Managerial Incentives and Corporate Acquisition Decisions

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ABSTRACT

We show that managerial compensation incentives have an economically significant impact on corporate acquisition decisions. Using the introduction of the Sarbanes-Oxley act as an exogenous breakpoint, we find evidence of a major change in the relationship between equity-based compensation and acquisition performance as a result of the new legal requirements introduced by the Act. Specifically, bid premiums fell and the difference in post-acquisition performance between firms having high and low equity-based compensation grew substantially. Although the role of incentive compensation is important, it is secondary in importance to other corporate governance structures within the firm. Our results are robust to changes in the means of payment, the acquirer's growth prospects, and executive ownership.

Keywords: Incentive Compensation, Acquisition Decisions, Sarbanes-Oxley Act, Corporate Governance

JEL classification: G32, G34, G38

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Many factors can lead a firm into undertaking a corporate acquisition. Some, such as growth opportunities, disruptive technology, managerial hubris, target undervaluation (Edmans et al., 2012), geographical proximity, accounting quality (Erel et al., 2012), synergies, and managerial herding (Baker et al., 2012; Duchin and Schmidt, 2013), have fairly straightforward explanations and predicted effects. However, there are a number of other drivers that have less intuitive interpretations but are, nonetheless, exceptionally important in understanding acquisition activity and performance. In particular, the role of executive compensation and its effectiveness in incentivising value-maximizing acquisition decisions is not clear.

The original rationale underlying incentive-based executive compensation was that it aligns the objectives of managers to that of stockholders (Shleifer and Vishny, 1988). Appropriate mechanisms to create a coherency of objectives can also lead to an increase in company performance (Murphy, 1999; Core et al., 2003) and shareholder value (Billet et al., 2010), reduce stock price volatility (Guay, 1999), and improve corporate investment opportunities (Nohel and Todd, 2005; Conyon et al., 2011). However, if executive compensation is inappropriate, it may lead to excessively high managerial risk aversion (Chhaochharia and Grinstein, 2009).

Datta et al. (2001) find that long-run stock price returns to M&A are greater for firms with above the median equity based compensation (EBC), whereas firms below the median suffer substantial losses. These value gains are driven by risk-taking incentives provided to bidding company management through higher EBC. Specifically, high EBC managers target firms with higher growth opportunities and make acquisitions that lead to higher changes in stock return volatility following the takeover relative to low EBC managers.

A body of research has suggested that executive compensation is not a causal link to value-enhancing corporate behaviour but is instead an endogenous outcome of the internal governance and cultural environment of the firm. For example, Morse et al. (2011) find that powerful managers can influence their incentive compensation by manipulating performance measures towards the best performing ones. Furthermore, independent boards, which have been the cornerstone of modern governance theory, have been shown to actually increase executive pay (Guthrie et al., 2012). Butler and Gurun (2012) and Engelberg et al. (2013) show that managerial networks and the educational relationships between institutional investors and the board are a major factor in executive compensation. Finally, firms engage

is strategic peer benchmarking to maximise the pay of their senior executives (Faulkender and Yang, 2013).

In this paper, we show that not only does executive compensation change managerial behaviours, but that these behaviours have adapted over time in response to executive compensation incentives. We specifically consider how executive compensation structure affects corporate acquisition activity, since it is one of the most important investment decisions that managers make in terms of corporate wealth allocation (Shleifer and Vishny, 1988). Moreover, the details and consequences of acquisition events can be easily observed and measured (Bauguess and Stegemoller, 2008), while the market reaction to the announcement of an acquisition is indicative of the value that such decisions create for shareholders. We examine acquisitions made by US firms between 1993 and 2010 and investigate the changing function of executive compensation over time. We find that the effect of compensation structure has indeed changed over the eighteen years of our sample.

Our research adds to the growing body of literature investigating the role of executive compensation in managerial decision-making. Researchers have provided evidence that appropriately designed executive compensation contracts, and in particular equity based compensation, can improve managerial performance. However, recent research has shown that executive compensation results from the endogenous interactions that take place within the firm, and can be gamed by enterprising boards.

The remainder of the paper is organised as follows: Section I presents our data and the sample formation process. Section II outlines the methodology we follow. Section III gives a description of the sample statistics. Section IV presents and discusses the empirical results. Section V summarises and concludes.

I. Sample Formation

We use the Thomson One database for Mergers and Acquisitions in order to identify all Mergers and Acquisition that took place in the US market during the period January 1, 1993 to December 31, 2010. A transaction is included in the sample only after meeting all the following sample requirements:

1. The transaction must be completed.

2. Identified as merger or acquisition by the Thomson One database.
3. Both the announcement and effective date must have occurred within our sample period.
4. Both the bidder and the target must be US firms.
5. The acquirer must own more than 50 per cent of the target after the acquisition so as effective control can be assumed.
6. The acquirer must be a publicly listed company

These criteria resulted in 30,487 acquisitions made by US firms in the above mentioned time period. Moreover, the bidders should have price data available on Center for Research in Security Prices (CRSP) and accounting data on Compustat. In addition, executive compensation data should be available on S&P ExecuComp database for the year preceding the acquisition. Execucomp database offers compensation data on the top five executives of over 3,300 US firms. Among the information available in the database, it is the number and value of annual options received, shares owned and stock awards. Data are available from 1992 forward and this limitation has dictated the beginning of our period under investigation in 1993. Under these restrictions, the final sample consists of 8,680 corporate acquisitions made by 2,060 US firms from 1993 until 2010.

II. Methodology

In order to test our hypotheses, our sample is divided into subsamples according to levels of equity-based compensation and acquisition announcement dates. Equity based compensation is defined as the value of new stock options granted to the top five executives in the year preceding the acquisition announcement as a percentage of their total compensation. Our choice to examine the compensation of the top five executives is mainly defined by the fact that the Execucomp database consistently provides compensation data for the top five executives of the firms included in their database. Moreover, it has been shown that the higher an executive ranks in a company, the higher the proportion of their equity-based compensation is (Barron and Waddell, 2003). Thus, the analysis of acquisition decisions taken by the top five executives can be strongly indicative of the effect that equity-based compensation can have on firm performance. Firms whose percentage of equity based compensation is at or below the median are classified as Low EBC firms, otherwise they are characterised as High EBC firms. In addition, the sample is divided into two sub-periods

depending on whether the acquisition announcement has taken place before or after the enactment of Sarbanes-Oxley Act (30 June 2002). This will enable us to examine the conjunctive effect of incentive compensation (EBC) and corporate governance regulation (SOX) on investment decisions.

Market reaction on acquisition announcement is estimated as the bidder's abnormal stock price return for a three-day event window (-1,0,+1) surrounding acquisition announcements where day "0" is the acquisition announcement date. Cumulative abnormal returns (CARs) are computed using the market model method (Brown and Warner, 1985) where the expected return for a bidder *(i)* is given by the following Ordinary-Least-Squares (OLS) regression:

$$E(R_{i,t}) = \alpha + \beta_i R_{M,t} + \varepsilon_t$$

where α is the regression intercept, β_i the slope coefficient, $R_{M,t}$ the return on the CRSP S&P 500 Value-Weighted Market Index, and ε_t the random error term. The use of the CRSP Value-Weighted Market Index for the estimation of cumulative abnormal returns is consistent with a number of contemporaneous studies in Mergers and Acquisitions (Golubov et al. (2012), Alexandridis et al. (2013), Antoniou et al. (2007)). The parameters of the market model are estimated over a 140-day period ranging from 200 to 60 days prior to the acquisition announcement date.

The Buy-and-Hold Returns (BHR) approach is implemented for the estimation of the two-year post-acquisition stock price performance as well as for the one-year pre-acquisition performance. This is a commonly used method in a number of different studies examining long-term share price performance (Ritter (1991), Kothari and Warner (1997), Spiess and Affleck-Graves (1999), Bi and Gregory (2011)). The BHR is calculated as follows:

$$BHR_{i,t} = \left[\prod_{t=1}^{T}(1 + R_{i,t}) - 1\right] x\ 100$$

where $t = 1$ is defined as the first trading day after acquisition, $R_{i,t}$ as the return on stock i on day t and T_i as the two-year anniversary date (or one year for measuring pre-acquisition performance) of the effective acquisition date for company i.

