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Betcha can't acquire just one: merger programs and compensation

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Abstract

This paper examines the evolution of merger programs, that is, repeated acquisitions by the same firm. Most acquisitions are made by firms with merger programs. Acquisitions that are part of programs are different from one-off acquisitions both in the effect on CEO compensation and in the reaction of the stock market. CEO compensation rises more after growth from program acquisitions than after internal growth or growth from one-off acquisitions. During a merger program, the increase in CEO compensation is much larger when the acquirer's stock price is increasing than at other times. This is not true for other types of growth. Merger programs also show a distinct evolution. Initially, program mergers are received better by the stock market than are one-off mergers. As a program progresses, however, the acquisitions tend to have lower announcement reactions and long-run returns. In addition, the effect on CEO compensation is smaller for mergers later in a program. There is evidence that some firms are predisposed to make acquisitions. Firms that have made acquisitions in the recent past *and* that already pay their CEOs well are more likely to make future acquisitions. This suggests that there may be a managerial motivation for merger programs: firms where CEOs can expect to get large compensation increases from acquisitions are more likely to have merger programs.

Betcha can't acquire just one: merger programs and compensation

I. Introduction

There was more merger activity in the last decade of the twentieth century than in any other period. In 2000, firms comprising over one third of the value of U.S. equity markets were involved in an acquisition.[1] This marked the end of one of the two biggest merger waves in U.S. history, the other having occurred in the 1980s. While there have been a number of attempts to explain why and when firms merge, one aspect that has received little attention is that many firms are repeat acquirers. A majority of the acquisitions in the 1990s were made by only 20 percent of acquirers (six percent of the firms in the CRSP data).[2] This paper uses these frequent acquirers to illuminate possible motivations for mergers and to ask whether these acquirers are like firms that make one-off acquisitions.

At the same time as the recent merger waves there was a rapid increase in CEO compensation. In 1993, the average total compensation for CEOs at firms in the S&P 1500 was $2.0 million. By 2000, this figure had risen to $6.7 million. We examine how the interplay between mergers, shareholder value, and compensation is affected by frequent acquisitions.

As an example of the issues involved, consider the case of A. H. Belo Corporation, an owner of newspapers and television stations. Belo announced seven acquisitions between 1994 and 2000, including six where the target was at least five percent the size of Belo. During this period, the CEO of Belo saw his total annual compensation increase from $1.8 million to $4.7 million. Did the acquisitions affect the compensation of Belo's CEO, or did the desire to increase compensation affect the decision to acquire? The answers may be complicated by the lack of a simple relationship between compensation and merger activity. For example, the increase in compensation for Belo's CEO was more rapid for the early acquisitions. Compensation rose to $3.8 million by the end of 1996, halfway through the merger program. In this paper, we explore whether this pattern of compensation change is common. Note that shareholders were not as happy with the acquisitions as Belo's CEO. During this period, the return on Belo shares was 31 percent while the market as a whole went up almost 200 percent.

To capture firms that are repeat acquirers, we define a merger program as a series of two or more major acquisitions by a single firm with a gap of no more than two years between acquisitions. By examining how and when merger programs evolve, we get a good window into the motivations for acquisitions. On average, a merger program has four major mergers, but the longest program in our sample has 18 major mergers (and 18 smaller mergers). Over the length of a program, we find that the quality of mergers decreases. The cumulative abnormal returns

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[1] We use the terms merger and acquisition interchangeably.

[2] Asquith, et. al. (1983) find that 45 percent of acquirers in their sample made at least four acquisition attempts in a 17-year period.

(CAR) to the merger announcement and the buy-and-hold returns (BHAR) in the year following an acquisition are both lower for mergers that are later in a program. The final mergers in a program are likely to have a negative CAR and a negative BHAR. This brings up an issue we address in this paper: whether firms – or, more concretely, their CEOs – use programs primarily to increase returns to shareholders or for other reasons such as to increase the private benefits of the CEOs.

A focus on merger programs allows us to add depth to discussions on the reasons for mergers, including the role of agency problems. Academic studies and general media articles suggest private benefits play an important role in acquisition decisions (e.g., Morck, et. al., 1990). CEOs of firms that get larger by making acquisitions can gain big increases in compensation or bonuses, even if the acquisitions do not benefit their shareholders (Bliss and Rosen, 2001; Grinstein and Hribar, 2004). Consistent with this, there is evidence that the compensation committees of Board of Directors often look to asset size for a guide in setting CEO compensation (Murphy, 1999). This offers the private-benefit hungry CEO a potential way to increase compensation rapidly. By engaging in a merger program, the CEO can add a significant amount of assets and argue that her compensation should increase to match the asset growth.

A main goal of this paper is to examine how CEO compensation increases change over the life of a merger program. This is a complicated issue, since it combines the quality of acquisitions during a merger program with the choices of how to compensate CEOs made by Boards of Directors. It may be more difficult to justify a large merger-related increase in compensation for a CEO who has just had a similar increase (or increases) in recent years, even if all the mergers increased shareholder value. We examine how the change in a CEO's compensation depends on asset growth and stock performance. To focus on mergers, we divide asset growth into internal growth and growth through acquisition, and further divide acquisition growth into that from one-off mergers and from merger programs. These variables are then interacted with measures of performance.

We find that mergers that are part of a program contribute significantly more to compensation then do one-off mergers or internal growth, holding stock return constant. But, this effect is not uniform across programs or over a program. The relationship between compensation changes and asset growth for program mergers depends on how the acquiring firm's stock is doing relative to the market. When stock prices are decreasing relative to the market, program mergers increase compensation by about the same amount as internal growth does. On the other hand, when returns are increasing, compensation increases at a much faster rate for assets acquired in program mergers that for other asset growth. Thus, CEOs do better when their firms do better. In addition, the sensitivity of compensation to the assets acquired in acquisitions decreases as a merger program evolves. That is, if a firm is doing better than the market, acquiring a $1 billion firm has a much bigger effect on a CEO's compensation if the acquisition is the first or second in a program rather than the fourth or fifth.

The finding that acquiring as part of a merger program leads to compensation increases does not necessarily mean that the desire for increased compensation leads a CEO to make frequent acquisitions. We use a merger prediction model to indirectly address this issue. The evidence is consistent with acquisitions, at least in part, being made to increase private benefits. We use our model of compensation to predict the change in CEO compensation as a function of asset growth, stock performance, and other controls. The difference between the actual and predicted changes could signal how likely Boards are to reward a CEO for a future acquisition. Consistent with this, we find that firms where the difference between the actual and predicted changes in CEO compensation is largest have a higher probability of making a future acquisition. But this result is entirely due to firms with an ongoing merger program. This is more evidence that mergers during programs are different than one-off mergers. It suggests that CEO compensation, and the ability to get large compensation increases, may play a role in merger programs.

The remainder of the paper is as follows. Section II reviews the existing literature and what it has to say about merger programs. The third section defines a merger program and discusses the data we use. This section includes some evidence on the evolution of merger programs. Then, Section IV analyzes the effect of mergers on CEO compensation. Section V sets up and tests the merger prediction model to help examine the effect on compensation on mergers. Finally, Section VI concludes.

II. Literature review

Mergers and compensation are two well-studied areas of corporate finance. The merger literature attempts to explain, among other things, why firms make acquisitions. We examine mergers from the point of view of the acquirers, dividing previous studies into three groups. First, the neoclassical theory says that mergers allow firms, by combining, to take advantage of synergies. In the second group of papers, mergers reflect agency problems between managers and shareholders. Finally, some studies look at whether mergers result from managers or shareholders misvaluing the benefits of two firms combining. We discuss papers from each of these areas with an eye toward what we can learn about merger programs. Then, we briefly cover the few studies that explicitly examine merger programs. Finally, we look to the compensation literature to learn which factors influence CEO compensation.

