632				-0.00955		-0.02943	
	(-0.65)				(-0.20)		(-0.82)	
DumEBP	-0.01894				-0.04501		-0.02623	
	(-0.73)				(-0.98)		(-0.72)	
DumESV	0.00220				-0.03871		-0.01688	
	(0.12)				(-1.22)		(-0.72)	
DumSTP	0.00817				-0.01210		0.01125	
	(0.46)				(-0.38)		(0.45)	
DumUVL	0.00529				0.00080		0.00735	
	(0.23)				(0.02)		(0.23)	
Freq					0.00173			
					(0.06)			
Somefreq					0.02599			
					(1.03)			
DA					0.20396	***	0.18427	***
					(4.53)		(4.59)	
FP					0.17624	*	0.17596	*
					(1.79)		(1.94)	
Year	Yes		Yes		Yes		Yes	
Adj. R^2	-0.0016		0.0419		0.0376		0.0220	

Table 2-9 (continued)
D.   Return for (+30 Two years) Panel D is 1 of 2

Variable	(1)		(3)		(5)		(6)	
Intercept	-0.13381		-0.01625		0.12715	***	-0.01137	
	(-0.74)		(-0.12)		(2.97)		(-0.08)	
PrcBk-1	0.00051		0.00190				0.00189	
	(1.10)		(1.15)				(1.15)	
EpsDil-1	0.41952							
	(0.93)							
NI/assets	-0.62612	*						
	(-1.71)							
Share%	0.35803	**						
	(2.08)							
StkVal	0.01030							
	(1.25)							
IncGrow	-0.00409	***	-0.00668	***			-0.00669	***
	(-4.34)		(-5.25)				(-5.23)	
EpsGrow			0.00002				0.00002	
			(0.42)				(0.42)	
MktVal	-0.00123							
	(-0.72)							
BlkVal	-0.00115							
	(-0.40)							
Soptexer			-0.00353				-0.00353	
			(-0.93)				(-0.93)	
DumACQ	-0.20677		-0.26211		-0.24351		-0.26028	
	(-0.62)		(-0.84)		(-0.69)		(-0.82)	
DumDIL	-0.14856		-0.25748		-0.28589	**	-0.25591	*
	(-1.07)		(-1.68)		(-2.05)		(-1.66)	
DumEBP	-0.04357		0.04580		0.09425		0.04574	
	(-0.31)		(0.31)		(0.66)		(0.31)	
DumESV	-0.09432		-0.01325		-0.14440		-0.01168	
	(-0.99)		(-0.12)		(-1.58)		(-0.11)	
DumSTP	0.24495	**	0.25132	***	0.22910	**	0.25270	**
	(2.57)		(2.45)		(2.33)		(2.44)	
DumUVL	-0.08316		-0.06036		-0.13960		-0.05890	
	(-0.66)		(-0.44)		(-1.09)		(-0.43)	
Freq							0.00067	
							(0.01)	
Somefreq							-0.01090	
							(-0.13)	
Year	Yes		Yes		No		Yes	
Adj. R^2	0.0816		0.1253		0.0097		0.1224	

Table 2-9 (continued)

D. Return for (+30 Two years) Panel D is 2 of 2.

Variable	(2)		(4)		(7)		(8)	
Intercept	-0.50772		-0.09659		-0.02546		-0.01469	
	(-0.82)		(-0.81)		(-0.19)		(-0.13)	
PrcBk_0	0.00202		0.00088					
	(0.50)		(0.53)					
EpsDil_0	0.60061							
	(1.01)							
Share%	0.34833	*						
	(1.95)							
IncGrow	-0.00456	***			-0.00613	***		
	(-4.33)				(-4.82)			
EpsGrow			0.00002		0.00002			
			(0.46)		(0.63)			
MktVal			-0.00057					
			(-0.33)					
Soptexer	0.00232		-0.00316		-0.00390			
	(0.35)		(-0.81)		(-1.01)			
DumACQ	-0.23201				-0.26787		-0.22517	
	(-0.67)				(-0.83)		(-0.65)	
DumDIL	-0.29160	**			-0.28226	*	-0.26150	*
	(-1.99)				(-1.81)		(-1.91)	
DumEBP	-0.04190				0.02893		0.04388	
	(-0.27)				(0.19)		(0.32)	
DumESV	0.11796				-0.04740		-0.09898	
	(-1.11)				(-0.46)		(-1.09)	
DumSTP	0.20114	*			0.22129	**	0.16910	*
	(1.93)				(2.13)		(1.75)	
DumUVL	-0.06279				-0.06986		-0.19176	
	(-0.46)				(-0.51)		(-1.53)	
Freq					0.00320			
					(0.03)			
Somefreq					0.03316			
					(0.40)			
DA					0.12428		0.16774	
					(0.84)		(1.08)	
FP					-0.04013		0.10648	
					(-0.12)		(0.31)	
Year	Yes		Yes		Yes		Yes	
Adj. R^2	0.0754		0.0842		0.1212		0.0534	

Table 2-9 (continued)

E.　Return for (+30 Three years) Panel E is 1 of 2

Variable	(1)		(3)		(5)		(6)	
Intercept	-0.84043		0.05133		0.20817	***	0.08689	
	(-1.47)		(0.30)		(3.78)		(0.50)	
PrcBk-1	0.00004		0.00455	**			0.00452	**
	(0.06)		(2.17)				(2.15)	
EpsDil-1	0.99994	*						
	(1.76)							
NI/assets	-0.81467	*						
	(-1.77)							
Share%	0.39822	*						
	(1.84)							
StkVal	0.00361							
	(0.35)							
IncGrow	-0.00490	***	-0.00455	**			-0.00460	**
	(-4.13)		(-2.39)				(-2.42)	
EpsGrow			-0.00539	***			-0.00550	***
			(-3.63)				(-3.69)	
MktVal	-0.00244							
	(-1.13)							
BlkVal	0.00059							
	(0.16)							
Soptexer			-0.00632				-0.00638	
			(-1.30)				(-1.32)	
DumACQ	-0.44883	***	-0.54254		-0.54550		-0.53149	
	(-1.07)		(-1.36)		(-1.20)		(-1.32)	
DumDIL	-0.24654	**	-0.38236	*	-0.38534	**	-0.32085	
	(-1.40)		(-1.71)		(-2.16)		(-1.63)	
DumEBP	0.07503		0.10720		0.27925		0.10691	
	(0.42)		(0.56)		(1.53)		(0.56)	
DumESV	-0.12850		-0.07849		-0.19422	*	-0.06694	
	(-1.07)		(-0.58)		(-1.66)		(-0.49)	
DumSTP	0.34207	***	0.27753	**	0.33184	***	0.28678	**
	(2.70)		(2.13)		(2.64)		(2.18)	
DumUVL	-0.06817		-0.06211		-0.11837		-0.05082	
	(-0.43)		(-0.36)		(-0.72)		(-0.29)	
Freq							0.00949	
							(0.08)	
Somefreq							-0.08198	
							(-0.75)	
Year	Yes		Yes		No		Yes	
Adj. R^2	0.07560		0.12420		0.01560		0.12240	

Table 2-9 (continued)