The statistical significance of difference between means in our sample will be tested using the *t*-statistic. One limitation of this method is that standard t-tests assume normal distribution which may not usually be the case in practice. Although our sample is

considerably large, we also use non-parametric test of our hypothesis by applying the Wilcoxon Rank Sum Test *Z*-statistic for differences in medians in order to avoid any possible bias caused by large outliers. T-test and Sign-test are used to determine the statistical significance of each individual sample's mean and median respectively. Following Data et al. (2001) we check the robustness of our findings by testing them against a number of factors that according to the literature can affect stock price performance and consequently the effectiveness of incentive compensation such as firm size, means of payment and Book-to-Market value. Cross-section regressions on these factors will be run to validate our analysis.

III. Descriptive Statistics

Table I presents some quite interesting summary statistics of our sample by year of acquisition announcement. While the frequency distribution of acquisitions (Panel A) does not indicate any clustering of observations in any particular year, there is a clear increasing trend in the number of acquisitions from 1993 until 1999, the year when it reaches a peak. Then it decreases significantly until it starts rising again in 2002. This trend is quite similar to those documented by Masulis et al. (2007) as well as by Moeller et al. (2004). It is worth noting that during the recent period of financial turmoil (1998-2010) the number of acquisitions has considerably decreased. Deal values also show a similar trend up to 1999 when they reach a peak with an average transaction value of $741 million. Following a sharp downward movement, the average deal value rises again after 2002 to reach a second peak in 2006 ($805 million). 2009 seems to be a very special case with a number of very large transactions making the average deal value for this year twice as high ($1.059 million) as the average deal value ($514 million) of the whole 18-year period under examination. Panel A also reveals a very interesting feature regarding the mode of financing in our sample period. 41.6 per cent of the acquisitions before 2002 had been financed entirely by cash but this figure notably rises to 64.9 per cent for the acquisitions after 2002. On the other hand, 30 per cent of the acquisitions before 2002 had been financed entirely by equity, but this method of financing has become quite unpopular after 2002 (only 4.3 per cent of the transactions had been financed solely by equity in the period 2002-2010) showing probably that bidder's managers have become more conservative after the introduction of additional corporate governance regulation in 2002, choosing less costly modes of financing in terms of corporate control. Harford et al. (2012) show that entrenched managers prefer to use cash to acquire a

target rather than stock in order to avoid monitoring from a potential large blockholder. Probably, in the post-SOX period, an increasing number of managers, and not only the entrenched ones, try to avoid large monitoring bondholders. The column "Other" of the table refers to a combination of cash, equity and other methods of financing.

Panel B shows that the average size of the target firm for our total sample is 10 per cent the average size of the bidder, which is very close to the ratio reported by Datta et al. (2001) for the period 1993-1998 (11 per cent). Additionally, both the size of acquirers and targets has significantly increased between our two sub-periods. The number of observations between acquirers and targets differs because not all target firms were publicly listed at the time of acquisition. We also report a bidder's average (median) Market-to-Book ratio of 2.22 (1.54) which is almost identical to that reported by Datta et al. (2001) (2.22 and 1.51 respectively). This ratio experiences a statistical significant decrease in the post-SOX period, indicating that acquisitions are becoming more popular among *value* firms in recent years. The last line of the table shows that the average (median) acquisition premium paid by acquiring firms for the whole sample period is 47.21 per cent (36.10 per cent). Acquisition premium data is taken from the Thomson One database for Mergers and Acquisitions (PPM4WK variable) and is measured as the difference of the price offered by the bidder and the target stock price as a percentage of the target stock price four weeks prior to the acquisition announcement. Data et al. (2001) also report comparable results (40.11 per cent and 35.58 per cent respectively).

Table II presents some descriptive statistics regarding the compensation structure of the top five executives for the year preceding the acquisition announcement. The information is provided by the Execucomp database but we need to note here that the reporting format of the database was changed in 2006 and a number of underlying items are not completely comparable between the 1992 reporting format and the more recent one. Under the reporting format of 1992, total compensation is defined as the sum of salary, bonus, other annual short-term compensation, total value of restricted stock granted, total value of stock options granted (using the Black-Scholes value), long-term incentives payouts and all other long-term compensation. Under the new reporting format of 2006, total compensation is calculated as the sum of salary, bonus, non-equity incentive plan compensation, grant-date fair value of option awards, grant-date fair value of stock awards, deferred compensation earnings reported as compensation and other compensation awarded to the top five executives.

Due to the limitation caused by the change in Execucomp database reporting format in 2006, a comparison of the executives' compensation structure between the firms that announced an acquisition before the enactment of Sarbanes-Oxley Act and the post-SOX acquisition announcement firms would be of little value and possibly meaningless in this case. Panel A presents the structure of the executives' compensation package for those firms with an announcement date before 2007 and Panel B provides the same type of information for those firms with an announcement date after 2007 (compensation data are recorder at the year prior the acquisition announcement year). Under the old reporting format, option grants was the most popular form of compensation accounting for 34.8 per cent of the total compensation value with a median of $ 2 million. According to 2006 reporting format, option grants keeps being a popular form of compensation but probably not the most important one in terms of value as the significance of the combined annual salaries has considerably increased. This can probably provide some support to previous studies identifying a decrease in incentive compensation post-SOX (Dicks (2012), Cohen et al. (2012), Chhaochharia and Grinstein (2009)). However, if we take into consideration the value of stock grants along with that of option grants, the equity-related forms of executive compensation seem to remain significantly strong even under the new reporting format.

From 1993 until 2007 84.31 per cent of the acquiring firms had awarded new stock option grants to their top five executives in the year preceding the acquisition announcement. The respective figure for the last three years of our sample (2007-2010) is 67.79 per cent. Combining the information from Panel A and B, acquiring firm's executives had been granted stock option grants in the year prior to the announcement in 7,083 out of 8,680 acquisitions made during the period 1993-2010 (81.6 per cent). It may be also interesting to mention that bonus-payments seem to lose ground as a form of compensation. Only half of the firms made cash-bonus payments in the last three years and the median value of this form of compensation was only $13,500.

IV. Empirical Results

IV.A. Equity-Based Compensation and Investment Risk

One of the key questions stemming from the principal-agent problem is whether a firm's managers will opt to forgo profitable risky investments in order to avoid any possible risk

associated with these projects. On the one hand there is evidence that higher levels of incentive compensation in the form of stock and options can lead to risk-increasing acquisitions by managers, contributing to shareholder's wealth (Agrawal and Mandelker (1987), Conyon et al. (2011)). However, there is also the opposite view that the increased sensitivity of managerial compensation to stock performance can make risk-averse directors to avoid risky investments at an even higher rate than before (Holmstrom (1979), Lambert et al. (1991)).

In order to test the impact of equity-based compensation as well as corporate governance regulation (SOX) on the levels of risk of acquisition decisions, we examine the market-to-book ratio of target firms and the change in standard deviation of bidders' returns. Market-to-book ratio is defined as the difference between book value of total assets and book value of equity plus market value of equity divided by book value of total assets at the month-end preceding the acquisition announcement using Compustat. Panel A of Table III shows that high EBC firms consistently acquire firms with higher growth prospects (average M/B ratio = 2.46) than those acquired by lower EBC firms (average M/B ratio = 1.46). This is consistent with the hypothesis that high levels of incentive compensation can help to align the interests of managers with those of shareholders. What is more, the difference between the market-to-book ratio of High EBC target firms and Low EBC targets becomes even more statistically stronger (significant at 1 per cent level) after the enactment of the Sarbanes-Oxley Act in July 2002 implying that the additional regulation had a positive impact in mitigating agency costs.

Nevertheless, the comparison of bidders' risk before and after the acquisition announcement tells a somehow different story. We follow Agrawal and Mandelker (1987) and Datta et al. (2001) estimating the change in acquirer's risk as the difference in the standard deviation of stock returns before (120 days to 60 days prior to the effective date) and after (11 days to 70 days following the effective date) the acquisition. Panel B of Table III presents the results. Before the enactment of SOX high EBC awarding firms experience an average increase in risk (0.14 per cent) which differs significantly from the average decrease in risk experienced by low EBC awarding firms (-0.44 per cent). The image is totally different after the June of 2002 though. Both the average and median risk of high EBC firms has been reduced (-0.09 per cent and -0.11 per cent respectively) while low EBC firms have increased their own levels of risk (average = 0.13 per cent and median = 0.01 per cent). Indeed, the last two columns on the right indicate that risk of High EBC firms has been

significantly decreased both in terms of average and median (significant at 1 per cent level) whereas the average risk of Low EBC firms has considerably increased from -0.44 per cent to 0.13 per cent.