The neoclassical theory of mergers implies that firms – acting in the interests of shareholders – only make acquisitions that increase their value. Under this theory, firms may make multiple acquisitions because a series of unrelated synergistic opportunities arise. What appears to be a merger program could be just a group of independent acquisitions. This would imply that there is no difference between mergers in a "program" and other mergers, and no expected difference among mergers within a program.

Another possibility consistent with the neoclassical theory is that some mergers are an efficient response to changed circumstances. There is evidence that mergers tend to cluster, with different industries having different patterns of acquisition activity (Mitchell and Mulherin, 1996; Andrade and Stafford, 2004). Notably, merger activity increases after economic shocks such as deregulation and technological changes. This suggests that mergers might reflect firms adapting to changed economic conditions. If mergers are a response to economic shocks, then merger programs could arise naturally. For example, in the 1980s and 1990s, deregulation meant that a banking organization could have banks in multiple states rather than just one. This led many banking organizations to acquire a series of banks in different states, something not possible earlier. Deregulation had a similar effect in other industries, for example, making it permissible for media firms to expand into more markets and areas than previously. An easy way to do so is through merger programs. Thus, merger programs are more likely to arise during periods following shocks. Under the neoclassical hypothesis, these mergers would create value for the acquiring firms, although there is no reason to expect mergers that are part of a program to have different characteristics than other mergers.

Managers may not act in the interests of their shareholders when making acquisition decisions. A number of studies propose managerial motivations for some mergers (e.g., Morck, et. al., 1990; Gorton, et. al., 2002). Mergers offer managers an easy way to increase private benefits such as compensation (Bliss and Rosen, 2001), including merger bonuses (Grinstein and Hribar, 2004). So, for example, deregulation gave firms in several industries the ability to expand rapidly. We explore whether the expansion was in the interests of the acquirers' shareholders or their managers. It can be difficult and costly for shareholders to stop their managers from making acquisitions, and so managers may have the freedom to make negative NPV acquisitions as long as the acquisitions do not harm acquiring shareholders too much.[3] Consistent with this, there is evidence that merger bonuses are related to managerial power but not to deal performance (Grinstein and Hribar, 2004). Agency problems can lead in a straightforward manner to merger programs: Managers that care more about private benefits relative to shareholder wealth are more likely to make multiple acquisitions. Thus, acquisitions during programs are likely to be worse than other acquisitions, and may harm acquiring firm value. In addition, not all managers will be equally likely, or equally able, to benefit from acquisitions. Managers that benefit more from acquisitions, all else equal, should be more likely to make them.

In addition to any synergies and agencies problems, mergers may result from the systematic misvaluation of either stock prices or potential synergies. Managers may make value destroying acquisitions because of hubris (Roll, 1986). They wrongly believe that they can create synergies.

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[3] Bebchuk and Fried (2003) review evidence that Boards of Directors grant CEOs great discretion in areas such as compensation.

Hubris can lead to the same set of problems as managers that put a heavy weight on private benefits.

Markets may also overvalue firms at times, giving managers an incentive to make acquisitions, especially using overvalued stock (Shleifer and Vishny, 2003). Acquiring shareholders can benefit from acquisitions as long as the stock of the acquirer is more overvalued than that of the target. While the misvaluations persist, firms should keep making acquisitions. These acquisitions should benefit shareholders, at least in the long run.[4] As with the neoclassical theory, there is no reason to believe that merger programs affect compensation any differently than one-off mergers.

The flip side of this is that when the market is overvaluing the synergies from mergers (a "hot" merger market), managers have an incentive to make more acquisitions (Rosen, 2006). A manager, especially one concerned with private benefits, may use market misvaluation, as a cover to make a series of acquisitions. Under these circumstances, program acquisitions may look better in the short run than other acquisitions, but will look worse in the long run.

The empirical evidence on value creation in mergers is mixed, but there are some broad conclusions that can be drawn. A number of papers look at the change in the market value of merger partners at the time a merger is announced. Early studies of announcement effects found that mergers generated synergies that were split between the acquiring and target firms (e.g., Bradley, et. al., 1988). However, the announcement returns to acquiring firm shareholders have declined over time (Jarrell, et. al., 1988). Mergers since the 1980s do not appear to have created wealth for acquiring firm shareholders (Jarrell, et. al., 1988; Andrade, et. al., 2001; Moeller, et. al., 2004). There is some evidence that the long-run returns to mergers may be negative (Loughran and Vijh, 1997; Agrawal and Jaffe, 2002).[5] Overall, these papers do not provide much support for the neoclassical theory. They are consistent with some aspects of agency theory and misvaluation. We add to this literature by focusing on merger programs. This allows us to take advantage of the fact that a single firm is making a series of acquisitions.

A small number of studies examine firms that make multiple acquisitions. Schipper and Thompson (1983) find that the announcement of a merger program generates a positive cumulative abnormal return (CAR), on average. Regulatory changes that reduce the value of (future) mergers have a negative impact on firms with programs. This indicates that the market at least partially prices future merger activity. However, there is evidence that the market does not

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[4] Merger waves can also occur when targets systematically overvalue merger synergies (Rhodes-Kropf and Viswanathan, 2003). In this case, mergers create value for acquiring firm shareholders. For the purpose of our paper, however, there is no reason to expect merger programs to be associated with this sort of misvaluation.

[5] This conclusion, which is based on long-run stock returns, is controversial, see Mitchell and Stafford (1998) who find no long-run drift. Studies that look at accounting data find mixed results (Healy, et. al., 1992, find improvements while Linn and Switzer, 2001, do not).

fully price future mergers (Asquith, et. al., 1983; Malatesta and Thompson, 1985). Our analysis extends and updates these previous studies although we do not explicitly address the issue of whether the market partially prices merger programs at the time of the announcement (as in Schipper and Thompson). Instead, as discussed in the next section, we look at merger announcements, picking up the reaction to the part of a program that is unanticipated by markets.

One focus of our study is the evolution of merger programs. Thus, we are interested in how mergers early in a program differ from those that occur later. The evidence on the evolution of a program is limited and mixed. Asquith, et. al. (1983) finds no important difference among the CARs for the first four mergers in a program while Fuller, et. al. (2002) find the first acquisition has a higher CAR than the fifth and subsequent acquisitions. We address this issue more explicitly than the previous studies do by examining both the CAR and the post-announcement return.

Many studies have found that CEO compensation is influenced by both stock market performance and firm size (see, e.g., Murphy, 1999, for a review of the literature). Several studies examine the impact of mergers on compensation and vice versa. As discussed above, there is evidence that as firms grow larger, CEO compensation generally rises, whether the growth is internal or through acquisition (Bliss and Rosen, 2001). Part of this may be due to the frequency of bonuses following mergers (Grinstein and Hribar, 2004). The likelihood of receiving a bonus is negatively correlated with the CAR for the merger announcement, consistent with a disconnect between bonuses and shareholder value (Grinstein and Hribar). We extend this literature by comparing compensation growth from mergers during a program to that from one-off mergers. We also examine the evolution of compensation changes over the life of a merger program. This allows us to see how private benefits might offer CEOs incentives to start and stop merger programs.

There is also evidence that compensation may affect acquisition decisions. Firms where managers receive a higher proportion of equity-based compensation make better acquisitions (Datta, et. al, 2001). We ask whether compensation also affects the likelihood of acquisition, and whether this in turn depends on whether firms have a merger program.

III. Merger programs

We analyze merger activity during the period 1992 – 2001.[6] Our first step is to define a merger program. Many firms make multiple acquisitions as part of a broad strategic plan. We call two mergers part of the same program if the second is announced within two years of the first announcement and both targets are at least five percent as large as the acquirer is. A firm may have more than one merger program during the sample period.

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[6] Results are similar when we extend the start date back to 1986. We use the shorter period here because of limitations in the compensation data.