E.   Return for (+30 Three years) Panel E is 2 of 2.

Variable	(2)		(4)		(7)		(8)	
Intercept	-0.89011		0.00417		0.09190		0.00902	
	(-1.13)		(0.03)		(0.53)		(0.06)	
PrcBk_0	-0.00027	***	0.00430	**				
	(-0.05)		(2.06)					
EpsDil_0	1.03764							
	(1.36)							
Share%	0.41224	*						
	(1.80)							
IncGrow	-0.00568	***			-0.00432	**		
	(-4.24)				(-2.31)			
EpsGrow			-0.00720	***	-0.00438	***		
			(-5.69)		(-3.21)			
MktVal			-0.00152					
			(-0.71)					
Soptexer	-0.00558		-0.00636		-0.07150			
	(-0.66)		(-1.31)		(-1.47)			
DumACQ	-0.49438				-0.50009		-0.48365	
	(-1.12)				(-1.23)		(-1.10)	
DumDIL	-0.40336	**			-0.37268	*	-0.37950	**
	(-2.16)				(-1.88)		(-2.183)	
DumEBP	0.08885				0.09630		0.19319	
	(0.46)				(0.51)		(1.09)	
DumESV	-0.15604				-0.08623		-0.13244	
	(-1.15)				(-0.64)		(-1.14)	
DumSTP	0.28975	**			0.27379	**	0.25864	**
	(2.18)				(2.09)		(2.11)	
DumUVL	-0.04656				-0.05351		-0.20479	
	(-0.27)				(-0.31)		(-1.29)	
Freq					-0.04723			
					(-0.40)			
Somefreq					-0.02409			
					(-0.23)			
DA					-0.03018		-0.00015	
					(-0.14)		(0.00)	
FP					-0.14752		0.01255	
					(-0.29)		(0.02)	
Year	Yes		Yes		Yes		Yes	
Adj. R^2	0.06820		0.11180		0.10570		0.04820	

Chapter 3

Why do firms repurchase stock to acquire another firm?

In chapter 2, I suggest that using a repurchase to fund an acquisition may be an opportunistic motivation. This categorization was based on the hubris hypothesis of why we continue to see poor stock returns associated with mergers.[45] This chapter investigates the enigmatic decision by a firm to take on the extra transactional step to repurchase its shares with cash and then use those shares to finance an acquisition, rather than use the cash to directly finance the acquisition. It would seem to be far easier, if a firm has the cash available, to acquire the target firm with the cash. This is even more of an enigma when it is well known that cash offerings perform better than stock offerings.[46]

I find that firms that repurchase shares to finance an acquisition are well compensated for their efforts, The most compelling argument as to why firms would take on the extra financing step is to achieve the best of both the stock-financing acquisitions and cash-financing acquisitions. These firms experience risk sharing with the target firms, counteract the negative effects of dilution by repurchasing shares first, and enjoy a tax advantage for their efforts.

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[45] Roll, 1986, The Hubris Hypothesis of Corporate Takeovers
[46] Martin, 1986, The Method of Payment in Corporate Acquisitions, Investment Opportunities, and Management Ownership.

The organization of this chapter proceeds as follows. The first part discusses merger and acquisition literature. The second section develops the hypotheses and methodology. The third section reports the empirical findings and the last section summarizes and concludes the chapter.

Literature

Takeovers can occur through mergers, tender offers, or proxy contests. This research focuses on mergers, which are generally stock-financed, and tender offers, which are generally cash-financed. Mergers are negotiated directly with the target managers and require approval from the target firm's board of directors. Tender offers are offers to buy shares made directly to target shareholders, bypassing the target managers. This research will also investigate the method of payment choice. Specifically, the research asks why firms would choose to repurchase their shares with cash and then use those shares to finance an acquisition, rather than use cash to finance the acquisition directly.

Several hypotheses have been put forth to help explain the market's behavior toward mergers and acquisitions. Myers and Majluf (1984), in their seminal paper that develops pecking order, address the benefits of financial slack. Convention assumes managers should accept all positive net present value (NPV) projects. However, if a firm can only issue risky debt, the firm may rationally pass up on positive NPV projects. Having financial slack enables the firm to take all positive NPV projects. Thus, firms with financial slack will issue stock only when their stock is overvalued. As a result, the

equity offering may send a signal that managers believe that their stock is overvalued. Thus, consistent with the Cash Availability Hypothesis, firms with financial slack will prefer to finance an acquisition with cash if their stock is undervalued.

In a similar vein to the Cash Availability Hypothesis, the Investment Opportunities Hypothesis argues that managers with growth opportunities will prefer to raise capital with equity because it allows more flexibility in the use of funds than debt financing.[47] Martin (1996) tests this hypothesis with three proxies for investment opportunity (Tobin's q, five-years sales growth and the recent run-up of the firm's stock price) and finds that both acquiring firms with high growth opportunity and the firms with recent stock price run-ups are more likely to use stock.

The Control Hypothesis argues that firms with large managerial ownership positions should prefer to use cash to finance an acquisition because the alternative would dilute the managers' control position.[48] Martin (1996) suggests that managerial ownership may be nonlinear on the choice of stock financing. At very low and high ownership levels managers may not be very concerned about the impact of dilution of control. However, the middle range may be very concerned. Martin uses a spline variable approach to define the ownership levels. Low ownership groups have less than five percent manager and director combined ownership; the middle range is defined as greater than five percent and less than 25 percent and the high owner firms have greater than 25 percent manager and director control. Martin's sample of 721 firms found 425 in the low

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[47] Myers (1977) ties existence of growth opportunities to debt. Myers and Majluf (1984) and Jung, Kim, and Stulz (1995) put forth this hypothesis.

group, 299 in the middle range and 125 in the high ownership group.[49] Martin found that

the low ownership group was not significant and he suggests that managers with low

ownership were not concerned with dilution effects. Martin found that the middle range

considered ownership important (significantly negative relationships in three of his four

logistic regressions which suggest that the firm is not likely to use stock financing).

Finally, Martin found the high ownership group to be significantly negative in one of four

regressions, substantiating his nonlinear choice of stock financing.

Martin (1996) uses the Risk Sharing Hypothesis to suggest that as target firms'

size increase (as measured by market value) and the addition of target firms to bidder

firms becomes more significant, the bidder will prefer to use stock in order to share the

risk with the target. On the other hand, if the acquiring firm's size is significantly larger

than the target firm, the acquirer will be less likely to feel the need to share risk since the

target will not have as much an impact to the combined firm. In this case, the bidder will

be less likely to use stock. Hansen (1987) models the payment choice under the condition

of asymmetric information. If the target knows its value better than the bidder, the bidder

will prefer stock in order to force the target to share in the post-acquisition reevaluation

effects. Martin's initial investigation finds no support. Martin refines his test by

establishing four distant groups of firms; both the bidder and target firms have high

Tobin's q ratios (q>1), both firms have low q ratios (q<1), and groups of one firm high q

and one firm low q. Martin finds that 68 percent of firms choose stock financing and only

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[48] Stulz (1988) and Jung, Kim, and Stulz (1995) suggest that managers will not want issue stock if in doing so will dilute their control position. Amihud, Lev, and Travlos (1990) find evidence to support the control hypothesis.

16 percent choose cash if both the bidder and target have high investment opportunities.

Furthermore, if both the parties have low investment opportunities, then only 26 percent

use stock financing and 42 percent use cash financing[50].

The Outside Monitoring Hypothesis is suggested by Jensen (1991) and Black

(1992). They argue that active investors and institutional shareholders undertake costly

monitoring and thus can take actions to align managers' interests with those of the

shareholders. Martin (1996) finds support in that the presence of blockholders and

institutional holders results in a higher likelihood of stock financing.

Another argument supporting stock-financed acquisitions was put forth by

Aboody, Kasznik and Williams (2000). They suggest that managers of acquiring firms

should prefer pooling versus purchasing accounting because purchase accounting

requires the firm to book as an asset the difference between the purchase price of the

acquisition and the book value of the target firm. This asset is expensed into the future.