Since the change in bidder's risk may be due to increase in the firm's leverage and not due to the level of risk of the investment decision, we also test our results against this factor. Change in leverage is defined as the change in the firm's ratio of long term debt to total assets between the year-end preceding the acquisition and the acquisition year-end. Panel C reveals that High EBC acquirers who experienced even an increase in leverage after 2002 had an average (and median) decrease in their risk of -0.12 per cent which cannot be statistically ignored! This is indicative of the intention of highly incentive compensated managers to avoid risky investments in the period following more strict corporate governance regulations. In contrast, even when there was no change in leverage, low EBC firms have experience a considerable increase in their average (median) risk of 0.20 per cent (0.08 per cent) which is statistical significant at the 1 per cent level. As a result, whereas High EBC firms seem to choose considerably more risky acquisitions than their Low EBC counterparts for the period before July 2002 (which is consistent with the results of Datta et al. (2001) for the period 1993-1998), the relation is totally reversed after the enactment of Sarbanes-Oxley Act. Making their compensation more sensitive to share price movements seems to have led managers to more conservative investments decisions when they need to comply with additional and more demanding regulations. The latter is in line with the findings of Cohen et al. (2012) that corporate-risk taking activities, including acquisitions, have been significantly reduced in the post-SOX period.

IV.B. Acquisition Premium

In their effort to increase their control with the company, managers may often pursue non-value-maximising objectives and in the case of acquisitions they are likely to pay a premium for their target quite above what the target is actually worth to their shareholders (Shleifer and Vishny, 1988). This is confirmed by Harford et al. (2012) who document that entrenched managers overpay for their targets as their top priority remains the control reinforcement rather than the value creation for shareholders. In addition, Roll (1986) supports that due to managerial hubris, decision-takers overestimate the value of target firms and as a result they overpay in corporate acquisitions. Thus, in Table IV we examine whether there is any significant difference in acquisition premiums paid by firms that award high

equity-based compensation to their executives and firms that award low levels of EBC as well as whether there is any identifiable difference in premiums paid by bidders for acquisitions announced before and after the enactment of Sarbanes-Oxley Act.

Panel A indicates that in the post-SOX period, managers have limited their old tendency to destroy value during corporate acquisitions. Before SOX, High EBC firms pay an average (median) premium of 51.75 per cent (42.35 per cent) which is significantly greater than the average (median) premium paid by Low EBC firms of 44.07 per cent (36.99 per cent). However, post-SOX both types of firms have substantially reduced the median premium they pay for targets and, most importantly, there is no evidence that they pay different levels of acquisition premiums any longer. In Panel B we test for difference in premiums paid by High EBC and Low EBC firms after taking their 1-year pre-acquisition performance into consideration. Based on Jensen's (1988) theory of free cash flows, we expect that managers of good performers may tend to overpay for targets using the free cash flow generated by the firm. Past performance is measured as the 1-year BHR before the acquisition announcement date. Firms with past performance above the median are ranked as good performers, otherwise they are characterised as bad performers. Panel B shows that the implications of the results presented above are even more statistically strong for good performers. High EBC firms pay considerably higher premium than their Low counterparts before the enactment of Sarbanes-Oxley Act but in the post-SOX period managers significantly reduce the premium they pay for targets irrespectively of the levels of equity-based compensation they receive. As a result, High and Low EBC firms seem to pay no statistically different premiums post-SOX. Regarding bad performers, High- and Low equity-based compensation awarding firms were not paying significantly different premiums before-SOX. Consequently the introduction of new regulations has not affected this relation with the exception of a reduction (significant only at 10 per cent level though) in the median premium paid by highly equity-based compensated managers (from 42.93 to 32.96 per cent).

Travlos (1987) shows that the method of payment in corporate acquisitions can reveal important information regarding targets' fair value. Eckbo and Langohr (1989) also document the importance of the method of payment in corporate acquisitions in a study investigating the impact of the introduction of new disclosure regulation in France. In Panel C we further split our sample according to the mode of payment used in the acquisition. "Cash" refers to those acquisitions financed only with cash and "Noncash" refers to the acquisitions financed with a combination of cash, equity, or any other method of payment. While there is a slight

overpayment for cash-financed acquisitions made by High EBC firms in relation to those made by lower equity-based compensation awarding firms, this difference disappears in the post-SOX period due to the decrease of the median premium paid by High EBC firms from 43.54 per cent to 33.14 per cent (significant at the 10 per cent level). However the implications are more evident for those bidders that did not finance their acquisition entirely by cash. Both High and Low EBC firms have considerably reduced the premiums they pay for acquisitions post-SOX. Furthermore, this reduction is both economically and statistically important and applies both to the average and median premium paid (last three columns of the table on the right). From the preceding analysis, it seems that corporate governance regulation has been more effective than incentive compensation in minimizing the value destroyed during corporate acquisitions, adding thus value to shareholders' wealth.

IV.C. Market Reaction on Acquisition Announcements

We examine the market reaction on corporate acquisition announcements by estimating the bidder's cumulative abnormal return on a three-day window (-1,0,+1) surrounding the announcement date. For those firms with more than one acquisition announcements on the same date we include only the first observation to avoid biasness of our results. Panel A in Table V shows that market perceives more positively acquisitions made by Low EBC firms but this can be attributed to the period before-SOX. Before the change in regulation, Low EBC firms were earning an important average cumulative abnormal return of 1.38 per cent, significantly higher than that of High EBC firms (which was not statistically different from zero). However, new governance rules seem to have act in a redistributive way in terms of CARs. Small increases in CARs earned by High EBC firms along with small decreases in abnormal returns of Low EBC firms have resulted in no statistical difference in the abnormal returns the two group of firms earn around acquisition announcements post-SOX. In particular, with the exception of the median CAR of Low EBC firms that equals 0.19 per cent (significant at the 5 per cent level) post-SOX bidders do not seem to earn significantly different from zero average abnormal returns around acquisition announcements which is consistent with the findings of Agrawal and Jaffe (2000).

As with the analysis of acquisition premiums, in Panel B we partition our sample according to methods of payment. Our results support previous research findings that cash acquisitions are perceived more positively by the market (Datta et al, 2001). In total, bidders that acquired their target using 100 per cent cash earn a significant average (median)

abnormal return of 0.78 per cent (0.39 per cent) during the period 1993-2010. Both High and Low EBC groups earn significant positive abnormal returns before as well as after the enactment of Sarbanes-Oxley Act. Moreover, while Low EBC acquirers earn a significantly higher average CAR (1.68 per cent) than that of High EBC acquirers (0.76 per cent) before-SOX, this difference disappears in the post-SOX period as the abnormal returns for Low EBC firms have been adjusted to statistically equal levels to the abnormal returns of High EBC acquirers. In contrast, abnormal returns of non-cash acquisitions are significantly and consistently negative for High EBC firms and quite lower than those of their Low EBC counterparts. In the post-SOX period, the difference between the two groups is less strong though (significant only at the 10 per cent level) as a combined effect of a slight improvement in the abnormal returns of High EBC bidders and a decrease in the average abnormal return of Low EBC firms from a significant 1.15 per cent to a non-significantly different from zero 0.13 per cent. Once again, the abnormal returns earned by firms who award low levels of equity-based compensation to their managers seem to be those that have been negatively affected by the introduction of additional corporate governance regulation.

It has been documented that high levels of executive ownership can negatively affect M&A activity (Caprio et al., 2011) or cause an adverse market reaction around the acquisition announcement date (Bauguess and Stegemoller, 2008). Although executive ownership up to some point can help align the interests of shareholders with those of managers, high levels of ownership do not necessarily add corporate value as they can result in value-destroying behaviour by entrenched managers (McConnell and Servaes, 1990). In the latter case, strong external governance may be required to mitigate agency problems (Kim and Lu, 2011). In Panel C we partition our sample in ownership quartiles in order to examine acquirer's CARs across different levels of ownership. Ownership is defined as the total number of common and restricted stock owned by the top five executives at the year-end before the acquisition divided by the total number of shares outstanding. Following McConnell and Servaes (1990), we truncate the distribution of executive ownership at their 1^{st} and 99^{th} percentiles in order to avoid the impact of any extreme outliers on our results.