By defining merger programs using actual acquisition activity rather than announced program intentions, we are able to capture a larger number of programs. For example, Boston Scientific, a medical devices company, made a series of acquisitions in the 1990s. The only announcement they made prior to their first merger was a statement by an executive of the company that he "wouldn't be surprised" if they made some acquisitions.[7] It is difficult to know, except by looking ex post, whether this should be classified as the beginning of a merger program. In the other direction, Anheuser Busch filed a shelf registration with the SEC in 1995, announcing that the facility was dedicated toward acquisition. Yet they made no major acquisitions over the next several years.[8] Should this be classified as the start of a merger program? Since we do not focus the information contained in the announcement of a program (as Schipper and Thompson, 1983, do), we avoid these problems by defining merger programs based on activity.

Using acquisition activity also helps us with setting an end date for a merger program. It would be nice if firms announced that acquisition activity was ceasing, but that is rare. The end of a program may not be the result of an explicit decision not to make any acquisitions. For example, Lomak Petroleum engaged in a merger program in the 1990s, with their last major acquisition in 1996. During their program, Lomak stated that they expected "growth to be driven principally by a combination of acquisitions and development and, to a lesser extent, exploration."[9] In the year of their last acquisition, their strategy changed to "increase [their] asset base, cash flow and earnings through a balanced strategy of development, exploration and acquisition activities in core operating areas," then to "strategic acquisitions" the next year, and finally to "low-risk acquisition and development."[10] Even well after their last merger, Lomak still listed acquisition (albeit low-risk acquisition) as a strategic goal. This illustrates how difficult it can be to pin down an end date for many programs. For this reason, we say that a merger program ends when a firm does not announce an acquisition for two years, rather than basing the end on an announcement by a firm.

While our focus is on mergers that are announced between 1992 and 2001, we need to look beyond these endpoints to collect information on merger programs.[11] A merger announced in 1992 might be part of a merger program begun in 1990 or earlier. We also want to identify whether a merger in 2000 is the last in a program. For these reasons, we use mergers announced between 1981 and 2002 to define programs (although we do not use mergers outside the sample

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[7] As quoted in Dow Jones News Service, February 3, 1993.

[8] Anheuser-Busch did buy a majority interest in a Chinese Brewery in early 1995.

[9] Annual report, 1995.

[10] 1996, 1997, and 1998 Annual Reports.

[11] We use the announcement dates in the SDC database. Fuller, et. al. (2002) find that the SDC announcement date is within two days of the announcement date found by a search of other sources for each of the 500 mergers they examined.

period for our analysis). This helps ensure that what we call the first and last mergers in a program actually are.[12]

Our merger data comes from the Securities Data Corporation (SDC) database. SDC includes full and partial acquisitions of public firms, private firms, and subsidiaries. We define a merger as an acquisition of equity where one firm purchases at least 50% of another and, after the purchase, the bidder owns at least 90% of the target. Thus, we do not include gradual acquisitions, where a bidder establishes a toehold and then slowly increases its ownership until it takes over control of the target. However, our definition does allow the acquisition of a subsidiary, as long as it meets the other criteria we set.

Many of the mergers in the SDC database involve a target that is much smaller than the bidding firm. It is unlikely that such an acquisition would have a material effect on the bidder. To concentrate on the mergers most likely to have a significant effect on the bidding firm, we require that the target be at least five percent of the bidder's size when we define a program. By focusing on significant mergers only, we may miss some merger programs that involve the frequent acquisition of firms that are very small relative to the acquirer. Still, we count all acquisitions for purposes other than defining a program.

To measure the relative size of the target and the bidder, we calculate the ratio of the market value of the target to the market value of the bidder. If we cannot find a market value for the target (most targets are not publicly traded), we use the price paid in the acquisition as a proxy for it. When we cannot find the price paid in the acquisition, we use the book values of equity for both the target and the bidder to estimate relative size.

The merger data is matched with accounting data from Compustat, market data from CRSP, and executive compensation data from Execucomp. The data source that most shapes the sample is Execucomp. Execucomp has data on the 1500 largest public firms from 1992 on (although there are few observations for 1992).[13] Thus, a sample that includes compensation data from Execucomp is restricted to relatively large firms and to the 1990s. This leaves us with 2,222 firms.

To give some background for the discussion of mergers and compensation, we examine mergers that are part of a program and compare them with one-off mergers. We include all acquisitions where the target was at least five percent of the size of acquirer and that were announced during 1993–2001 by firms that ever appear in our sample. Panel A of Table 1 gives summary statistics for all mergers, acquisitions that are part of merger programs and, one-off mergers. Whether the sample statistics can be interpreted to say that mergers add to the acquiring firm's shareholder value depends on the proxy used for the value created. Using the stock market reaction to a merger announcement, measured using the cumulative abnormal return (CAR),

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[12] This means that there may be only one merger in a program that is part of our sample period.

[13] We drop a small number of observations where the ownership share of the CEO is above 50%.

mergers increase shareholder wealth.[14] However, looking over a longer horizon to include some post-announcement results gives a mixed picture. We measure that stock market performance after a merger announcement using the buy-and-hold return (BHAR) for the one-year period starting two days before the merger is announced.[15] The BHAR has a positive mean, but a negative median. This indicates that the median acquirer's shareholders gets nothing significant from a merger, although the average value is positive. From our perspective, however, we want to know about differences across types of mergers. We start by comparing the over 60 percent of mergers that are part of programs to one-off mergers.

There are significant differences between the stock market performance of firms making one-off mergers and those acquiring as part of a program. The CAR is significantly larger for firms with merger programs. This may occur because firms with merger programs seem stronger. Stock market performance heading into a merger, as measured by the buy-and-hold return for the year ending three days before merger announcement (RUNUP), is better for firms with merger programs. On the other hand, the accounting return, as measured by the return on assets (ROA), and the market-to-book ratio (MARKET-TO-BOOK) are lower in the year prior to the merger for firms with merger programs.

Mergers that are part of a program are generally made by larger firms than those that make one-off acquisitions (as measured by LGTA, the log of total assets) and more leveraged firms (lower equity-to-asset ratio, EQ/TA). However, the summary statistics for merger programs in Panel A include all sample mergers that are part of a program. Data for mergers that are not the first in a program include the size increases and leverage changes attributable to the prior mergers. This may explain why firms in programs are larger at the time of their mergers than other acquirers. It may also explain the post-announcement stock performance results. The BHAR is similar for one-off and program mergers. As we see, however, this masks differences across the mergers in a program.

Since firms change over the life of a merger program, the best way to compare those firms to firms making one-off acquisitions may be to focus on the first acquisition in a program. Panel B of Table 1 compares one-off mergers to the first acquisition of a merger program. Here we require a program to have at least four mergers, although the results are similar for shorter programs. As with the findings in Panel A, the CAR for a program merger is significantly larger than for a one-off merger. However, the difference is much larger than earlier. Also, the post-

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[14] The CAR is the return of the announcing firm minus the return on the CRSP value-weighted index for days –2 to +2. The use of the five-day window for SDC data is discussed in Fuller, et. al. (2002). Results are similar for other window sizes.

[15] Formally, BHAR $= \prod \dfrac{1+R_{i,\tau}}{1+R_{index,\tau}} - 1$, where $R_{i,\tau}$ is the return on the acquiring firm's stock, $R_{index,\tau}$ is the return on the CRSP valued-weighted index, and τ runs from the two days before the announcement to the end of year t. Note that the BHAR contains the announcement period in the CAR.

merger performance of firms with merger programs is better than that of firms with one-off mergers. This, of course, might be because strong post-merger performance makes a subsequent acquisition more likely.