This additional expense dampens net income and earning per share for years to come. As

an aside, the authors did not address the positive tax consequences of these future

expenses, but instead focused attention on the negative impacts of the publicly reported

earnings.[51] Aboody, Kasznik, and Williams suggest that because managerial incentive

contracts are often tied to net income and earnings per share, managers should prefer

pooling accounting. However, pooling accounting cannot be accomplished in conjunction

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[49] This cutoff choice is consistent with Morck, Shleifer and Vishny (1988). Furthermore Martin (1995) performed robustness checks on percentage changes with the groups and found little difference.
[50] Martin's findings are in a total sample in which 40 percent of firms use stock financing and 35 percent cash.

with an acquiring firm repurchasing its shares. APBO No. 16 prohibits changes in equity interests of voting stock with pooling accounting.[52] Therefore, firms cannot repurchase shares and then use those shares to pool assets with a target firm. The authors conclude that although managers should prefer pooling assets in stock for stock acquisitions, the transaction cannot be supported with the acquiring firm's repurchase of its own shares.

Aboody, Kasznik and Williams (2000) also argue that managers should prefer pooling. However, this might be shortsighted by the managers. Goodwill is created when a firm purchases another firm (or assets of another firm) for greater than its market value. The difference between the fair market value and the amount paid is considered goodwill. Historically, financial statement reporting for a purchase of another firm books goodwill as an asset and the goodwill is amortized for up to 40 years. On the other hand, when firms merge through pooling accounting, no goodwill is created. The combined firms simply add previously recorded book values together. Thus, for financial statement reporting the purchase accounting results in higher booked assets and thus higher amortization expenses. This decreases the combined firms reported earnings and lowers earning per share; thus most mangers would seek to meet the criteria of pooling accounting.

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[51] Title 26 of the Internal Revenue Code; subtitle A; Chapter 1; Subchapter B; Part VI; section 197 effective August 1993 states that a taxpayer is entitled to an amortization deduction for goodwill over a period of up to 15 years.

[52] Accounting Principles Board Opinion No. 16 (August 1070) establishes 12 specific criteria that most be met in order to qualify for pooling accounting. These 12 criteria include the use of exchange of common stock (90% "substantially all" rule); no equity changes in contemplation of combination (two-year rule) and shares can be reacquired only for purposes other than business combination. If any criteria are not met, the purchase method must be used.

Financial statement reporting and tax code reporting can be different. For most of the US tax code history, amortization of goodwill was not a tax-deductible expense. Thus mangers were justifiably reluctant to inherit the appearance of lower earnings per share that resulted with purchase accounting. However, effective August 1993, section 127 of the US tax code regarding amortization of goodwill and other intangibles changed to allow taxpayers the amortization deduction. Although there have been recent changes regarding purchase versus pooling accounting, these changes do not affect the section 127 tax code[53]. Since 1993 acquiring firms' managers who chose purchase accounting received a tax benefit (reduction in taxes payable due to increase in amortizable deductions). Although the purchase method does have the appearance of lower earnings per share; in reality the purchase method through its real tax benefit affords higher cash flows to the purchasing firm. My sample of firms falls under this tax code.

As an example, lets assume that a firm used purchase accounting with the acquisition of another firm. A very simple income statement might look like the following:

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[53] SFAS No. 141, Business Combinations, issued on 7-20-01 requires that the purchase method of accounting be used for all business combinations initiated after 6-30-01. This new purchase accounting method does not allow for goodwill amortization for financial reporting. Instead companies will recognize goodwill as an asset on financial statements and present it as a separate item on the balance sheet. Companies will then conduct an annual impairment test and goodwill will remain on the balance sheet as an asset subject to impairment. Some effects of this change may be that companies will no longer worry about structuring a deal in order to comply with pooling, goodwill will be more reflective of value and not a system of arbitrary amortization, and impairment charges could be costly and bumpy The new standards for goodwill accounting should contribute to more meaningful financial statements, improved transparency and greater consistency among companies. Three drawbacks are the lack of an international convergence, inconsistency with the existing tax code where goodwill remains amortizable, and the removal of the discipline of writing off goodwill which allows for more management discretion.

	Pooling	Purchase
Operating Income	50	50
Additional depreciation		
Due to purchase	0	10
Earnings before taxes	50	40
Taxes at 40 percent	20	16
Net Income	30	24

Thus, net income and earnings per share are greater under pooling accounting. However,

depreciation is a non-cash expense and as a matter of fact the sources of cash are greater

with purchasing. Therefore, a more insightful manager might realize the tax savings of

the purchase accounting will add value to the company's cash flows. Additionally, this is

what should matter to the investors. Thus, purchase accounting can be beneficial due to

the tax advantage. Normally, purchase accounting is conducted with cash. However, if a

firm believes its stock is undervalued and if the firm also has ample cash flow, managers

may be able to avail themselves of the best of both worlds. They can first take advantage

of their undervalued stock by announcing a repurchase and then use that stock to support

an acquisition and by APBO No. 16 be forced to use purchase accounting which will save

the firm future taxes. This scenario gives a strong argument for why firms would take on

extra transactions in order to acquire another firm. They proceed with this method to take

advantage of undervalued stock and to reduce the firm's future tax burden.

Most research on mergers and acquisitions finds that, on average, target firms

gain value and the bidder firms lose value.[54] For example, Travlos (1987) explores the

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[54] Bradley, Desai, and Kim, 1988, find average returns to bidders are non-positive. Lang, Stulz, and Walkling, 1989, find that having a low Tobin's Q (proxy for poor quality of bidding firm management) reduces the bidder's return (see also Servaes, 1991). Dennis and McConnell, 1986, investigate firms' senior securities and find that the bidder firm's convertible preferred stockholders have significantly positive returns while all other security holders are not significantly different from zero. Jensen and Ruback, 1983, provide summary of the literature.

Method of Payment Hypothesis and finds that bidders who use stock have significant negative abnormal returns while bidders who make cash offers experience normal returns. Specifically, Travlos finds that bidders using stock have significant negative stock price return reaction of -0.78 percent on the day prior to the announcement and -0.67 percent on the day of the announcement. Travlos concludes that, on average, stockholders of acquiring firms experience significant losses when their firm acquires another firm through the exchange of common stock. In contrast, bidders using cash offers have a positive two-day (-1,0) significant cumulative abnormal return reaction of 0.24 percent. Travlos suggests that his findings are consistent with the Signaling Hypothesis. He explains that firms signal overvaluation if they finance a takeover with stock. Thus, managers will prefer cash if they believe their stock is undervalued, while a stock-financed offer will be preferred in the opposite case. Accordingly, the market participants respond favorably to cash offers and negatively to stock offers. If a firm announces that it will repurchase its own shares prior to or in conjunction with an acquisition announcement, then the market participants are not likely to perceive that the firm is overvalued. In fact the market should conclude quite the opposite.

Taxes may have an important impact on stock price reactions of the bidding and target firms. Cash offers generate tax obligations for the target firm's stockholders. Wansley, Lane and Yang (1987) suggest that bidding firms will pay a higher premium in a cash offer to compensate a target firm's shareholders for their tax burden of tendering shares. Thus, the target firm's gain may simply be compensation for its upcoming tax burden. Again it should be noted that the firm using repurchased shares as the financing

vehicle would not have to offer the bidder firm additional compensation for the target's

tax consequences. However, it should be noted that the bidder's shareholders may suffer

a capital gains tax loss from tendering shares.

A cash offer affects the taxes of the acquiring firms by raising the depreciation

basis of acquired assets to the assets market values. This is advantageous to increasing

the firm's expenses and decreasing the firm's tax liability, but also has the effect of

reducing booked net income, which may have perceived adverse effects to the market

participants. Wansley, Lane, and Yang (1987) investigate the gains to bidder firms and

find significant positive stock price returns of 6.17 percent for an 81-day period

surrounding a cash acquisition announcement and a zero gain for stock acquisitions. The

authors suggest that the offer to the target reflects the bidder's expectations of the target's

value. Alternatively, if the bidder believes that the target is overvalued the bidder will

choose to finance with stock and if the bidders believes the target is undervalued the

bidder will prefer cash[55].