The evidence in Panel C indicates that in high levels of executive ownership (Quartile 1) incentive compensation loses its power as an agency cost mitigating mechanism since Low EBC firms earn significantly positive and higher abnormal returns than High EBC acquirers

before the Sarbanes-Oxley Act. However after the introduction of external governance mechanisms as suggested by Kim and Lu (2011) there is an alignment of the cumulative abnormal returns of the High EBC Group with that of the Low EBC one. Once again, firms that award low levels of incentive compensation to their managers seem to be the most sensitive in changes in regulation as it is documented by the far right column of the table. We do not find any statistically significant difference in bidder's CARs for low levels of ownership (Quartile 4), but some quite interesting implications come from the very next level of executive ownership (Quartile 3). Apart from the elimination of any statistically significant difference between High- and Low EBC firms' abnormal returns in the post-SOX period, High EBC acquires have been notably benefited by increasing the average (median) abnormal return they earn from -0.26 per cent (-0.63 per cent) to 0.58 per cent (0.48 per cent). This could probably allow us to say that when companies award higher levels of incentive compensation to their managers, they are better able to gain value by effectively implementing any necessary changes required by regulation.

IV.D. Multivariate Regression Analysis of Cumulative Abnormal Returns.

We extend the analysis of the previous section by using a number of multivariate regressions in order to find whether bidder's cumulative abnormal returns around corporate acquisitions are affected by some specific factors (including incentive compensation) that previous research has identified as important in explaining abnormal returns. For the model specification process we follow the variables selection criteria (with the exception of the *SOX Dummy* variable) set by Datta et al. (2001) in their research in the relation of equity-based compensation and stock price performance for the period 1993-1998 in the US market. Our dependent variable is the acquirers' three-day (-1,0+1) cumulative abnormal return around acquisition announcement. As in the previous part, we include only the first observation for firms with more than one acquisition announcements on the same date. Four different versions of the following model are estimated:

$$\boldsymbol{C}AR = f\begin{pmatrix} Size, Payment, Combo, EBC, Ownership, PrevOptions, \\ Relative\ Size * EBC\ Dummy, SOX\ Dummy \end{pmatrix}$$

Size is calculated as the natural logarithm of the market capitalisation value of the bidder on the day before the acquisition announcement date. It has been shown that firm size can play a decisive role in the market reaction to corporate acquisition announcements (Bajaj and Vijh

(1995), Moeller et al. (2004)). *Payment* is a binary variable that equals 1 if the acquisition was financed only with cash and 0 otherwise. *Combo* is defined as the natural logarithm of 1 plus the sum of common and restricted stock owned by the top five executives, new stock options granted in the year before the acquisition announcement and all previous options granted divided by the total number of shares outstanding. *EBC* is the natural logarithm of 1 plus the percentage of equity-based compensation defined as the value of new stock options granted to the top-five executives in the year prior to the acquisition announcement as a percentage of the value of their total compensation. *Ownership* is the natural logarithm of 1 plus the total number of common and restricted stock owned by the top five executives divided by the shares outstanding. *PrevOptions* is defined as the natural logarithm of 1 plus the number of all previous options awarded to the top five executives divided by the total number of shares outstanding. *Relative Size* is the ratio of the market capitalization of the target to the market capitalization of the acquirer on the day prior to the acquisition announcement and *EBC Dummy* takes the value of 1 if the acquirer had been characterised as a High EBC firm (EBC above the median) and 0 otherwise. This variable Relative *Size* * *EBC Dummy* has been included in order to capture the combined effect of size and incentive compensation on market reaction. *SOX Dummy* is also a binary variable that equals 1 if the acquisition announcement was made after the enactment of the Sarbanes-Oxley Act and 0 otherwise. In addition, all variables defined above are multiplied by the latter *SOX Dummy* variable in order to identify any *differential* effect that the introduction of new corporate governance regulation has caused to the impact of those factors on abnormal returns. Natural logarithms are used in order to reduce the effect of large outliers.

The output of the regressions is presented in Table IV. The *t-statistics* are in parentheses and they are heteroskedasticity consistent according to the Davidson and MacKinnon (1993, 2004) procedure that produces robust and better results in the case of heteroskedasticity. Panel A shows that the acquirer's size is strongly negative correlated with abnormal returns around acquisition announcements in three out of the four models it has been included. This supports the evidence of Moeller et al. (2004) who also find a strong negative relation between bidder's size and cumulative abnormal returns on the acquisition announcement period. This negative relation is explained with reference to the managerial hubris hypothesis of Roll (1986) as they state that managers of large firms, driven by hubris, make acquisitions that generate negative synergies. Masulis et al. (2007) also find a significant negative effect of bidder's size on five-day CARs around acquisition announcements. The coefficients of the

Payment variable are positive and statistically significant in all four models which is according to our expectations since previous research findings have also shown that the market reacts positively to acquisitions financed with cash. However looking at the coefficients of variables *EBC, PrevOptions, Combo* and *Relative Size * EBC Dummy* we note that they are negative in all four models. This implies that not only new option grants but also all forms of equity-tied compensation are ineffective in creating value for shareholders on acquisition announcements. The evidence totally contradicts the findings of Datta et al. (2001) who document a strong positive relation between equity-based compensation and acquirers' abnormal returns. The coefficients of *SOX Dummy* imply that abnormal returns are lower in the post-SOX period but the introduction of new regulation had helped in alleviating the adverse impact of size effect since the differential slope coefficient of the *Size* variable is positive and statistically significant at the 1 per cent level. Moreover, the respective coefficients for *EBC* and *Combo* are also positive and statistical significant (at the 10 per cent level though) indicating that incentive compensation can align the interests of managers and shareholders only under effective corporate governance regulation.

In Panel B we examine the impact of the most important of the factors presented above on market reaction to acquisition announcements across different levels of executive ownership by partitioning our sample into ownership quartiles. The *Size* coefficient remains statistically negative across all levels of ownership (apart from the lowest quartile) while the *Payment* coefficient remains positive across all ownership quartiles but it loses its statistical power for high levels of ownership (Quartile 1). Regarding Quartile 1, a non-significant payment coefficient along with a statistically significant negative *PrevOptions* coefficient can add credit to previous findings that high levels of ownership can lead to managerial entrenchment and destroy corporate value (McConnell and Servaes (1990), Kim and Lu (2011)). *EBC* variable has a positive and statistical significant coefficient in Quartile 2 but its lack of statistical importance in every other ownership quartile does not make the argument that incentive-compensation adds value during acquisition announcements strong enough.

IV.E. Incentive Compensation and Long-term Post-acquisition Performance.

In the final part of our analysis we examine the implications of equity-based compensation on bidder's long-term post-acquisition performance. The latter is defined as the 2-year Buy-and-Hold return after the acquisition date. The reason for not-choosing a longer post-acquisition period is to secure the statistical validity of our results by ensuring the availability

of an adequate number of observations for the acquisitions made in the period August 2002 to December 2010. In addition, we perform a cross-sectional analysis by categorising our EBC Groups according to method of payment, growth opportunities and executive ownership.

Panel A in Table VII shows that acquirers experience a positive share price performance for the first couple of years after acquisition with an average (median) BHR of 19.54 per cent (6.00 per cent). It is quite interesting that although Low EBC firms earn a higher average long-term return (30.03 per cent) than High-EBC firms (19.94 per cent) in the pre-SOC period, this relation has been totally reversed post-SOX with high equity-based awarding firms earning an average BHR of 13.71 per cent and Low EBC acquirers only a 9.58 per cent. The evidence confirms our previous results that it is the low incentive awarding firms that have been adversely affected by the introduction of more demanding governance rules. In contrast with that, the median BHR for High EBC bidders has significantly increased from -2.05 to 8.90 per cent. The fact that for our total sample Low EBC acquirers seem to perform better than the High EBC ones with respect to 2-year BHRs is due to the considerably lower number of observations available to us for the post-SOX period.

Panel B categorises our sample by levels of equity-based compensation, means of payment and acquisition announcement period. While we have found that the market reacts more positively to cash acquisitions, both cash and non-cash deals earn positive average (median) BHRs in the long run of 19.86 per cent (7.38 per cent) and 19.20 per cent (4.46 per cent) respectively. When we categorise our sample by EBC and time period that the acquisition announcement was made, we document again a significant change in the relation between EBC levels and BHRs before and after the enactment of Sarbanes-Oxley Act for both types of deals (cash and non-cash). Regarding 100 per cent cash-financed acquisitions, before-SOX, Low EBC acquirers earn a higher average 2-year BHR (31.28 per cent) compared to that of High EBC firms (22.78 per cent). However, post-SOX, the average long-run return for Low EBC firms (11.07 per cent) is lower to that of their High EBC counterparts (14.62 per cent) (although this difference is not statistically important). Similarly, for non-cash deals, in the pre-SOX (post-SOX) period the average 2-year BHR return for Low EBC firms is higher (lower) than that of High EBC firms. All differences are statistically significant at the 1 per cent level in terms of medians.