Panel C of Table 1 shows the evolution of merger programs. For programs with at least four mergers, we break the program into four parts: the first merger, intermediate mergers (those not in the other categories), the penultimate merger, and the last merger.[16] The market reaction to the mergers declines over the life of an average program. The median CAR decreases from 2.83% at the start to –0.31% at the end while the median BHAR decreases from 10.96% to –16.29%. If we assume that the return to an acquisition (to the acquiring firm's shareholders) can be proxied by the BHAR, then (at least) the last two mergers in a program are bad for shareholders. Most of the other characteristics presented in Panel C remain about the same over the life of a program, while asset size increases as is predictable. One interesting fact is that the post-merger performance falls by more than the pre-merger performance. One might think that pre-merger performance and the BHAR should move somewhat in tandem, since what is after one merger is likely before another. However, it turns out that the firms time their announcements. If their stock price falls after a merger announcement, a firm often waits until the price starts to rise again before announcing another acquisition. Also, if the price does not rise, then the firm is less likely to make another acquisition. This is consistent with the very low BHAR after the last acquisition announcement.

The univariate results suggest that mergers during a program are different from one-off mergers and that mergers at the start of a program are different from those at the end. These results are robust to including a larger sample of mergers. If we extend the time horizon or include firms too small to be in the Execucomp sample, the patterns are, if anything, stronger.

IV. The effect of mergers on compensation

If the quality of mergers declines over the evolution of a program, why do firms continue programs? There is evidence that managers may make acquisitions to benefit themselves at the expense of their shareholders (e.g., Morck, et. al., 1990). This section examines how CEO compensation and ownership are related to acquisition decisions and merger programs. A CEO's compensation and ownership may affect her decision to make an acquisition or engage in a merger program. We extend the finding that acquisitions increase CEO compensation (Bliss and Rosen, 2001) by exploring whether mergers that are part of a program affect compensation differently than other mergers.

Our measure of compensation is total compensation, which includes salary, bonus, long-term incentive payments, the value of restricted stock plus options granted during the year, and all

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[16] Note that not all the mergers in a program may be during the sample period. This is why, for example, the number of observations in a program is different for the various categories.

other payments to the CEO (TDC1 in the Execucomp database). Total compensation is $4.92 million (2001 dollars) for the average CEO in our sample while the percentage of a firm owned by its CEO averages 4.67%. Among CEOs with acquisitions in the prior year, compensation is higher while ownership is lower.

We want to examine how acquisitions change CEO compensation. Compensation is affected by both firm size and market equity values (Murphy, 1999; Bliss and Rosen, 2001). We examine the impact of mergers by breaking down size to focus on the changes due to merger activity. The basic model is:

Change in compensation = f(change in asset size, stock performance, controls) (1)

The objective is to determine how compensation changes over a three-year period given the merger activity during that period. Thus, to be in the sample in year t, a firm must have the same CEO since at least year t-3.

To determine how much the correlation between compensation and firm size is driven by acquisition activity, we follow Bliss and Rosen (2001) by dividing a firm's assets in year t into three parts: assets at the end of year t-3 (TA3), internal asset growth from years t-3 to t (INT GROW), and asset growth through acquisition during that period (MRG GROW).[17] So, for example, a firm with $7 billion in assets at the end of year t-3, a $2 billion acquisition in year t, and $10 billion in assets at the end of year t would have TA3 = $7 billion, INT GROW = $1 billion, and MRG GROW = $2 billion.

We also control for the impact of stock performance on compensation. We use two variables to proxy for stock-market equity value changes, primarily to distinguish between market-wide and firm-specific movements. INDEX CHG captures that part of the return attributable to market-wide effects, proxied by the return on the value-weighted CRSP index. INDEX CHG is the equal to the percentage return on the index from the end of year t-3 to the end of year t multiplied by the firm's equity value at the end of year t-3. FIRM CHG is the dollar change in the firm's equity value *not* due to changes in the index value. It is defined as the percentage change return on the firm's stock (including reinvested dividends) from the end of year t-3 to the end of year t multiplied by the firm's equity value at the end of year t-3 minus INDEX CHG, the change in value due to movement in the index. Thus, FIRM CHG captures the change in a firm's equity value due to idiosyncratic, firm-specific events. To illustrate, if a firm's equity value increases from $1 billion to $1.5 billion during a three-year period (with no acquisitions) when the CRSP index increases by 20%, INDEX CHG = $100 million (20% × $1 billion) and FIRM CHG = $300 million ($500 million gain − $200 million due to the index change).

We also include other controls that have been used in studies of acquisitions and compensation. For example, CEO ownership might also affect compensation decisions through

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[17] We assume assets acquired in acquisitions prior to year t grow at the same rate as other assets.

its influence on managerial entrenchment (see, e.g., Morck, et. al., 1990; Gorton and Rosen, 1995), so we include a measure of CEO ownership. Also, accounting measures of return may capture improvements in performance not present in the stock market returns, For this reason, we include ROA as a control. In addition, Q-theory suggests that a firm's investment rate (possibly including mergers) should increase with the firm's market-to-book ratio (Jovanovic and Rousseau, 2002), and there is evidence that firms tend to acquire firms with lower market-to-book ratios (Rhodes-Kropf, et. al., 2004). We include the ratio of the market value of equity to the balance sheet value of equity as a control (Rau and Vermaelen, 1997; Harford, 1999). Capital structure can also play a role in merger decisions since firms with high leverage have an incentive to underinvest (Myers, 1977). This leads us to follow other studies by including EQ/TA, the (accounting) leverage ratio, as a control. Firms with more free cash flow may be more able or more willing to make acquisitions. We control for this using the ratio of EBITDA to sales (Andrade and Stafford, 2004). All values are measured as of the end of year t, but we could take the average of the three years ending in year t without affecting the qualitative results. To simplify the presentation, we do not report the coefficients for the controls. When they are statistically significant, the signs conform to expectations (e.g., higher return on assets implies higher compensation). None of the key results are qualitatively affected by the inclusion or exclusion of any of these controls.

The results from regressions estimating equation (1) are presented in Table 2. The results indicate that both organic (internal) growth and growth through acquisition add to compensation, holding stock return constant. The regression in the first column shows that a merger adds about $102 in compensation per million dollars of assets acquired, virtually identical to the $103 if the assets were the result of internal growth. Note that as in previous studies, changes in equity value are positively correlated with compensation.

The impact of merger activity on compensation might depend on the whether acquisitions are part of a program. Let PROG GROW be the asset growth from acquisitions that are part of a merger program and ONE-OFF GROW be the asset growth from one-off acquisitions (those that are not part of a merger program). This allows us to test whether program mergers have a different effect on compensation than one-off mergers. The regression in the second column of Table 2 replaces MRG GROW with these two variables.

The results show that program mergers have a significant effect on compensation, but one-off mergers do not. Adding $1 million of assets in a program merger increases compensation by $135. This is larger than if the growth was internal, although the difference is not statistically significant.

Compensation committees may be able to distinguish among mergers in a program. One aspect that would seem relevant is the quality of the merger. We want to determine whether CEOs get the same reward for increasing assets in a "good" merger versus in a "bad" merger.

There are a number of possible measures of merger quality, including the CAR from a merger and the post-announcement return. It turns out that the CAR is too noisy to be a measure of quality. There is no significant difference in the contribution to compensation from mergers with positive and negative CARs. Using post-announcement return is better, but there is a question of what post-announcement means for firms with multiple acquisitions. Do we want to start the clock with the first announcement, the last announcement, or the largest merger? What if a firm has a program in place at the end of year t-3? To avoid these issues, and to allow us to examine whether compensation committees reward all asset growth differently based on firm performance, we separate firms into good and bad based on the stock performance over the entire 3-year period, t-3 to t.

We create interaction variables between our asset measures and measures of idiosyncratic stock performance. Let PROG GROW POS be the assets acquired in program mergers during a period when the firm has a positive firm-specific return, that is FIRM CHG > 0, and let PROG GROW NEG be the assets acquired in program mergers when FIRM CHG is non-positive. We define similar variables for all the other categories of asset change, adding the suffixes POS when FIRM CHG is positive and NEG when FIRM CHG is non-positive.