Servaes (1991) and Lang, Stulz and Walkling (1991) also explore the takeover

gains. Lang, Stulz, and Walkling document that abnormal returns in tender offers are

related to Tobin's q (high q is defined as q>1 and low as q<1) and find that bidders with

high q ratios have significant positive abnormal returns and low q bidders have

significant negative returns. Lang, Stulz, and Walkling find the highest value is created

when a high q firm takes over a low q firm and the value is destroyed when a low q firm

takes over a high q firm. Servaes adds to the research of Lang, Stulz, and Walkling with

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[55] Hansen (1987)

the addition of merger offers in his extended sample of 704 successful takeovers over the period 1972-1987. Servaes finds for the total sample that target returns are positive (23.64 percent) and significant, bidder negative (-1.07 percent) and total returns positive (3.66 percent). Servaes splits his sample based on the method of payment and finds that a cash offer results in a 26.67 percent return to the target firm, 3.44 percent return to the bidder and an 8.41 percent to the combined firm (calculated as a weighted average). He finds that a stock-financed acquisition, on average, results in a 20.47 percent return to the target firm, a -5.86 percent to the bidder, and a -3.03 percent to the combined firm. Finally, a combined stock and cash offer results in a 21.05 percent return to the target, a -3.74 percent return to the bidder, and 5.64 to the combined firm.

Morck, Shleifer and Vishny (1990) investigate why returns to bidding firms are negative and find that returns are most negative when the firm acquires another firm as a diversification, when it acquires a growing firm, or if it has poor management. Morck, Shleifer, and Vishny suggest that managers make acquisitions to pursue personal objectives other than maximization of shareholder value. Thus, managers are willing to pay more for targets than they are worth if the acquisition will serve their personal benefits of improving their job security or diversifying their human capital. Loughran and Vijh (1997) calculate the total wealth gains for mergers and acquisitions and find that all returns to the bidder in a stock merger are negative (and cash is positive). Specifically, Loughran and Vijh find that stock acquirers earn 24.2 percent less than their matched firms, on average, using buy and hold returns over a five-year period; whereas cash acquirers earn 18.5 percent more than their matched firms. Loughran and Vijh suggest

that cash tender offers obtain considerable gains because of the associated disciplinary actions afforded to the cash acquisition, such as the ability to appoint new managers. Rau and Vermaelen (1998) investigate long-term bidder performance and find that bidders in mergers underperform for up to three-years after the merger is complete.

Rather than explaining the persistent negative and positive stock price reactions to acquisitions as a method of payment issue, Megginson, Morgan and Nail (2004) show that the primary determinant of long-term performance in strategic mergers is related to changes in corporate focus. The authors find that the change in focus is significantly related to performance after controlling for the form of payment[56], and firm value ratios such as book-to-market ratio.[57] The authors find that focus-decreasing mergers as defined by the Herfindahl index which quantifies the revenue changes of each line of business (SIC codes)[58], result in significantly negative long-term performance.[59] Furthermore Megginson, Morgan and Nail find that increasing or at least preserving the focus of the firm's lines of business result in marginal long-term performance improvements. Megginson, Morgan and Nail's regression results reveal that their measure of focus change is the only variable with significant relationships to long-term buy-and-hold abnormal returns.

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[56] Loughran and Vijh (1997), Ghosh (2001), Linn and Switzer (2001). and Martin (1996)
[57] Rau and Vermaelen (1998) and Martin (1996)
[58] The degree of focus is found using the Herfindahl index for both revenue and assets. This looks at square of revenue (assets) of each division divided by the total revenue. Thus, the revenue of division A is divided by the revenue of the entire firm and then squared.
[59] Megginson etal find an average loss in stockholder wealth, firm value and cash flows of 18 percent, 9 percent and 2 percent respectively for up to three years post-merger.

Sicherman and Pettway (1987) find that buyers of divested assets gain wealth if the firms have related assets as defined by their two digit SIC codes. The authors studied 127 firms that acquired divested assets from 1893-1985 and found that related asset acquisitions resulted in an average 3.975 percent gain over firms that acquired unrelated divested assets. Sicherman and Pettway add that shareholders obtain higher returns when the acquirer purchases related lines of business. They further investigate how insider ownership affects the choice of relatedness.

Copeland and Weston (1988) discuss that managers may be motivated to acquire unrelated assets in order to reduce personal risk. A substantial portion of the manager's wealth is invested as human capital from employment. Thus, purchasing a divested unrelated line or simply diversifying the firm's assets helps reduce the manager's employment assets, which reduces personal risk. Sicherman and Pettway use insider ownership as a percentage of total ownership and find that firms acquiring related assets have a greater equity ownership than firms acquiring unrelated assets. Thus, firms that have high manager ownership are more likely to act in the shareholders' best interests, whereas low ownership managers may be motivated to be more self-serving and prefer to reduce their own risk.

Many studies note this effect. Kaplan and Weisbach (1992) find that bidder results are slightly negative and the combined firm's returns are positive. Thus, targets appear to be worth less than bidders pay, but are worth more than the target's market value prior to the takeover, suggesting that the acquisition increases the combined shareholder wealth. Kaplan and Weisbach focus on 1971-1982 acquisitions that later

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divested and classify some as successful. Although the emphasis of their paper is to show that not all firms that acquire another firm and then later divest are unsuccessful, they discovered an interesting outcome, showing that the market's initial reaction to the acquisition did a good job predicting whether the later divestiture was a success or not. They define an unsuccessful acquisition as one that reports an accounting loss at the later date's divestiture. Kaplan and Weisbach find that the combined returns at the acquisition announcement are significantly lower for the acquisitions that will, in hindsight, be classified as unsuccessful as compared to the corresponding returns for the successful divestitures and for the acquisitions that do not divest.

Although it has been substantiated that bidders often lose in an acquisition, merger activity continues. Roll (1986) explains this acquisition fever in his hubris hypothesis. In summary, the hubris hypothesis suggests that managers are infected by hubris and so overpay for targets because they overestimate their own ability to run the merged firm.[60] Furthermore, managers believe that they are better at estimating valuation than the merger evidence would indicate. Additionally, Jensen (1986) and others have noted that managers may want to increase the firm's size because they value the status associated with a larger firm and furthermore their compensation may be tied to the size of the firm. Thus, managers do not want to reduce firm size by distributing assets to shareholders (see Roll (1986)). Managers are more concerned with growth in market share, in labor employment and in new lines of business than in maximizing shareholder wealth (see Jensen and Meckling (1976)). Thus, managers are more concerned with size

and things money cannot buy, such as perks, prestige and future employment, than they are with maximizing the value of the firm.[61]

This desire to empire-build (see Roll (1986)) may lead to the acceptance of negative net present value projects; that is, managers may overinvest. Since managers are risk averse, they will not choose to increase their debt to the point of risking bankruptcy. Thus, rational self-serving managers will not want to increase interest payments and commitment levels in order to empire build; however, they will be more likely to make poor investment choices when free cash flow is available and bankruptcy is less likely. Poor investments could be carried out with cash or stock financing. If the firm chooses to use stock financing, managers may also conduct repurchasing activities to finance the stock-based acquisition. Thus, a repurchase in order to conduct an acquisition may signal an empire-building strategy and would not necessarily be good news to the market. Furthermore, stock-financed acquisitions have been shown to decrease the value of the acquiring firm.[62] Thus, firms that repurchase to facilitate an acquisition may find that the market reactions to the repurchase announcements are similar to non-positive market reactions to acquisition announcements.

Repurchasing stock in order to finance an acquisition creates one more step in the empire-building firm strategy. There are costs associated with this extra step (time lost and transaction fees) and therefore it would seem that there must be a benefit. It is likely

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[60] Shleifer and Vishny, 1988, suggest that managers willingly overpay for an acquisition to improve their job security.