In Panel C our sample is categorised by acquirer's Book-to-Market ratio, proportion of EBC and acquisition announcement period. Book to Market value is estimated by dividing

the book value of equity by the market capitalization value at the month-end prior to the acquisition (effective) date. Acquirers with a B/M ratio above the median are characterised as "Value" firms, otherwise they are characterised as "Glamour" firms. The latter characterisation is useful in controlling whether our results are driven from any possible endogeneity between bidder's growth prospects and high proportions of equity-based compensation (Datta et al., (2001)). Furthermore, Rau and Vermaelen (1998) have found that low Book-to-Market "Glamour" firms experience poor long-term performance in the three years following the acquisition. As with executive ownership, we exclude observations that fall outside Book-to-Market 1st and 99th percentiles so as to ensure that our results are not driven by extreme outliers. Our findings could be supportive of those of Rau and Vermaelen (1998) since the median 2-year BHR seems to be negative for most of *Glamour* acquirers in our sample and it is equal to -2.30 per cent for the period before SOX (significant at the 10 per cent level). Moreover, our earlier evidence that High EBC acquirers performs better than Low EBC firms post-SOX is also strongly confirmed here and it is robust for different levels of Book-to-Market ratio. Indeed, While Low EBC acquirers earn higher long-term returns than High EBC bidders before-SOX, after the enactment of Sarbanes-Oxley Act both Value and Glamour High EBC firms have considerably better long-term performance than their Low EBC counterparts and this difference is statistically strong both for average and median BHRs.

Panel D categorises our sample according to top-5 executives' ownership, proportion of EBC and acquisition announcement period. Since we have already discussed that high levels of executive ownership can destroy corporate value, we need to check whether the already mentioned superior performance of High EBC firms in the post-SOX period holds under different levels of ownership. If the percentage of executive ownership is above the median the acquirer it is characterised as a "High Ownership" firm, otherwise it is characterised as a "Low Ownership" one. As the results in Panel D show, our findings are robust even for different levels of executive ownership. In the pre-SOX period, Low incentive-compensation awarding bidders earn higher BHRs than High EBC acquirers but this has been totally reversed after SOX. The superior post-SOX performance of High EBC acquirers is statistically significant both for average and median BHRs.

IV.F. Multivariate Regression Analysis of 2-year Post-Acquisition Buy-and-Hold Returns.

We extend the analysis of the previous section via cross-section multivariate regressions in order to test the relation of long-term post-acquisition performance to the proportion of equity-based compensation awarded to top-five executives as well as to the period that the acquisition announcement has taken place. The dependant variable is the Long-term Post-acquisition Return (LPR) which is defined as the natural logarithm of 1 plus the acquirer's 2-year post-acquisition BHR minus the natural logarithm of 1 plus the CRSP S&P 500 Value Weighted Index BHR for the same 2-year period. In terms of model specification we follow again Datta et al. (2001) in order to draw comparable conclusions. Six different versions of the following model are estimated:

$$LPR = f\begin{pmatrix} Size, BM, Runup, Combo, EBC, Ownership, PrevOptions, \\ Relative\ Size * EBC\ Dummy, Payment, SOX\ Dummy \end{pmatrix}$$

Size, *Combo*, *EBC*, *Ownership*, *PrevOptions*, *Relative Size*EBC Dummy*, *Payment and SOX Dummy* are calculated in the same way as in the acquisition announcement 3-day CARs regressions. *Runup* is defined as the acquirer's one-year pre-acquisition BHR minus the CRSP S&P 500 Value-Weighted Index BHR for the same time period. *BM* is the natural logarithm of the acquirer's Book value of equity divided by the Market value of equity. Again, we use SOX dummy variables for all independent variables included in our model in order to capture the *differential* impact of SOX enactment on these factors with respect to long-term post-acquisition performance. The *t-statistics* are in parentheses and they are heteroskedasticity consistent according to the Davidson and MacKinnon (1993, 2004) method.

The results in table VIII extend the already documented negative relation between bidder's size and acquisition announcement returns since there is strong statistical evidence that acquirer's size is negative related to long-term post-acquisition performance. The coefficients of *BM* are also supportive of our previous findings indicating a strong positive relation between bidder's Book-to-Market ratio and long-run post-acquisition performance. This further strengthens the findings of Rau and Vermaelen (1998) that it is mainly the low Book-to-Market "Glamour" firms which are responsible for the poor long-term performance following corporate acquisitions. *Runup* shows that exceptional pre-acquisition performance leads to poor-performance in the long-run post-acquisition period which can justify Jensen's

(1988) Free Cash Flow theory according to which managers may use the free cash flow generated by good pre-acquisition performance to overpay for value-destroying acquisitions. When we analyse *Combo* variable (Model 1) into its three components, *EBC, Ownership* and *PrevOptions* (Models 2,3,5 and 6) we note that its strong negative relation to long-term performance is due to an adverse impact on corporate value caused by high executive ownership (Morck, Shleifer, and Vishny (1988), McConnell and Servaes (1990), Kim and Lu, (2011)) and a negative effect that previous options granted appear to have on long-run performance. The latter is quite an interesting point since, along with the insignificant coefficients of EBC variable indicate that equity-based compensation is not only capable of creating value in the long-run but also equity-tied compensation granted more than a year prior to the investment decision can destroy value! While we have already seen that firms awarding high levels of incentive compensation react better in changes of corporate governance regulation, incentive compensation it seems ineffective in aligning the interests of managers with those of managers in the long-term without good governance. Finally, cash acquisitions create value both around acquisition announcement and in the 2-year long-run period following the acquisition.

Yet, how does the introduction of new governance regulation affect acquirer's long term performance? The *differential SOX* coefficient of *BM* variable (*BM D SOX*) is statistically significant negative in all models indicating that high Book-to-Market firms have been adversely affected by changes in regulation. While as we have seen "Glamour" firms are those who tend to perform poor in the long-term, they are also those who are less vulnerable to new regulation. Moreover, the positive *differential* coefficient of *Runup* implies that the enactment of Sarbanes-Oxley Act has motivated (or forced) many managers of good-past performers acquirers to take better acquisition decisions that generate value (probably via identifying better synergies) in the long-term. The economically and statistically significant positive *differential* coefficient of *Combo* supports our argument that firms who award higher proportions of equity-tied compensation are better-off in the post-SOX period. However, analysing the components of *Combo* we find that this is not due neither to newly nor previously granted stock options but mainly due to the efficiency of regulators in mitigating the non-value maximising behaviour of entrenched directors via the establishment of new corporate governance rules.

V. Summary and Conclusion

Our analysis of 8,680 mergers and acquisition made by U.S. firms from January 1993 until December 2010 has verified some of the findings of previous research such as the positive reaction of the market to cash acquisitions and the negative relation between bidder's size and post-acquisition performance. More importantly though, it has shown that providing incentives to managers in the form of equity-based compensation can be quite useful in some occasions but its value as an agency cost mitigating mechanism has probably been overestimated. Highly equity-based compensated managers consistently acquire targets with better growth opportunities, in line with shareholders' interests. However, post-SOX they have become considerably more conservative having significantly reduced the risky investment decisions they make. This seems to be in accordance with the general reduction of corporate-risk taking activities observed in the same period though (Cohen et al. (2012), Bargeron et al. (2010)).

The argument in favour of a positive relation between equity-based compensation and firm value cannot also explain some evidence found before the enactment of Sarbanes-Oxley Act. For that time period, High EBC acquirers pay significantly higher premiums than their Low EBC counterparts. The introduction of additional corporate governance regulation has bproved more effective than incentive compensation in minimizing the value-destroying behaviour of managers during corporate acquisitions since both types of firms reduce the premiums they pay post-SOX. Probably, managers have become more careful in selecting targets since SOX has increased their accountability regarding the process they follow in investment decisions (Brigida and Madura, 2012). The introduction of Sarbanes-Oxley Act also appears to have corrected a few other "anomalies" reducing the impact of managerial hubris or/and entrenchment. Before July of 2002, Low EBC bidders earn higher abnormal return and experience superior long-term post-acquisition performance than High EBC acquirers. In the post-SOX period though, we document no statistically significant difference in market reaction to acquisitions made by these two groups of acquirers. What is more, High EBC awarding bidders outperform those that award lower levels of incentive compensation to their managers in the long-run following the acquisition date.