As shown in column (3) of Table 2, stock performance affects the relationship between asset growth and compensation only for growth from program mergers. Internal growth adds to compensation whether stock performance is positive or not, and the coefficients on the two internal growth variables, INT GROW POS and INT GROW NEG, are not significantly different from each other. As earlier, one-off mergers do not increase compensation independent of stock performance. However, there is a significant difference in the impact of asset growth from program mergers depending on stock performance. Adding $1 million of assets adds $425 to compensation if the acquisition occurred during a period when idiosyncratic stock performance was positive but only $82 when it was not. The $82 gain is roughly the same as the gain from $1 million in internal asset growth. This shows that for firms with program mergers, CEO compensation is correlated with firm performance both directly (through FIRM CHG) and indirectly, through bigger size-related gains when performance is strong.

Having established that not all program mergers have the same impact on compensation, we now turn to the evolution of a program. The results in the previous section show that merger quality changes over the life of a program. It is possible that this affects the way CEOs are compensated. Let PROG GROW i be the assets acquired in the ith merger in a program for i ∈ {1, 2, 3} and let PROG GROW 4+ be the assets acquired in all mergers after the third in a program. As before, we add the suffix POS if the firm has a positive idiosyncratic stock return during the period and NEG if it is non-positive. Column (4) of Table 2 introduces the new program merger variables. Again, there are differences between the compensation increases from program mergers depending on whether stock performance is good or not. When the idiosyncratic return

is non-positive, adding assets through program mergers has the same effect on compensation independent of where the merger falls within a program. This is not true when stock performance is strong.

For mergers during periods when idiosyncratic stock performance is positive, the position of a merger within a program matters. It is clear that the compensation benefit from program mergers declines over the life of a program. The first acquisition increases compensation by $680 per million dollars of assets acquired, while by the fourth merger, the increase is only $59 per million of assets acquired.[18] The results may reflect unwillingness on the part of Boards of Directors to continue to increase the compensation of a CEO who has seen her compensation already grow a lot.

During the sample period, aggregate compensation for CEOs in the Execucomp data more than triples. The results in Table 2 indicate that some of this increase is due to firms getting larger and some is due to changes in stock market values. One way to measure the relevant importance of these is to estimate the contribution to compensation change of the different growth and stock market factors. To do this, we evaluate the regression in column (4) of Table 2 at the mean values for each of the independent variables. We say that the contribution of internal growth equals $0.083 \times$ the mean value of INT GROW POS $+ 0.057 \times$ the mean value of INT GROW NEG. To get the share of compensation change that is due to internal growth, we divide this by the mean level of compensation change. Variables for one-off mergers, program mergers, and stock market valuation are defined similarly.

Table 3 presents the shares of compensation change attributable to the different factors. The first column gives the shares when the entire sample is included. Asset growth leads to 17.73% of the compensation change, more than the 14.61% contribution from changes in stock market valuation. Interestingly, although the marginal contribution from program merger growth is significantly larger than that for internal growth, internal growth contributes slightly more to the overall change in compensation. This occurs because few firms have merger programs. However, about two-thirds of all compensation change comes from factors other than growth and stock return. Essentially all of this is due to the upward trend in compensation (that is, from the constant term, which is not broken out in the table).

The picture is very different for firms with merger programs. Trend growth is less important for these firms, perhaps because CEO compensation at these firms increases faster than at the average firm. The rapid increase in compensation is due in large part to the assets acquired in program mergers. Growth due to mergers contributes ten times as much to compensation as does changes in stock market valuation. Internal growth also is more important at these firms relative

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[18] Separating out the fifth and subsequent mergers has no effect on the results. Mergers from number four on all increase compensation by about the same amount.

to other firms, leaving open the possibility that Boards of Directors at firms with program mergers reward CEOs for different things than do Boards at firms without them.

The differential effect on compensation of growth from program mergers and internal growth might signal an unmodeled difference between firms with acquisitions and those without. As a robustness check, we rerun the regression in column (3) of Table 2 first for firms with some merger activity (MRG GROW > 0) and then for firms with program merger activity (PROG GROW > 0). The results are reported in columns (1) and (2) of Table 4. It is evident that the key results hold for these subsamples.

There may be a difference between cash compensation and other, generally equity-based, compensation. The ratio of cash compensation to total compensation has declined over time, and fell significantly for the sample firms, from 63 percent in 1993 to 47 percent in 2001. This leaves open the possibility that the extra compensation CEOs get from program mergers is from non-cash compensation. To see how growth affects the different kinds of compensation, we rerun the regression in column (3) of Table 2 using the change in cash compensation (TCC in the Execucomp database) rather than the change in total compensation. The results, presented in column (3) of Table 4, are consistent with those for total compensation, although the magnitudes of the coefficients are smaller. A $1 million increase in assets through a program merger when the firm is doing well increases total compensation by $425 (column (3) of Table 2), of which $16 (column (3) of Table 4) is cash compensation. This suggests that the extra compensation is disproportionately in the form of equity (e.g., stock options), since the ratio of cash to total compensation averages 55 percent in the sample. As a robustness check, column (4) of Table 4 presents the results for cash compensation when we restrict the sample to firms with merger activity. The results are qualitatively the same as for the full sample. Thus, program mergers add to both cash and equity-based compensation, but the majority of the dollar gain is in equity-based compensation.

The evidence above suggests that merger programs are an efficient way for CEOs to increase their compensation. Assets added in merger programs give a bigger bang for the buck than other asset additions, but only if they are accompanied by strong stock performance and, even with this, the effect wanes as a program progresses. This pattern may explain why merger programs start and stop if acquisition decisions are, at least in part, motivated by the private benefits they offer to CEOs. As a program progresses, the benefits from a good acquisition fall and bad acquisitions may be more likely. This limits a CEO's ability to increase compensation by taking actions against shareholder interests. Still, there is a problem of cause and effect here. We have yet to determine whether CEOs engage in merger programs because they expect them to lead to compensation increases.

V. The effects of compensation on mergers

Firms make acquisitions for a number of reasons. These may be specific to the acquiring firm – such as how well the firm has done lately – or may be more general – such as a technological or regulatory shock. The focus on this section is on whether, all else equal, some firms are more likely than others to make acquisitions and how this interacts with CEO compensation.

We ask how likely it is that a firm announces a (major) acquisition over the next year. Our dependent variable is FUTURE MERGER, a dummy variable that takes the value one in year t if and only if a firm announces the acquisition of a target at least 5 percent as large as the firm during year t + 1 and the acquisition is successfully completed. As noted above, examining major acquisitions allows us to concentrate on the mergers that are most important strategically. Table 5 provides descriptive statistics for FUTURE MERGER and the other variables we use in the predictive model. The first set of columns includes all observations while the second set of columns includes only those observations with a merger in the recent past. During our sample period, 13 percent of firms made at least one acquisition in a given year. This is roughly twice as large as for the entire SDC merger sample, possibly reflecting the fact that we have compensation data for large firms only.

Our goal is to determine whether merger activity is generated by the desire to increase compensation. Before doing this, however, we set out a baseline regression including information about prior merger activity, stock returns, and other firm characteristics. Let PRIOR MERGERS be the number of mergers in a merger program as of the first prior merger (i.e., the most recent merger prior to the end of year t). To ensure that outliers do not drive the results, we cap PRIOR MERGERS at five. To the extent that some firms are predisposed to make acquisitions, the coefficient on PRIOR MERGERS should be positive.

We introduce several additional variables to reflect recent merger activity. Merger negotiations take management time as does completing a merger. Moreover, it may take time for a merged firm to integrate its constituent parts. This could lead firms with recent mergers (or merger announcements) to be less likely to make another acquisition attempt. The lack of a new announcement, thus, may not reflect a change in strategy as much as a delay caused by operational issues. For this reason, we drop all firms with a merger announced in the last six months of the year and all firms that have announced a merger but not yet completed it by the end of the year. To further control for the possibility that merger integration takes time, we use YEARS, which measures the number of years prior to the end of year t that the last announcement took place.