[61] Graham and Harvey, 1999, survey 392 chief financial officers and find that executives are not concerned about many financial theories such as asset substitution, free cash flows or asymmetric information, but rather are concerned with earning per share dilution and recent stock price appreciation.

[62] Loughran and Vijh, 1997, and Travlos, 1987.

that both the signaling hypothesis and tax hypothesis play an important role in the

financing plan. Firms that repurchase shares may signal undervaluation and firms that use

stock to finance the acquisition in this situation must use purchase accounting. And

although purchase accounting will reduce the book value of earnings per share, it also

will reduce the firm's taxes and thus increase its cash flows.

Prediction, Data and Methodology

Hypotheses

In my previous chapter I suggest that an opportunistic reason for a repurchase is

to fund an acquisition, and thus positive stock price reactions may not be anticipated.

Based on previous research,[63] if a repurchase is conducted in order to finance an

acquisition it may also carry with it the poor stock return reactions that have been

associated with bidder firms conducting acquisitions. However, researchers have made a

clear distinction between cash-financed acquisitions and stock-financed acquisitions. If a

firm uses cash to repurchase shares which are then used to acquire a target firm, this is

not straight cash or straight stock-financed. Many researchers have documented losses to

bidding firms that use stock. The use of repurchased shares to conduct an acquisition is

stock-financed and may result in the negative abnormal returns associated with stock-

financed acquisitions. On the other hand, using repurchased stock to finance an

acquisition is just adding a step to a cash-financed acquisition and thus may act according

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[63] Travlos, 1987; Morck, Shleifer and Vishny, 1990; Loughran and Vijh, 1987; and Rau and Vermaelen, 1982.

to previous research and have no negative abnormal returns or possibly slightly positive returns.

Additionally, using a repurchase to facilitate an acquisition begs further investigation. Why would a firm go through such transactional gymnastics? It would be simpler and less costly in time and dollars to just conduct an acquisition with cash.[64] Therefore, there must be some benefit to taking on this additional cost. It may be that the premium to acquire is less with a stock-financed acquisition than with a cash-financed acquisition for the bidding firm will not need to compensate the target firm for its immediate tax consequences. [65]

It is possible that the repurchase announcement gives managers the anticipated positive stock price return reaction which more than offsets the anticipated decrease in stock price with an acquisition announcement. In a sense, this may extinguish the negative return reactions associated with a straight stock offering and allow bidder managers to pay a smaller premium at the acquisition. If this is the case, I expect that these firms may have better long-term performance than firms that do not take the extra transactional step since they would be less likely to overpay for the acquisition. [66]

Finally, purchasing accounting does carry a long term tax advantage. Normally stock offered acquisitions do not use purchase accounting. However, if the firm uses

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[64] Loughran, Tim, and Anand M Vijh, 1997, Do Long-Term Shareholders Benefit From Corporate Acquisitions?, *Journal of Finance* 52, 1765-1790. During a five-year period following the acquisition, on average, firms that complete stock mergers earn significantly negative excess returns of -25.0 percent whereas firms that complete cash tender offers earn significantly positive excess returns of 61.7 percent.
[65] Martin, 1996, finds that the higher the bidding firm's investment opportunity set the more likely the firm will choose to use stock financing.
[66] Roll, Richard, 1986, The Hubris Hypothesis of Corporate Takeovers, *The Journal of Business* Vol. 59, pp. 197-216. Roll argues that firms on average pay too much for an acquisition and thus the poor post

repurchased shares it can only proceed with purchase accounting. This is an advantage to the long-term cash flows of the combined firms.

In order to test, I will conduct a difference in means between firms announcing both a repurchase jointly with an acquisition and firms that announce an acquisition without a repurchase.

Hypothesis 1

Abnormal return (at the announcement date and long-term post announcement) will be less negative for firms that announce repurchase intentions with an acquisition announcement than for firms that only announce the acquisition.

This test will be performed at the announcement date for announcement date effects and also three-year and four-year post announcement.

Table 3-1 summarizes the hypotheses put forth in the literature. Most of the hypotheses make predictions on the method of payment choice. I question why firms would use cash to repurchase shares in order to conduct a stock-financed acquisition. Since the bidder firm wealth is not hurt by cash acquisitions and the combined firm wealth is, on average, better with cash, it is perplexing as to why a firm would incur additional transactions fees and most likely incur labor costs to take this extra financing step that at first glance does not appear to carry benefits.

I review the hypothesis with this question in mind. My sample is of firms which either have the cash available at the repurchase announcement or did not make a credible repurchase announcement. If they have the cash available, then according to the cash availability hypothesis they will prefer to use it if they are undervalued. Since the firm

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announcement returns should be expected. So, if firms are able to decrease the premium paid, their post

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has chosen not to use the cash for the acquisition, but rather for the repurchase, the cash-availability hypothesis suggests that the firm is overvalued. However, if the firm is overvalued it is not likely it would choose to repurchase its own stock (see Chapter 2). Thus, it is feasible that using cash directly to purchase another firm or using cash indirectly with repurchased share financing is inconsequential to the cash availability hypothesis in that both announcements are indicative of undervaluated bidder shares.

The investment opportunity hypothesis predicts that a high-growth bidder will prefer stock because it will afford the high-growth firm with future financial flexibility. This hypothesis is not applicable to cash flush firms with moderate growth. The signaling hypothesis is a little problematic in that the repurchase signals undervaluation and the subsequent stock financing signals overvaluation. Although it is unlikely that a firm sets out to send mixed signals, it is possible that a firm prefers to use stock (ie. for risk sharing and future tax benefits) and plans to mitigate the bad news of overvaluation indicated with a stock financing by offsetting with the undervaluation signal of the repurchase announcement.

The risk-sharing hypothesis is consistent with the extra financing. If a firm is concerned about the post-merger performance of the target firm then stock financing will mitigate this concern. Thus, if the target firm will represent a significant portion of the combined firm, it may be the preference of the bidder firm's managers to share the risks, even if evidence of poor stock financed acquisitions is predominant.

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returns may not be as poor.

The target firm managers may have a preference for stock financing in order to maintain some control in the merged firm.[67] Thus, if the target is large enough in comparison to the bidder and the target firm's managers have some control, they may be in the position to influence the financing decision. In the extreme, the target may be able to influence the bidder to first repurchase its shares and then to pass the shares on to the target firm's shareholders. This argument may hold for the target manager shareholders; however, the argument fails for all the other target shareholders who should prefer cash due to the higher premium. It has also been suggested; however, that the higher premium is nothing more than compensation for the forced tax consequences and thus the high premium quickly disappears net of taxes.

The control hypothesis states that if a manager desires to maintain his ownership position in the firm, he or she will prefer stock to finance an acquisition in order to maintain control. A repurchase decreases the total outstanding shares and thus serves to increase the ownership position of the non-tendering shareholders. Thus, managers with a high concern for their ownership position would favor repurchase of shares first to mitigate the loss in ownership position if a stock-financed acquisition was pursued over the preferable cash acquisition.

Pooling accounting (stock financing) and repurchasing activities are both consistent with manager objectives of increasing earnings per share. Thus, if a manager's compensation were tied to earnings per share, both repurchasing shares and stock financed acquisitions would supplement the manager's compensation. Thus, the pooling

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[67] Ghosh and Ruland, 1998.

versus purchasing hypothesis would be consistent with the doubled transactions. Furthermore, the doubled transactions may create favorable tax results. Purchase accounting creates a tax burden on the target firm. Thus, stock financing is beneficial for both risk-sharing and tax consequences. Cash financing has historically better returns. Thus, it is possible that by taking on the extra transactions the firm is taking advantage of both types of financing and entering into a win-win situation.