Proponents of incentive compensation firms can still claim that it is the managers with a high proportion of equity-based compensation that can handle changes in corporate governance regulation more effectively leading their firms to a more stable or even improved

performance. On the other hand, Low EBC firms look more vulnerable to regulation changes as their managers either lack the ability, or the motivation, to maintain performance at the same levels as before. However, if an internal agency-cost mitigating mechanism (incentive compensation) requires some strong external governance mechanism (regulation) in order to work effectively, its fundamentals can easily be questioned. And although newly awarded stock options (in the year preceding the acquisition) show some effectiveness in improving managerial decision taking psot-SOX, this does not appear to be the case with options granted in previous years. Having found no positive evidence between previous options granted (which is still an equity-based form of compensation) and firm performance the question that arises is how such an incentive mechanism can become more effective in the long-term. Bystrom (2012) proposes that executive compensation should be asset-based rather than equity based so as a stronger link with actual long-term performance can be achieved. This could be more applicable however to firms whose debt accounts for a relatively high percentage of their total assets such as financial institutions and banks. Edmans et al. (2012) have recently developed an alternative incentive-compensation model according to which CEOs wealth depends both to their current period as well as to their future periods' effort in order to deter myopia. What can be confidently said is that there still plenty room for research in this area. Since we have already shown a significant change in the relationship between equity-based compensation and firm performance post-SOX, an interest topic of future investigation is to identify the determinants of this change.

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Table I
Distribution and Descriptive Statistics of Corporate Acquisitions
1993-2010

The sample consists of 8,680 acquisitions completed during the period January 1, 1993, to December 31, 2010. The firms are listed in the Thomson One database for Mergers and Acquisitions and have executive compensation data available in the Standard and Poor's ExecuComp database. Deal value is taken from the Thomson One database and refers to deal value at announcement date. Cash refers to corporate acquisitions financed with cash only. Equity refers to corporate acquisitions paid 100 per cent with stock. Other refers to a combination of cash, equity and other method of financing. Market capitalisation is measured on the day prior to the acquisition announcement date using CRSP. Market-to-book ratio is based at the month-end prior to the acquisition announcement date using Compustat as book value of total assets minus book value of equity plus market value of equity divided by book value of total assets. Acquisition premium is defined by the Thomson One database as the difference between the highest price paid per share and the target share price four weeks prior to the announcement date as a percentage of the target share price four weeks prior to the announcement. The number of observations in panel B is not equal because not all target firms were publicly traded at the time of acquisition.

Panel A: Distribution of Corporate Acquisition Announcements by Year & Method of Payment

Year	Number of Acquisitions	% of Sample	Avg. Deal Value ($ Millions)	Cash	% of Year	Equity	% of Year	Other	% of Year
1993	343	4.0%	98.33	130	(37.9%)	117	(34.1%)	96	(28.0%)
1994	379	4.4%	167.07	163	(43.0%)	114	(30.1%)	102	(26.9%)
1995	383	4.4%	297.04	150	(39.2%)	126	(32.9%)	107	(27.9%)
1996	501	5.8%	287.59	197	(39.3%)	162	(32.3%)	142	(28.3%)
1997	617	7.1%	322.82	231	(37.4%)	207	(33.5%)	179	(29.0%)
1998	659	7.6%	570.68	262	(39.8%)	216	(32.8%)	181	(27.5%)
1999	673	7.8%	740.59	304	(45.2%)	204	(30.3%)	165	(24.5%)
2000	597	6.9%	714.79	246	(41.2%)	167	(28.0%)	184	(30.8%)
2001	464	5.3%	520.70	238	(51.3%)	70	(15.1%)	156	(33.6%)
2002	496	5.7%	299.89	275	(55.4%)	37	(7.5%)	184	(37.1%)
2003	501	5.8%	340.19	317	(63.3%)	27	(5.4%)	157	(31.3%)
2004	535	6.2%	545.42	320	(59.8%)	30	(5.6%)	185	(34.6%)
2005	525	6.0%	800.33	319	(60.8%)	20	(3.8%)	186	(35.4%)
2006	492	5.7%	804.91	344	(69.9%)	19	(3.9%)	129	(26.2%)
2007	516	5.9%	503.21	344	(66.7%)	11	(2.1%)	161	(31.2%)
2008	392	4.5%	616.22	270	(68.9%)	15	(3.8%)	107	(27.3%)
2009	284	3.3%	1,059.31	181	(63.7%)	14	(4.9%)	89	(31.3%)
2010	323	3.7%	427.01	245	(75.9%)	5	(1.5%)	73	(22.6%)
Total	8680	100.0%	514.29	4536	(52.3%)	1561	(18.0%)	2583	(29.8%)

Panel B: Descriptive Statistics

Deal Characteristics	All Acquisitions	01/1993-07/2002	08/2002-12/2010	*t/z statistic for Difference*
Acquirer market capitalisation ($ millions)				
Mean	11,942	10,835	13,384	*-3.26****
Median	1,875	1,602	2,236	*11.44****
Observations	8,680	4,911	3,769	
Target market capitalisation ($ millions)				
Mean	1,218	913	1,605	*-3.09****
Median	254	229	318	*2.55***
Observations	1,374	769	605	
Acquirer market-to-book-ratio				
Mean	2.22	2.54	1.81	*12.74****
Median	1.54	1.58	1.52	*-5.17****
Observations	8,562	4,831	3,731	
Acquisition Premium (%)				
Mean	47.21	48.14	45.54	*0.60*
Median	36.10	39.47	31.15	*-4.94****
Observations	1,798	1,156	642	

***,**,* indicate significance at the 1 per cent, 5 per cent and 10 per cent levels, respectively.

Table II
Compensation Characteristics of Acquirers' Top Five Executives

The sample consists of 8,680 acquisitions completed during the period January 1, 1993, to December 31, 2010. The firms are listed in the Thomson One database for Mergers and Acquisitions and have executive compensation data available in the Standard and Poor's ExecuComp database. All compensation data has been sampled at the year-end preceding the corporate acquisition announcement. Under the 1992 reporting format, total compensation is defined as the sum of salary, bonus, other annual short-term compensation, total value of restricted stock granted, total value of stock options granted (using the Black-Scholes value), long-term incentives payouts and all other long-term compensation. Under the 2006 new reporting format, total compensation is defined as the sum of salary, bonus, non-equity incentive plan compensation, grant-date fair value of option awards, grant-date fair value of stock awards, deferred compensation earnings reported as compensation and other compensation awarded to the top five executives. Equity-based compensation is the sum of the fair value of new stock options awarded to the top five executives as a percentage of total compensation paid to them. Out of 8,680 acquisitions in the sample, bidders awarded new stock option grants in 7,083 acquisitions.

Panel A: (1992 Reporting Format)

Compensation ($ 000s)	Mean	Median	Observations	Percentage
Salary	1,808.84	1,644.14	7,242	99.82%
Bonus	2,080.50	1,060.37	6,834	94.20%
Other annual (short term)	141.57	0.00	3,118	42.98%
Restricted stock granted	1,143.93	0.00	2,169	29.90%
Stock options granted	7,022.83	1,990.92	6,117	84.31%
Long-term incentive plan payouts	421.39	0.00	1,129	15.56%
All other (long term)	369.95	80.00	6,609	91.10%
Total Compensation	12,850.34	6,154.41	7,255	100.00%
Equity-based compensation (%)	37.31	34.80	6,117	84.31%

Panel B: (2006 Reporting Format)

Compensation ($ 000s)	Mean	Median	Observations	Percentage
Salary	2,419.07	2,150.00	1,421	99.72%
Bonus	1,254.91	13.50	733	51.44%
Non-equity incentive plan compensation	3,000.75	1,395.48	1,117	78.39%
Grant-date fair value of option awards	4,552.00	1,460.57	966	67.79%
Grant-date fair value of stock awards	5,067.66	1,945.86	1,029	72.21%
Deferred compensation earnings reported as compensation	71.82	0.00	96	6.74%
Other Compensation	724.93	277.86	1,409	98.88%
Total Compensation	17,025.99	9,696.31	1,425	100.00%
Equity-based compensation (%)	21.10	18.21	964	67.65%