The quality of a previous merger may affect the probability of another acquisition. We measure merger quality as the buy-and-hold return starting two days prior to the announcement of the most recent merger and extending to the end of year t. Let PAST NET be the BHAR for the

acquiring firm's stock. The mean and median values of PAST NET are negative, although not significantly so for the mean.[19]

Firms may be more likely to make acquisitions after strong stock performance. To account for this, we control for a firm's overall stock performance for the three years ending in year t. Let MKT RET i be the percentage return on its stock in year t-i. We also include year dummies, so MKT RET i picks up the effect of the idiosyncratic return on the probability of a future merger. Including the market return gives us two measures of stock return post-announcement: PAST NET and the MKT RET variables. Thus, PAST NET measures the incremental impact of stock market return for firms with a recent announcement relative to firms with a similar overall return but without a recent merger.[20]

A number of other factors are known to affect merger activity. We include the log of total assets at the end of year t as an independent variable since the size of the acquirer has been found to affect the probability of making an acquisition (Harford, 1999) as well as the announcement return from a merger (Moeller, et. al., 2004). We also control for ROA, the market-to-book ratio, the leverage ratio, and the EBITDA-to-sales ratio as in our compensation regressions. As shown in Table 5, firms with prior acquisitions tend to be slightly larger and more leveraged. They have a lower ROA and a lower market-to-book ratio, but a higher EBITDA-to-sales ratio. Again, to simplify the presentation, we do not show the coefficients on these controls when we present regression results.

The baseline model is

FUTURE MERGER = f(merger activity, stock market return, controls, year dummies). (2)

We run the baseline model for all firm-year observations where the CEO has been in office for at least one year and, as noted above, there are no acquisitions announced in the last six months of the year or announced and not yet completed.

Column (1) of Table 6 presents the results of a logistic regression using (2). The coefficient on PRIOR MERGERS is significantly positive. The other control variables suggest that market performance and the time needed to integrate previous acquisitions drive future merger activity. Both measures of merger performance are significant. Better firm-specific stock return, that is, higher values of the MKT RET variables, makes a future acquisition more likely. Having successful post-merger returns increases the acquisition probability beyond that for firms with similar firm-specific return but no recent acquisition. That PRIOR MERGERS is significant even

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[19] The difference between the mean and median values of PAST NET and the BHAR as given in Table 1 arises because many firms with successful mergers (high BHAR) make multiple acquisitions in a three-year period. PAST NET only reflects the last acquisition from the end of year t-3 to the end of year t.

[20] Note that the time periods do not perfectly overlap since the MKT RET variables cover three years while PAST NET covers only the post-announcement period. Thus, PAST NET reflects the additional return over the post-announcement period.

after controlling for stock return is evidence that some firms are predisposed to make acquisitions. The next question is how this is affected by CEO compensation.

To examine how compensation affects merger decisions, we first include three measures of compensation as independent variables. The first is COMP/TA, the ratio of compensation to total assets as of the end of year t. This gives a measure of whether a CEO is paid well relative to her peers. It is not a perfect measure because compensation does not increase linearly with asset size. We also include COMP CHG/COMP, which is the percentage increase in compensation between years t-3 and t (including only firms with the same CEO for all four years). Finally, since the share of compensation that is equity based may affect merger quality (Datta, et. al, 2001), we include EQ/TOT COMP, which measures this share. Compensation growth and the share of equity compensation is higher at firms with recent mergers than at other firms (Table 5).

There are reasons why the decision to make an acquisition might also be affected by CEO ownership. Mergers dilute the control a CEO has and may increase risk, since the merger may not succeed. For these reasons, the probability of an acquisition may be decreasing in ownership. On the other hand, larger firms may be more diversified, making it safer for managers (Amihud and Lev, 1981).[21] If this holds, the probability of an acquisition would be increasing in ownership. We include OWNERSHIP, the percent of the firm owned by the CEO as a control.

The second column of Table 6 introduces the compensation and ownership variables. None of the compensation variables are significant, but CEO ownership significantly reduces the probability of an acquisition.

One reason that the compensation variables are not significant may be because they do not directly address the key issue. We want to know whether a CEO anticipates that an acquisition will increase her compensation. A CEO may be paid well (as measured by COMP/TA) or have received an increase in compensation (as measured by COMP CHG/COMP or a higher level of EQ/TOT COMP) because of her strong performance. However, what may be more important is whether the CEO is paid more than her performance warrants, since this might indicate a Board that excessively rewards its CEO, and would continue to do so after an acquisition. To measure the expected change in compensation, we use (1), the model from the previous section. We rerun the regression reported in column (4) of Table 2 on a year-by-year basis, taking the residuals from these regressions as a measure of excess compensation. Let EXCESS COMP TOP 50 be a dummy variable that takes the value one if the residuals are above the median value for their year and zero otherwise. Since we find that CEOs with merger programs get more compensation per dollar of assets acquired, it is also possible that they react more to the possibility of getting compensation. To account for this possibility, define EXCESS COMP TOP 50 PROG to be a dummy variable that takes the value one if and only if EXCESS COMP TOP 50 equals one and a firm has a merger program with at least two mergers by the end of year t. Similarly, define EXCESS COMP

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[21] Rose and Shepard (1997) find that CEO compensation increases with firm-level diversification.

TOP 50 NO PROG as a dummy variable that takes the value one if and only if EXCESS COMP TOP 50 equals one and a firm does not have a merger program with at least two mergers by the end of year t.[22]

The excess compensation dummy variables are introduced into the regression reported in the third column of Table 6. The results of this regression are consistent with excess compensation affecting future acquisitions for firms with merger programs, but not other firms. The coefficient on EXCESS COMP TOP 50 PROG is positive and significant while the coefficient on EXCESS COMP TOP 50 NO PROG is not significant. Note also that the coefficient on PRIOR MERGERS is insignificant. This is evidence that firms are predisposed to make acquisitions only if their CEOs get excess compensation.

We can include firms with recent merger announcements or exclude all firms that have no acquisition activity without changing the qualitative results. Table 7 presents regressions supporting this conclusion. The first regression drops the restriction requiring that firms have not announced a merger in the six months prior to the end of year t. The second regression includes only firms that have merger activity between the end of year t-3 and six months prior to the end of year t. In both cases, the coefficient on EXCESS COMP TOP 50 PROG is positive and significant while the coefficient on EXCESS COMP TOP 50 NO PROG is not significant, as with the main sample.

The prediction results show that strong stock performance is associated with a higher probability of making acquisitions. This is especially true for strong performance following an earlier merger announcement. Increasing CEO ownership reduces the incentive to acquire. Once we have controlled for these factors, there is a role for CEO compensation, but only at firms that give excess compensation to their CEOs *and* at which there is an existing merger program. These firms are more likely to announce future acquisitions. Thus, excess compensation is associated with the continuation of merger programs. This is consistent with CEOs at these firms being motivated by the ability to increase compensation by making acquisitions.

VII. Conclusions

Firms that are repeat acquirers make a majority of acquisitions in the U.S. We examine these firms, and the merger programs they conduct, to see how they are different from other acquirers. By focusing on merger programs, we provide support for managerial explanations of acquisition activity.

The quality of acquisitions varies over a merger program. Initially, the acquisitions in a program are better than one-off acquisitions, measured either by the market reaction to the merger announcement (the CAR) or by the buy-and-hold return (BHAR) following the announcement.

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[22] Note that some of these firms will be at the start of a merger program, but we cannot look forward without significantly biasing our results.

However, the quality of acquisitions fades as a program progresses. By the last mergers in a program, the quality is below that of one-off mergers. Moreover, the CAR is essentially zero and the BHAR is negative. These findings lead to the question of why firms make acquisitions that have a negative return for their shareholders. To put it more generally, why do firms start merger programs and why do they end them?