Finally, if it is not the method of payment that matters but only whether the acquisition is a good fit and increases the focus of the firm, then the transactions that preceded the acquisition may not be the important issue. This argument suggests that although it appears inefficient to use cash to repurchase shares to be used for the acquisition of another firm, this method of payment may not be predictive of poor post-merger stock price returns that have been documented by numerous researchers. If the bidder acquires a firm that increases its focused line of business then value should be enhanced and the method of payment is immaterial. Similarly, if the bidder attempts a diversifying acquisition, the market would be expected to respond negatively.

These studies suggest that a viable control for a value-enhancing merger versus a value-decreasing merger could be determined by whether the merger increases or maintains its focus or decreases its focus in diversification attempts. Flanagan and O'Shaughnessy (2003) use primary SIC codes to classify transactions core-related in their paper that explores which firm characteristics influence the size of acquisition

premiums.[68] Flanagan and O'Shaughnessy classify an acquisition as core-related if both the acquiring and target firms share the same three or four digit SIC code. I will separate my firms that announce repurchase intentions to conduct an acquisition as value enhancing if the firms have the same three or four digit SIC code and are thus core-related focus increasing or preserving firms. Firms will be considered focus decreasing if the acquiring and target firms do not share three or four digit SIC codes and appear un-related.

Sample

The sample of firms announcing a repurchase in order to facilitate an acquisition are collected from Securities Data Corporation's Mergers and Acquisitions database and Repurchases database. I begin by collecting all repurchase offers with an acquisition (ACQ) purpose. Financial firms (SIC codes 6000-6999) and regulated utilities (SIC codes 4910-4949) were removed because they are believed to face a different incentive structure around repurchase activity. Imposing these restrictions results in an initial sample of 103 firms with a repurchase announcement between 1995 and 2002. The sample is reduced to 96 firms with usable return information available from CRSP.

Using the same database, I searched for acquisition announcement dates one year before and one year after the sample firms' repurchase announcement and found that two-thirds (66) of the sample firms made both the repurchase and acquisition announcement on the same date. Of those 66 firms, nearly one-half (32) had announced

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[68] Flanagan and O' Shaughnessy, 2001 explore the relationship between relatedness and takeover premiums and find that acquires that are not core-related to pay very high premiums when multiple bidders are

the acquisition at a previous date in addition to the second announcement made in conjunction with the repurchase announcement. Of the firms that did not make the acquisition announcement of the same date as the repurchase announcement, ten of them made the acquisition announcement prior to the repurchase announcement and eleven made the acquisition announcement after the repurchase announcement. Subsequent to the acquisition announcement, twelve firms withdrew their announcement.

Methodology
   (*See chapter 2, page 35.*)

<u>Results</u>

   Table 3-3 presents abnormal return data for my 96 firms that announce repurchase-financed acquisitions. The returns are relative to the repurchase announcement date with the exception of Panel C, which is at an acquisition announcement date and Panel G which is at the repurchase withdrawal date. Panel A shows the full sample of 96 firms. The CARs show the generally positive abnormal returns consistent with other researchers results.

   Two-thirds of the sample firms announce the repurchase and the acquisition on the same date. The abnormal returns to this group shown in Panel B are similar, if not a little more significant then the entire sample of firms.

   Panel C is very interesting in that one-third of the repurchased-financed firms had acquisition announcements prior to making the repurchasing announcements. Thus, at the

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present. Although, the emphasis of the paper is not on the independent core-related variables, I plan to follow their procedure for defining core-relatedness by SIC codes.

time of the first acquisition announcement there would be little indication that the firms planned repurchase as part of the financing. Thus, ex ante the abnormal return reaction should be similar to all other acquisitions. Panel C, although only slightly significant, shows generally positive results, which is contrary to the prevailing documentation on acquisition returns.

Panel D is a very small group of only ten firms that made an acquisition announcement and later announced a repurchase. Panel D shows very little significance due to the small sample size.

Panel E is also a very small group. However, these eleven firms show some very significantly positive results. These firms made their repurchase announcement in advance of their acquisition announcement and have had exceptional market model value weighted CARs of 96.94 percent two-years post the repurchase announcement and 159.64 percent three-years post. The beta of this group of firms is only .68 and thus the argument of being compensated for risk does not seem viable.

Twelve of my 96 firms later withdrew their repurchase intentions. The returns of these firms are displayed in Panel F. It appears that at the initial repurchase announcement these firms enjoy similar positive reactions accorded to repurchase announcing firms. Thus, there is no indication that the market expects the later withdrawal. However, in the long run these firms do not do as well as firms that carry out the repurchase plan. Panel G presents the same sub-sample of firms at the withdrawal date.

Table 3-4 directly tests hypothesis 1 and finds that prior to the acquisition

announcement both the stock-financed and cash-financed firms show the characteristic

negative abnormal returns. The repurchase group shows no abnormal returns and the

groups are not different from each other. At the acquisition announcement event date all

groups show moderate positive abnormal returns. The most interesting results begin to

appear within 90 days of the acquisition announcement where the groups become very

different from each other. The cash-financed (-1.8 percent) and stock-financed (-6.3

percent) acquisitions show negative abnormal returns, whereas the repurchase-financed

acquisition is slightly positive (1.3 percent). This distinction continues into the long-term

with significantly negative abnormal returns for both the cash-financed (-33.4percent for

two-year post) and stock-financed (-99.7 percent for two-year post) acquisitions and

significantly positive for the repurchase-financed (11.8 percent for two-year post) returns.

Thus, firms that take on the extra transactions seem to be well-compensated for their

efforts. This table strongly supports my hypothesis. Not only do these repurchased-

financed acquisition firms not exhibit the characteristic negative abnormal returns of both

cash-financed and stock-financed, these firms show positive CARs two-years, three-years

and four-years post announcement. I attribute this to the firms reducing their tax burden

by completing a purchase accounting acquisition. Straight cash-financed acquisitions also

have this advantage; however, a cash-financed acquisition is not able to share the risk

with the target shareholders in the merged firm. Furthermore, a straight cash-financed

acquisition may have to pay a premium to target shareholders to compensate the target

shareholders with an increase in tax burden due to their most likely gain on the stock sale.[69]

Table 3-6 is a multi-model table. The five panels A-E display the coefficients for pre-announcement, at the announcement and post-announcement time periods (30 day, two-year and three-year). Four multi-variate models are displayed in each panel. Each model uses a combination of control variables (market value three-year growth, three-year sales growth, beta, earnings per share three-year growth, price to book ratio, and free cash flow) as well as the firms' method of acquisition payment. These models show a dummy variable if the acquisition was financed with a repurchase or another dummy variable if the acquisition was financed with 100 percent cash. The base case is if the acquisition is 100-percent stock financed, and thus the parameter is zero and is not shown.

Panel A shows the cumulative abnormal returns prior to the acquisition announcement. There appears to be no difference in the abnormal return performance of the sample of firms based on their method of financing their acquisitions prior to the announcement.

Panel B displays the event-date announcement CARs. At the announcement three of the models show significant positive coefficients for both cash-financed acquisitions in comparison to the base case of the stock-financed acquisition, and one model shows significant positive coefficients for the repurchased-financed acquisitions. Panel C

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[69] As an aside it may be that some firms with available cash do not take advantage of this double transactional step due to the advantage of cash-financed acquisitions being quick, allowing firms to avoid undue competition.

displays the short-term stock price reactions from two-days to 30-days post announcement. This time period's results are very similar to the announcement-event period return. However, the size-control variable; market value growth for the last three years, and the risk control variable; beta, both show negative coefficients. As shown in the first two panels, panel C also displays a very small R-square.

Panels D and E show very interesting results and also much higher R –squares (ranging between 26 and 41 percent) for the two-years and three-years post announcement, respectively. During these time periods, we find that the coefficients for the cash-financed acquisition are mixed and not significant in comparison to the stock-financed acquisition. However, in the long-term the repurchase acquisition group's coefficients become strongly significantly positive. Consistent with table 3- 4, it appears that firms that finance acquisitions with repurchased shares do very well in the long term.