Table III
Target Market-to-Book and Acquirer Risk

The sample consists of 8,680 acquisitions completed during the period January 1, 1993, to December 31, 2010. The firms are listed in the Thomson One database for Mergers and Acquisitions and have executive compensation data available in the Standard and Poor's ExecuComp database. All compensation data has been sampled at the year-end prior to the corporate acquisition announcement. High EBC refers to firms whose percentage of equity-based compensation is higher than the median; otherwise the firms are classified as low EBC firms. Market-to-book ratio is based at the month-end prior to the acquisition announcement date using Compustat as book value of total assets minus book value of equity plus market value of equity divided by book value of total assets. The standard deviation of stock returns is computed during two time periods: the post-acquisition period (11 to 70 days after the effective date) and the pre-acquisition period (120 days to 60 days prior to the effective date). Leverage increase is measured as the change in the ratio of the acquiring firm's long-term debt to total assets from the year-end preceding the acquisition to the acquisition year-end. The number of observations in the subsamples is not equal because firms are categorised as low- or high-EBC firms based on the median for the full sample of 8,680 acquisitions. The *t*-statistic is from the *t*-test of difference between means. The *z*-statistics are from the Wilcoxon rank sum test for difference between the respective distributions

Panel A: Target Market-to-Book Ratio

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Mean	1.94	2.46	1.46	2.60	1.44	2.18	1.48	2.09	1.74	2.60	2.18	1.44	1.48
Median	1.26	1.46	1.16	1.31	1.17	1.87	1.14	1.22	1.28	1.31	1.87	1.17	1.14
Observations	292	140	152	93	73	47	79	166	126	93	47	73	79
t statistic		*3.12****		*2.48***		*3.05****		*1.24*		*0.83*		*-0.31*	
z statistic		*3.14****		*1.65**		*3.25****		*0.78*		*1.50*		*0.11*	

Panel B: Post-acquisition Minus Pre-acquisition Stock Return Standard Deviation

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Mean	-0.07%	0.06%	-0.17%	0.14%	-0.44%	-0.09%	0.13%	-0.15%	0.04%	0.14%	-0.09%	-0.44%	0.13%
Median	-0.01%	-0.04%	0.02%	0.01%	0.02%	-0.11%	0.01%	0.01%	-0.03%	0.01%	-0.11%	0.02%	0.01%
Observations	8,344	3,851	4,493	2,379	2,363	1,472	2,130	4,742	3,602	2,379	1,472	2,363	2,130
t statistic		*2.55***		*3.80****		*-3.57****		*-2.29***		*2.93****		*-3.93****	
z statistic		*-2.60****		*1.11*		*-5.57****		*-2.65****		*-4.88****		*0.94*	

Panel C: Post-acquisition Minus Pre-acquisition Stock Return Standard Deviation Categorized by Change in Leverage Following the Acquisition

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Leverage Increase													
Mean	-0.08%	0.02%	-0.15%	0.11%	-0.35%	-0.12%	0.06%	-0.13%	-0.01%	0.11%	-0.12%	-0.35%	0.06%
Median	-0.04%	-0.06%	-0.02%	-0.02%	0.03%	-0.12%	-0.06%	0.01%	-0.07%	-0.02%	-0.12%	0.03%	-0.06%
Observations	3,338	1,496	1,842	904	947	592	895	1,851	1,487	904	592	947	895
t statistic		*-1.29*		*1.97***		*-2.36***		*-0.93*		*1.82**		*-1.96**	
z statistic		*-1.15*		*0.18*		*-2.16***		*-3.79****		*-3.38****		*-2.11***	
No leverage increase													
Mean	-0.07%	0.04%	-0.15%	0.05%	-0.44%	0.02%	0.20%	-0.22%	0.14%	0.05%	0.02%	-0.44%	0.20%
Median	0.03%	-0.02%	0.04%	0.01%	0.01%	-0.07%	0.08%	0.01%	0.04%	0.01%	-0.07%	0.01%	0.08%
Observations	3,510	1,449	2,061	932	1,128	517	933	2,060	1,450	932	517	1,128	933
t statistic		*1.49*		*2.26***		*-2.35***		*-2.96****		*0.19*		*-3.26****	
z statistic		*-1.70**		*0.88*		*-3.69****		*1.41*		*-1.57*		*3.20****	

***,**,* indicate significance at the 1 per cent, 5 per cent and 10 per cent levels, respectively.

Table IV
Acquisition Premium Categorised by Past Performance, Means of Payment and EBC

The sample consists of 8,680 acquisitions completed during the period January 1, 1993, to December 31, 2010. The firms are listed in the Thomson One database for Mergers and Acquisitions and have executive compensation data available in the Standard and Poor's ExecuComp database. All compensation data has been sampled at the year-end preceding the corporate acquisition announcement. High EBC refers to firms whose percentage of equity-based compensation is higher than the median; otherwise the firms are classified as low EBC firms. Pre-acquisition performance is measured as the one-year buy-and-hold stock return (BHR) prior to the acquisition announcement. Good performers are firms with one-year BHR above the median. Cash refers to acquisitions financed with only with cash. Noncash acquisitions are financed by a combination of cash and/or equity and debt. The number of observations in the subsamples is not equal because firms are categorised as low- or high-EBC firms based on the median for the full sample of 8,680 acquisitions and because not all target firms were publicly traded at the time of acquisition. The t-statistic is from the t-test of difference between means. The *z*-statistics are from the Wilcoxon rank sum test for difference between the respective distributions

Panel A: Acquisition Premium (%)

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Mean	47.21	49.72	44.84	51.75	44.07	44.94	45.94	48.14	45.54	51.75	44.94	44.07	45.94
Median	36.10	38.73	34.58	42.35	36.99	32.56	29.39	39.47	31.15	42.35	32.56	36.99	29.39
Observations	1798	874	924	613	543	261	381	1156	642	613	261	543	381
t statistic		*1.28*		*1.96**		*-0.14*		*0.6*		*1.16*		*-0.33*	
z statistic		*2.82***		*2.29***		*1.07*		*-4.94****		*-3.74****		*-3.01****	

Panel B: Acquisition Premium Cateogirsed by Preacquisition Stock Performance and EBC

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
Preacquisition Performance	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Good performers													
Mean	43.80	46.34	41.30	50.47	43.23	35.43	37.46	46.97	36.55	50.47	35.43	43.23	37.46
Median	36.04	38.69	34.45	42.75	36.99	31.22	28.66	39.10	29.16	42.75	31.22	36.99	28.66
Observations	860	426	434	309	289	117	145	598	262	309	117	289	145
t statistic		*1.86**		*2.21***		*-0.48*		*3.72****		*4.26****		*1.40*	
z statistic		*2.24***		*2.14***		*0.65*		*-4.89****		*-3.80****		*-3.06****	
Poor performers													
Mean	50.97	53.67	48.53	54.18	45.35	52.65	51.84	50.14	52.15	54.18	52.65	45.35	51.84
Median	36.11	38.68	34.82	42.93	36.32	32.96	33.50	40.00	33.02	42.93	32.96	36.32	33.50
Observations	890	423	467	282	238	141	229	520	370	282	141	238	229
t statistic		*0.70*		*1.15*		*0.06*		*-0.27*		*0.13*		*-0.71*	
z statistic		*1.74**		*1.24*		*0.81*		*-2.40***		*-1.80**		*-1.38*	

Panel C: Acquisition Premium Categorised by Means of Payment

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
Mean of Payment	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Cash													
Mean	53.63	51.39	55.73	49.37	41.59	53.43	66.81	45.61	60.73	49.37	53.43	41.59	66.81
Median	38.11	38.12	38.01	43.54	36.17	33.14	39.83	39.47	37.26	43.54	33.14	36.17	39.83
Observations	560	271	289	136	127	135	162	263	297	136	135	127	162
t statistic		*-0.50*		*1.66**		*-0.87*		*-1.83**		*-0.41*		*-1.98***	
z statistic		*0.31*		*1.66**		*-1.32*		*-0.17*		*-1.67**		*1.40*	
Noncash													
Mean	44.31	48.97	39.89	52.43	44.83	35.86	30.51	48.89	32.46	52.43	35.86	44.83	30.51
Median	35.33	38.97	32.82	42.17	37.06	30.23	25.37	39.46	27.62	42.17	30.23	37.06	25.37
Observations	1238	603	635	477	416	126	219	893	345	477	126	416	219
t statistic		*2.34***		*1.56*		*1.6*		*5.43****		*3.21****		*5.08****	
z statistic		*3.17****		*1.65*		*2.08***		*-6.82****		*-3.76****		*-5.41****	