Changes in CEO compensation provide evidence on managerial motivations for merger programs, and possibly on why programs end. Compensation increases after some program mergers, but not after one-off mergers. But not all program mergers have an equal effect on compensation. It is only when a firm is doing well overall that program mergers have a disproportionate effect on compensation. And, even in this group, as a program progresses, the rate that CEO compensation increases as assets are acquired decreases.

Turning to the other side of the coin, we find that some firms have a predisposition to make acquisitions. Previous studies show that the stronger a firm is, measured in a variety of ways, the more likely it is to make an acquisition. Our results support this, but also imply that, controlling for firm strength, firms where CEOs get excess compensation and that have existing merger programs are the ones more likely to make future acquisitions.

Overall, the results are consistent with managerial motivations for merger programs. The evidence is consistent with compensation playing a role in acquisition decisions at some firms with programs. On average, acquisitions during programs add significantly more to compensation than other growth. Also, when CEOs get excess compensation, they are more likely to make future acquisitions, consistent with an attempt to further increase compensation.

While the results here indicate a role for managerial motivations, it is not all bad news for shareholders. The early mergers in a program add significant value for shareholders. In addition, compensation changes depend on shareholder value in two ways. First, there is the direct effect, since higher stock returns mean larger compensation increases. But, compensation also depends on firm size, so even a bad acquisition can lead to increased compensation. However, the compensation increases for acquisitions during a merger program are largest when the acquiring firm is doing well. Thus, even if CEOs make acquisitions in large part to increase their compensation, in order to get big increases, their shareholders have to do well also.

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Table 1. Comparison of different types of mergers.

Includes all acquisitions during 1993-2001 by firms in the Execucomp data where the target is at least 5 percent as large as the acquirer. A merger program is a group of acquisitions by the same firm with no more than two years between any two acquisitions.

Panel A. Merger programs versus one-off mergers.

	All mergers			Mergers in programs with at least two acquisitions			One-off mergers			P-value for test of program vs. one-off
	Mean	Median	Std dev	Mean	Median	Std dev	Mean	Median	Std dev	
CAR	1.28%	0.59%	9.41%	1.60%	0.71%	9.86%	0.73%	0.29%	8.52%	0.016
RUNUP	14.21%	2.48%	67.95%	17.25%	5.76%	66.58%	8.81%	-2.37%	70.04%	0.002
BHAR	7.41%	-1.43%	61.05%	7.58%	-0.12%	61.42%	7.09%	-3.93%	60.42%	0.840
LGTA	9.234	9.141	0.749	9.286	9.214	0.731	9.139	9.034	0.772	0.000
EQ/TA	0.393	0.388	0.218	0.373	0.375	0.219	0.428	0.418	0.212	0.000
ROA	0.038	0.038	0.079	0.033	0.032	0.071	0.046	0.046	0.091	0.000
MARKET-TO-BOOK	3.019	2.212	3.222	2.898	2.220	2.579	3.240	2.197	4.133	0.019
PROGRAM TOTAL *				4.096	3.000	2.745				
Observations		2,729			1,748			981		

* -- Length of a merger program from start to finish.

Panel B. First merger in a program versus one-off mergers. **

	First merger in a program			One-off mergers			P-value for test of program vs. one-off
	Mean	Median	Std dev	Mean	Median	Std dev	
CAR	4.89%	2.83%	16.48%	0.73%	0.29%	8.52%	0.005
RUNUP	15.90%	7.43%	50.94%	8.81%	-2.37%	70.04%	0.161
BHAR	28.01%	10.96%	66.45%	7.09%	-3.93%	60.42%	0.001
LGTA	9.221	9.177	0.673	9.139	9.034	0.772	0.204
EQ/TA	0.383	0.398	0.232	0.428	0.418	0.212	0.039
ROA	0.035	0.037	0.065	0.046	0.046	0.091	0.084
MARKET-TO-BOOK	3.195	2.255	3.337	3.240	2.197	4.133	0.890
Observations		126			981		

** -- Program mergers are the first in a program with at least four mergers.

Panel C. Evolution of merger programs.***.

	First merger			Intermediate mergers		
	Mean	Median	Std dev	Mean	Median	Std dev
CAR	4.89%	2.83%	16.48%	1.52%	0.59%	8.63%
RUNUP	15.90%	7.43%	50.94%	29.69%	12.75%	66.25%
BHAR	28.01%	10.96%	66.45%	18.01%	6.55%	68.30%
LGTA	9.221	9.177	0.673	9.439	9.437	0.663
EQ/TA	0.383	0.398	0.232	0.332	0.335	0.214
ROA	0.035	0.037	0.065	0.029	0.027	0.063
MARKET-TO-BOOK	3.195	2.255	3.337	2.843	2.201	2.065
Observations		126			353	

	Penultimate merger			Last merger			P-value for test of first versus last merger
	Mean	Median	Std dev	Mean	Median	Std dev	
CAR	1.23%	0.22%	8.44%	0.70%	-0.31%	10.68%	0.016
RUNUP	25.42%	7.30%	94.12%	9.39%	-4.61%	75.51%	0.414
BHAR	-3.48%	-9.72%	45.39%	-10.16%	-16.29%	44.87%	0.000
LGTA	9.435	9.317	0.716	9.436	9.417	0.704	0.012
EQ/TA	0.352	0.357	0.205	0.349	0.348	0.194	0.209
ROA	0.020	0.021	0.070	0.022	0.030	0.108	0.235
MARKET-TO-BOOK	2.537	1.905	2.135	2.403	1.930	1.677	0.017
Observations		148			133		

*** -- Includes all merger programs with at least four mergers. Intermediate mergers are those not in the other categories.

Table 2. Regressions of change in compensation against growth and stock market performance.

Regressions with change in total compensation for the end of year t-3 to the end of year t, as the dependent variable. Firms must have the same CEO from year t-3 to year t. Annual data for firms in the Execucomp database, 1995-2001. The dependent variable is in dollars, all other variables are in thousands of dollars.

	(1)	(2)	(3)	(4)
TA3	-0.021	-0.017	-0.021	-0.019
	(0.139)	(0.243)	(0.175)	(0.226)
INT GROW	0.103	0.085		
	(0.004)***	(0.011)**		
INT GROW POS			0.105	0.083
			(0.007)***	(0.067)*
INT GROW NEG			0.061	0.057
			(0.024)**	(0.037)**
MRG GROW	0.102			
	(0.009)***			
ONE-OFF GROW		0.044		
		(0.205)		
ONE-OFF GROW POS			-0.025	-0.022
			(0.556)	(0.583)
ONE-OFF GROW NEG			0.056	0.053
			(0.022)**	(0.033)**
PROG GROW		0.135		
		(0.030)**		
PROG GROW POS			0.425	
			(0.000)***	
PROG GROW 1 POS				0.680
				(0.000)***
PROG GROW 2 POS				0.446
				(0.000)***
PROG GROW 3 POS				0.162
				(0.031)**
PROG GROW 4+ POS				0.059
				(0.376)
PROG GROW NEG			0.082	
			(0.000)***	
PROG GROW 1 NEG				0.078
				(0.589)
PROG GROW 2 NEG				0.071
				(0.000)***
PROG GROW 3 NEG				0.094
				(0.081)*
PROG GROW 4+ NEG				0.081
				(0.000)***
FIRM CHG	0.123	0.127	0.115	0.118
	(0.027)**	(0.024)**	(0.041)**	(0.038)**
INDEX CHG	0.051	0.051	0.063	0.064
	(0.320)	(0.324)	(0.208)	(0.209)
Observations	4,517	4,517	4,517	4,517
R-squared	0.093	0.097	0.127	0.131

Robust p values in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Note: Controls not shown.