Similarly to chapter 2, ExecuComp data was obtained for the three types of distinct acquisition financing groups. Data on 175 firms using only cash financing, 100 firms using only stock financing and only three firms using repurchases financing were found. Due to the extremely small sample size of the repurchasing acquisition firms, no further testing was attempted to differentiate the officers' stock ownership or options.

There was, however, information that could be obtained through the compustat database to differentiate the firm choice of acquisition financing. The mean market value of the firms, the return on assets (ROA), return on equity (ROE), net income, and free cash flows for all three groups of firms is shown in table 3-5. Firms choosing to repurchase shares to finance an acquisition are larger, have higher returns on assets and

returns on equity and have significantly higher free cash flows. Furthermore, all firms

that conduct repurchases financing have positive net incomes during the year of the

acquisition whereas; only 80 percent of the cash-financed firms and 73 percent of the

stock-financed firms can make the same claim.

Conclusion

Firms that take on the extra transactional step of repurchasing shares to finance an

acquisition are well compensated for their efforts, especially in the long run. These firms

have cash available and positive earnings but on average have negative abnormal returns

prior to their repurchase announcements. Thus, these firms are likely to be undervalued

and therefore choose this method of financing to signal undervaluation in the market

place. These firms experience risk sharing with the target firms, counteract the negative

effects of dilution by repurchasing shares first, and enjoy a tax advantage for their efforts.

My results raise the question as to why more firms do not take advantage of this

win-win situation. Aboddy, Kasnik and Williams (2000) argued that managers should

prefer pooling accounting because all else equal, purchase accounting hurts net income

and earning per share for years to come. I suggest that since management compensation

is likely tied to these performance measures, most managers do prefer pooling

accounting. However, this is shortsighted.

Table 3-2 Variable Definitions

Beta = CRSP beta.

Cash 100% = Bidding firm acquired target firm with 100 percent cash financing.

EPS growth = EPSgrow = the three-year least squares annual growth rate of Net Income before extraordinary items and discontinued operations less preferred dividend requirements (ExecuComp EPSEX3LS).

Free CF = The free cash flow concept is Operating Activities - Net Cash Flow minus Cash Dividends minus Capital Expenditures (Compustat OANCF-DV-CAPX).

Market Value = This data item provides a pre-calculated company-level market value based upon the sum of all the company's trading issues multiplied by their respective closing price (Compustat PRCC * CSHO) and is reported in millions of dollars.

Market Value3 = The 3-year least squares annual growth rate in market value (ExecuComp MKTVAL3LS).

NI = The income or loss reported in millions of dollars by a company after expenses and losses have been subtracted from all revenues and gains for the fiscal period including extraordinary items and discontinued operations (Compustat annual data item A172).

Price to book = The market value of assets divided by the book value of assets, where the market value of assets is the book value of assets plus the market value of equity (Compustat item #24 times Compustat item #25) minus the book value of equity.

ROA = Return on Assets is Income Before Extraordinary Items - Available for Common, divided by Total Assets, which is defined as the sum of current assets, net property, plant, and equipment, and other non-current assets. This is then multiplied by 100 (Compustat IBCOM/AT)*100.

Repurchase = Bidding firm acquired target firm with repurchased shares.

ROE = Return on Equity is Income Before Extraordinary Items - Available for Common, defined as income before extraordinary items and discontinued operations less preferred dividend requirements, but before adding savings due to common stock equivalents, divided by Common Equity - Total, which is defined as the common shareholders' interest in the company. The result is multiplied by 100 (Compustat IBCOM/CEQ)*100).

Sales3 = The 3-year least squares annual growth rate in sales (ExecuComp SALES3LS).

Stock 100% = Bidding firm acquired target firm with 100 percent stock financing.

Table 3-3 Repurchase to Fund an Acquisition

Cumulative Abnormal Market Model Returns (CARs) for both equal and value weighted portfolios of firms announcing a repurchase from 1995-2002 for the purpose of conducting an acquisition.

Panel A: All Firms Announcing Repurchase Plans to Fund an Acquisition. (n = 96, mean beta = 0.75). Abnormal returns are relative to the repurchase announcement date.

Window	Market Model		Scholes-Williams	
	Equal Wt	Value Wt	Equal Wt	Value Wt
-30-2	-2.84%	-2.67%	-1.14%	-3.64%
-1,+1	1.57% **	1.68% ***	1.67% **	1.56% **
+2,+30	0.91%	1.97%	1.05%	1.27%
+31,+504	29.42% ***	30.47% ***	49.41% ***	17.94% ***
+31,+756	41.49% ***	45.92% ***	72.15% ***	26.75% ***

* significant at .10, ** significant at .05, *** significant at .01

Panel B: This panel is a sub-sample of panel A. This sub-sample includes the firms making both announcements on the same date. (n = 66, mean beta = 0.92)

Window	Market Model		Scholes-Williams	
	Equal Wt	Value Wt	Equal Wt	Value Wt
-30-2	-1.05%	-0.39%	-1.42%	-0.80%
-1,+1	2.31% ***	2.36% ***	2.29% ***	2.25% ***
+2,+30	2.40%	3.22%	2.02%	2.73%
+31,+504	34.20% **	34.78% **	32.22% ***	30.82% **
+31,+756	46.11% **	50.36% ***	42.37% ***	44.05% ***

* significant at .10, ** significant at .05, *** significant at .01

Panel C: This panel is a sub-sample of panel B. The repurchase and the acquisition were announced on the same date, however the acquisition also had an earlier announcement. (n = 32, mean beta = 0.90)

Window	Market Model		Scholes-Williams	
	Equal Wt	Value Wt	Equal Wt	Value Wt
-30-2	3.98%	4.65% *	3.64%	3.82%
-1,+1	1.27% *	1.28% *	1.18% *	1.43% *
+2,+30	1.40%	0.16%	0.64%	0.27%
+31,+504	15.11% *	16.68% *	13.18% *	13.93%
+31,+756	30.72% **	32.77% **	28.93% **	29.81%

* significant at .10, ** significant at .05, *** significant at .01

Table 3-3 Repurchase to Fund an Acquisition (continued)

Panel D: This is a sub-sample of firms that only announced their acquisition intentions in advance of their repurchase announcement. The returns are shown relative to the repurchase announcement. (n=10, mean beta = 0.76)

Window	Market Model		Scholes-Williams	
	Equal Wt	Value Wt	Equal Wt	Value Wt
-30-2	-6.16%	-3.01%	-4.52%	-2.82%
-1,+1	0.83%	1.42%	0.89%	1.35%
+2,+30	-4.59%	-1.12%	-4.47%	-1.46%
+31,+504	-1.39%	15.07%	1.95%	16.96%
+31,+756	1.17%	24.83%	6.42%	29.59%

* significant at .10, ** significant at .05, *** significant at .01

Panel E: This sub-sample of firms made acquisition announcements and a subsequent repurchase announcement. The returns are shown relative to the repurchase announcement. (n=11, mean beta 0.68)

Window	Market Model		Scholes-Williams	
	Equal Wt	Value Wt	Equal Wt	Value Wt
-30-2	-1.50%	-1.86%	-2.05%	-2.66%
-1,+1	2.88%	3.08%	2.89%	2.97%
+2,+30	11.86%	10.17%	12.29% *	11.01%
+31,+504	93.94% ***	96.94% ***	91.29% ***	98.81% ***
+31,+756	158.45% ***	159.64% ***	151.81% ***	163.23% ***

* significant at .10, ** significant at .05, *** significant at .01

Table 3-3 Repurchase to Fund an Acquisition (continued)

Panel F: A small sub-sample of firms announced repurchases and later withdrew. This is at the repurchase announcement date. (n=12, beta = 1.18)

Window	Market Model		Scholes-Williams	
	Equal Wt	Value Wt	Equal Wt	Value Wt
-30-2	2.18%	1.69%	2.93%	1.42%
-1,+1	2.00% **	1.62% *	2.04% **	1.64% *
+2,+30	1.39%	0.24%	1.00%	0.11%
+31,+504	-18.90%	-19.49%	-17.79%	-21.54%
+31,+756	-22.62%	-32.44%	-20.08%	-34.58%

* significant at .10, ** significant at .05, *** significant at .01

Panel G: A small sub-sample of firms announced repurchases and later withdrew. This is at the withdrawal date. (n=12, beta = 0.92)

Window	Market Model		Scholes-Williams	
	Equal Wt	Value Wt	Equal Wt	Value Wt
-30-2	0.46%	-0.88%	0.92%	-0.44%
-1,+1	-1.37% *	-1.30% *	-1.34% *	-1.22% *
+2,+30	0.69%	1.95%	0.70%	1.66%
+31,+504	6.75%	8.86%	3.07%	8.95%
+31,+756	5.32%	5.10%	3.26%	5.71%

* significant at .10, ** significant at .05, *** significant at .01

3-4   Comparison of Acquisition with and without a Repurchase

CARs using the market model are shown for firms announcing an acquisition from 1995 – 2002. The firms are separated into firms that also announced a plan to repurchase stock in conjunction with the acquisition announcement (Repurchase) and firms that financed the acquisition with 100 percent cash (Cash) and firms that financed the acquisition with 100 percent stock (Stock). ANOVA differences follow for the group differences of the abnormal returns for the seven event time periods: 30 days to two days prior to the acquisition announcement (-30, -2), the event period (-1, +1), 30 days post-announcement (+2, +30), 90 days post-announcement (+31, +90), one-year, two-years, and three-years post-announcement (+31, +252), (+31, +504), (+31, +756), respectively.

	Repurchase		Cash 100%		Stock 100%		P-value
Beta	0.98		1.12		1.24		
n	436		9205		4497		
(-30,-2)	0.000		-0.005	***	-0.006		0.960
(-1,+1)	0.005	*	0.011	***	0.009		0.449
(+2,+30)	0.013	*	-0.018	***	-0.063	***	0.000
(+31,+90)	-0.018	***	-0.041	***	-0.102	***	0.000
(+31,+252)	0.009		-0.158	***	-0.441	***	0.000
(+31,+504)	0.118	***	-0.334	***	-0.997	***	0.001
(+31,+756)	0.199	***	-0.417	***	-1.355	***	0.199

Table 3-5   Acquiring Firm Characteristics

Data is obtained from Compustat for market value, return on assets, return on equity, net income and free cash flows for firms choosing to acquire firms by financing with repurchases, cash, and stock. Mean values are shown.

	Market Value	ROA	ROE	NI	Free Cash Flow
Repurchase	14,327	3.6	15.2	1,122	1,962
Cash 100%	9,425	1.3	1.2	261	164
Stock 100%	6,955	-175.2	-5.3	145	48
p-value	0.004	0.277	0.353	0.000	0.000

Table 3 - 6 Market Reaction to Type of Financed Acquisition Announcement

The acquisitions are financed by a repurchase, 100 percent stock or 100 percent cash. Shown are the dummy variables if the acquisition was financed with a repurchase and financed with cash, otherwise stock. (t-statistics in parentheses; ***, **, and * denote significant levels at 1%, 5% and 10% levels). Models include firms announcing acquisitions from 1995 to 2002. $Return_{it} = b_0 + b_1 X_{it} + b_2 year\ Indicators + e_{it}$

A. Return for (-30, -2)

Variable	(1)		(2)		(3)		(4)	
Intercept	0.01705		0.02048		-0.02080		0.00551	
	(0.84)		(1.03)		(-3.52)		(0.76)	
Dummy if cash	-0.00939		-0.01214		0.02319	***	-0.01197	
	(-.0.60)		(-0.78)		(4.52)		(-1.58)	
Dummy if rep.	-0.06016		-0.06254		0.01239		-0.00790	
	(-1.00)		(-1.05)		(1.14)		(-0.42)	
Mkt Val 3 year	0.00015		0.00014		0.00004		-0.00008	
	(0.97)		(0.91)		(1.37)		(-1.50)	
Sales 3 year	-0.00019		-0.00017		-0.00007		0.00006	
	(-0.66)		(-0.61)		(-0.97)		(0.94)	
Beta	-0.02375	**	-0.02517	**	0.00081			
	(-2.01)		(-2.17)		(0.30)			
EPS 3 year	-0.00020		-0.00020	*				
	(-1.63)		(-1.65)					
Price/Book	0.00023		0.00012					
	(0.37)		(0.19)					
Free cash flow	0.00000							
	(-0.25)							
R-square	0.0121		0.0126		0.0178		0.0017	
n	782		793		1235		2664	

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Appendices

Appendix A: T-Test

The time series standard deviation method (t-test) calculates a single variance estimate for the entire portfolio. Its drawback is that it does not take into consideration unequal return variance across securities. However, on the other hand, it does avoid potential problems of cross-sectional correlation of security returns. The estimated variance of AAR_t is

$$\sigma = \frac{\Sigma\,(AA\,R_t - AAR_{mean})^2}{D-2}$$

where D = estimation period and

$$AAR_{mean} = \frac{\Sigma\,AA\,R_t}{D}$$

and the portfolio test statistic for day t is

$$t = \frac{AA\,R_t}{\sigma_{AAR}}$$

and the test statistic for $CAAR_{T1T2}$, assuming time-series independence is

$$t = \frac{CAA\,R_t}{(T_2 - T_1 + 1)^{1/2}\,\sigma_{AAR}}$$

In order to calculate the z test statistic, it is assumed under the null hypothesis that Ajt has mean zero and variance $\sigma^2 A_{jt}$. The maximum likelihood estimate of the variance is

$$S^2_{Ajt} = S^2_{Aj}\ 1 + D_j + \quad \frac{1}{\Sigma}\ \frac{(R_{mt}-R_m mean)^2}{(R_{mt}-R_m mean)^2}$$

where
$$S^2_{Ajt} = \Sigma\,A^2_{jk}\,/\,(D_j - 2)$$

R_{mt} is the observed return on the market index on day t, $R_m mean$ is the mean market return over the estimation period and D_j is the number of non-missing trading day returns in the D-day interval. The standardized abnormal return is defined as

$$SAR_{jt} = A_{jt}/S_{Ajt}$$

Under the null, each SAR_{jt} follows a student's t distribution with D_j-2 degrees of freedom. Summing SAR_{jt} across the sample

$$TSAR_t = \Sigma\,SAR_{jt}$$

and the expected variance of $TSAR_t$ is

$$Q_t = \Sigma \, (D_j - 2) \, / \, (D_j - 4)$$

and the test statistic for the null hypothesis that $CARR_{T1T2} = 0$ is

$$Z_{T1,T2} = 1 \, / \, N^{1/2} \, \Sigma \, Z_{T1T2},$$

where

$$Z_{T1,T2} = 1 / \, Q_{T1,T2}^{1/2} \, \Sigma \, SAR_{jt}$$

and

$$Q_{T1T2} = (T_2 - T_1 + 1) \, (D_j - 2) \, / \, (D_j - 4)$$

About the Author

Robin Wilber received a Bachelor's Degree in Civil Engineering from the University of Florida in 1980 and a M.B.A. from the University of South Florida in 1986. She worked as an engineer and a corporate controller until she entered the Ph.D. program in Finance at the University of South Florida.

Ms. Wilber began teaching many finance courses as a Ph.D. student and also served one year as an instructor at the University of South Florida at St. Petersburg. Ms. Wilber is currently an Assistant Professor of Finance at Niagara University.