Table 3. Contribution to compensation change of growth and stock market return.
The results in this table are based on the regression in column (4) of Table 2. The contribution from internal growth is equal to (0.083 × INT GROW POS + 0.057 × INT GROW POS) / change in compensation. The contribution from one-off mergers is equal to (-0.022 × ONE-OFF GROW POS + 0.053 × ONE-OFF GROW POS) / change in compensation. The contribution from program mergers is equal to (0.680 × PROG GROW 1 POS + 0.446 × PROG GROW 2 POS + 0.162 × PROG GROW 3 POS + 0.059 × PROG GROW 4+ POS + 0.078 × PROG GROW 1 NEG + 0.071 × PROG GROW 2 NEG + 0.094 * PROG GROW 3 NEG + 0.081 × PROG GROW 4+ NEG) / change in compensation. The contribution from the growth in size is the sum of the contributions from internal growth, one-off mergers, and program mergers. The contribution from stock market return is equal to (0.118 × FIRM CHG + 0.064 × INDEX CHG) / change in compensation. Trend change is the change not due to the growth in size and stock market return (and thus due to the constant and controls in the regression).

Contribution from:	Entire sample	Firms with program mergers (PROG GROW > 0)
Asset growth	17.73%	52.94%
Internal growth	9.19%	6.64%
One-off mergers	0.01%	1.13%
Program mergers	8.53%	45.17%
Stock market return	14.61%	4.34%
Trend	67.66%	42.73%
Observations	4,517	680

Table 4. Robustness checks of the relationship among the change in compensation, growth, and stock market performance.

Regressions with change in total and cash compensation for the end of year t-3 to the end of year t. Firms must have the same CEO from year t-3 to year t. Annual data for firms in the Execucomp database, 1995-2001. The dependent variable is in dollars, all other variables are in thousands of dollars. The regressions in columns (1) and (4) include only firms with some merger activity in years t-2 − t and the regression in column (2) includes only firms with a merger program in years t-2 − t (the regression in column (3) includes the full sample).

dependent variable:	CHANGE IN TOTAL COMPENSATION		CHANGE IN CASH COMPENSATION	
	(1)	(2)	(3)	(4)
TA3	-0.014	-0.106	0.002	-0.002
	(0.561)	(0.024)**	(0.422)	(0.638)
INT GROW POS	0.123	0.173	0.014	0.019
	(0.010)**	(0.000)***	(0.057)*	(0.009)***
INT GROW NEG	0.081	-0.023	-0.005	-0.003
	(0.245)	(0.771)	(0.187)	(0.533)
ONE-OFF GROW POS	-0.059	-0.019	0.003	0.001
	(0.221)	(0.569)	(0.821)	(0.954)
ONE-OFF GROW NEG	0.041	0.041	-0.003	0.000
	(0.314)	(0.228)	(0.567)	(0.989)
PROG GROW POS	0.401	0.449	0.016	0.014
	(0.000)***	(0.000)***	(0.000)***	(0.005)***
PROG GROW NEG	0.084	0.131	-0.002	-0.001
	(0.000)***	(0.000)***	(0.157)	(0.658)
FIRM CHG	0.206	0.232	0.009	0.018
	(0.000)***	(0.079)*	(0.161)	(0.180)
INDEX CHG	0.031	0.441	0.011	0.029
	(0.810)	(0.018)**	(0.179)	(0.159)
Observations	2,048	680	4,517	2,048
R-squared	0.164	0.524	0.079	0.121

Robust p values in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Note: Controls not shown.

Table 5. Summary statistics for the predictive regressions.

Annual data for firms in the Execucomp database, 1992-2000. All data are year-end except for return variables and merger variables. Firms with an acquisition within six months of the most recent year end are not included in the sample. Future merger is a merger in the following 12 months.

	All firms			Firms with a past merger (PRIOR MERGERS > 0)		
	Mean	Median	Standard deviation	Mean	Median	Standard deviation
FUTURE MERGER	12.77%	0.00%	33.38%	20.91%	0.00%	40.68%
PRIOR MERGERS				1.739	1.000	1.165
YEARS				0.700	0.775	0.506
PAST NET				-1.70%	-9.66%	55.96%
MKT RET 1	0.49%	-6.26%	48.71%	0.09%	-6.78%	57.06%
LGTA	9.210	9.131	0.729	9.326	9.214	0.713
EQ/TA	0.440	0.424	0.215	0.389	0.382	0.210
ROA	0.047	0.048	0.100	0.035	0.035	0.085
MARKET-TO-BOOK	3.231	2.224	3.428	3.035	2.209	2.937
EBITDA-TO-SALES	0.152	0.159	0.427	0.178	0.161	0.340
COMP/TA	0.33%	0.14%	0.86%	0.27%	0.13%	0.55%
COMP CHG/COMP	132.87%	34.55%	1106.21%	218.68%	50.31%	1693.12%
EQ/TOT COMP	43.52%	44.64%	27.69%	48.96%	51.80%	27.51%
OWNERSHIP	4.35%	1.72%	6.94%	3.35%	1.65%	4.77%
Observations		7,280			1,339	

Table 6. Regressions to predict future mergers.

Logistic regressions with FUTURE MERGER as the dependent variable. Annual data for firms in the Execucomp database, 1992-2000. Firms with an acquisition within six months of the most recent year end are dropped from the sample.

	(1)	(2)	(3)
PRIOR MERGERS	0.190	0.114	0.009
	(0.000)***	(0.050)**	(0.904)
PAST NET	0.354	0.368	0.275
	(0.000)***	(0.001)***	(0.016)**
YEARS	0.100	0.176	0.407
	(0.388)	(0.237)	(0.015)**
MKT RET 1	0.183	0.129	0.284
	(0.043)**	(0.262)	(0.024)**
MKT RET 2	0.167	0.075	0.026
	(0.025)**	(0.532)	(0.862)
MKT RET 3	0.273	0.296	0.422
	(0.002)***	(0.022)**	(0.003)***
COMP/TA		-0.650	2.192
		(0.945)	(0.853)
COMP CHG/COMP		0.003	0.005
		(0.247)	(0.249)
EQ/TOT COMP		0.288	0.194
		(0.140)	(0.419)
OWNERSHIP		-1.837	-1.741
		(0.025)**	(0.046)**
EXCESS COMP TOP50 PROG			0.702
			(0.001)***
EXCESS COMP TOP50 NO PROG			0.045
			(0.728)
Observations	7,320	4,443	3,486

Robust p values in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Note: Controls and year dummies not shown.

Table 7. Partial sample regressions to predict future mergers.

Logistic regressions with FUTURE MERGER as the dependent variable. Annual data for firms in the Execucomp database, 1995-2000. The regression in column (1) uses all firms, including those with an acquisition within six months of the most recent year end. The regression in column (2) includes only firms with some merger activity between the end of year t-3 and six months prior to the end of year t. It drops firms with an acquisition within six months of the most recent year end.

	(1)	(2)
PRIOR MERGERS	0.038	-0.005
	(0.529)	(0.943)
PAST NET	0.321	-0.092
	(0.003)***	(0.668)
YEARS	0.343	0.411
	(0.027)**	(0.018)**
MKT RET 1	0.326	0.768
	(0.007)***	(0.001)***
MKT RET 2	0.062	0.670
	(0.666)	(0.017)**
MKT RET 3	0.466	0.559
	(0.001)***	(0.028)**
COMP/TA	1.143	2.660
	(0.921)	(0.872)
COMP CHG/COMP	0.005	0.008
	(0.284)	(0.093)*
EQ/TOT COMP	0.270	0.070
	(0.235)	(0.853)
OWNERSHIP	-1.399	-0.361
	(0.081)*	(0.828)
EXCESS COMP TOP50 PROG	0.543	0.607
	(0.004)***	(0.012)**
EXCESS COMP TOP50 NO PROG	0.049	-0.170
	(0.698)	(0.501)
Observations	3,771	1,041

Robust p values in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Note: Controls and year dummies not shown.

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