***,**,* indicate significance at the 1 per cent, 5 per cent and 10 per cent levels, respectively.

Table V
Three-Day (-1,0,+1) Acquirer's Cumulative Abnormal Returns at Acquisition Announcement

The sample consists of 8,680 acquisitions completed during the period January 1, 1993, to December 31, 2010. We include only the first observation for firms with more than one acquisition announcements on the same date. Thus, the final sample consists of 8,277 observations. The three-day (-1,0,+1) cumulative abnormal returns (CARs) have been computed using the market model estimated by OLS regression:

$$R_{i,t}^{'} = a + \beta_i R_{M,t} + \varepsilon_t$$

The estimation period is measured from 200 days to 60 days prior to the acquisition announcement date. The firms are listed in the Thomson One database for Mergers and Acquisitions and have executive compensation data available in the Compustat ExecuComp database. All compensation data has been sampled at the year-end preceding the corporate acquisition announcement. High EBC refers to firms whose percentage of equity-based compensation is higher than the median; otherwise the firms are classified as low EBC firms. Cash refers to acquisitions financed with 100 per cent cash. Noncash acquisitions are financed by a combination of cash and/or equity and debt. The number of observations in the subsamples is not equal because firms are identified as low- or high-EBC firms based on the median for the full sample of 100 acquisitions. Ownership is defined as the total number of common and restricted stock owned by the top five executives at the year –end before the acquisition divided by the total number of stocks outstanding. The t-statistics are from the *t*-test of difference between means. The *z*-statistics are from the Wilcoxon rank sum test for difference between respective distributions. For individual samples statistical significance is estimated using the one-sample *t*-test for mean = (≠) 0 and the Wilcoxon signed rank sum test for median = (≠) 0.

Panel A: CARs Categorised by Proportion of EBC

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Mean	0.48%***	0.04%	0.85%***	-0.01%	1.38%***	0.13%	0.30%	0.68%***	0.23%	-0.01%	0.13%	1.38%***	0.30%
Median	0.08%*	-0.03%	0.16%***	-0.16%	0.12%	0.14%	0.19%**	0.00%	0.17%***	-0.16%	0.14%	0.12%	0.19%**
Observations	8277	3805	4472	2323	2296	1482	2176	4619	3658	2323	1482	2296	2176
t statistic		*-3.64****		*-3.99****		*-0.64*		*1.99***		*-0.62*		*2.86****	
z statistic		*-3.11****		*-3.38****		*-0.71*		*1.23*		*1.79**		*-0.36*	

Panel B: CARs Categorised by Means of Payment and Proportion of EBC

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
Mean of Payment	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Cash													
Mean	0.78%***	0.62%***	0.92%***	0.76%***	1.68%***	0.48%**	0.39%	1.22%***	0.43%**	0.76%***	0.48%**	1.68%***	0.39%
Median	0.39%***	0.39%***	0.39%***	0.39%**	0.42%***	0.37%***	0.38%***	0.41%***	0.38%***	0.39%**	0.37%***	0.42%***	0.38%***
Observations	4340	1939	2401	968	984	971	1417	1952	2388	968	971	984	1417
t statistic		*-1.10*		*-2.22***		*0.24*		*2.75****		*1.01*		*2.69****	
z statistic		*-0.19*		*-0.78*		*0.38*		*-1.13*		*-0.23*		*-1.39*	
Noncash													
Mean	0.15%	-0.55%***	0.78%**	-0.56%**	1.15%**	-0.53%*	0.13%	0.28%	-0.13%	-0.56%**	-0.53%*	1.15%**	0.13%
Median	-0.25%***	-0.52%***	-0.08%	-0.60%***	-0.08%	-0.45%*	-0.10%	-0.29%***	-0.18%**	-0.60%***	-0.45%*	-0.08%	-0.10%
Observations	3937	1866	2071	1355	1312	511	759	2667	1270	1,355	511	1,312	759
t statistic		*-3.72****		*-3.28****		*-1.88**		*1.35*		*-0.07*		*2.01***	
z statistic		*-4.07****		*-3.74****		*-1.74**		*0.53*		*0.67*		*-0.35*	

Table V - *continued*

Panel C: CARs Categorised by Top-5 Executives Ownership and Proportion of EBC

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
Ownership	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Quartile 1 (Highest Own.)													
Mean	0.81%**	0.11%	1.37%**	-0.13%	2.39%***	0.49%	0.52%	1.09%**	0.51%	-0.13%	0.49%	2.39%***	0.52%
Median	0.36%***	0.08%	0.52%***	-0.14%	0.77%***	0.51%	0.29%*	0.37%	0.32%**	-0.14%	0.51%	0.77%***	0.29%*
Observations	1857	822	1035	503	471	319	564	974	883	503	319	471	564
t statistic		*-2.07***		*-2.64****		*-0.05*		*0.89*		*-1.27*		*1.67**	
z statistic		*-2.70****		*-3.55****		*-0.03*		*-0.28*		*1.38*		*-2.18***	
Quartile 2													
Mean	0.43%**	0.47%*	0.40%*	0.73%**	0.25%	0.05%	0.52%	0.51%**	0.35%	0.73%**	0.05%	0.25%	0.52%
Median	0.25%**	0.16%	0.29%**	0.29%	0.03%	0.12%	0.50%***	0.10%	0.30%**	0.29%	0.12%	0.03%	0.50%***
Observations	1880	848	1032	515	448	333	584	963	917	515	333	448	584
t statistic		*0.17*		*1.06*		*-0.83*		*0.43*		*1.18*		*-0.61*	
z statistic		*-0.53*		*0.69*		*-1.48*		*0.81*		*-0.56*		*1.59*	
Quartile 3													
Mean	0.21%	0.09%	0.30%**	-0.26%	0.36%*	0.58%*	0.25%	0.06%	0.37%**	-0.26%	0.58%*	0.36%*	0.25%
Median	-0.06%	-0.15%	-0.02%	-0.63%***	-0.08%	0.48%**	0.14%	-0.29%**	0.26%*	-0.63%***	0.48%**	-0.08%	0.14%
Observations	1889	820	1069	480	520	340	549	1000	889	480	340	520	549
t statistic		*-0.74*		*-1.47*		*0.90*		*-1.17*		*-1.75**		*0.39*	
z statistic		*-0.85*		*-2.11***		*1.48*		*2.38***		*2.97****		*0.28*	
Quartile 4 (Lowest Own.)													
Mean	-0.27%*	-0.38**	-0.15%	-0.37%	-0.10%	-0.38%	-0.21%	-0.25%	-0.30%*	-0.37%	-0.38%	-0.10%	-0.21%
Median	-0.14%	-0.13%	-0.15%	-0.10%	-0.16%	-0.18%	-0.07%	-0.15%	-0.13%	-0.10%	-0.18%	-0.16%	-0.07%
Observations	1883	1022	861	591	485	431	376	1076	807	591	431	485	376
t statistic		*-0.75*		*-0.58*		*-0.52*		*0.17*		*0.01*		*0.25*	
z statistic		*-0.62*		*-0.60*		*-0.41*		*-0.04*		*-0.03*		*0.06*	

***,**,* indicate significance at the 1 per cent, 5 per cent and 10 per cent levels, respectively.

Table VI
Multivariate Regression Coefficients Explaining the Three-Day (-1,0,+1) Cumulative Abnormal Returns to Acquiring Firms Around Corporate Acquisition Announcements

The sample consists of 8,680 acquisitions completed during the period January 1, 1993, to December 31, 2010. The dependent variable is the three-day (-1,0,+1) announcement period CAR of the acquiring firms. *Size* denotes the natural logarithm of the CRSP market capitalisation of the acquiring firm on the day preceding the announcement date. *Payment* is a binary variable taking the value of 1 if the acquisition was financed with cash only and 0 if not. *Combo* refers to the natural logarithm of 1 + the sum of all options granted and stock ownership of the top five executives of the acquirer as a ratio of total shares outstanding. *EBC* is the natural logarithm of 1 + equity-based compensation, where equity-based compensation refers to the sum of the fair value of new stock options awarded to the top five executives for each acquiring firm as a percentage of total compensation received at the year-end preceding the acquisition. *Ownership* is the natural logarithm of 1 + the sum of previously granted/acquired common and restricted stock owned by the top five executives of the acquiring firm at the year-end prior to the announcement as a ratio of total shares outstanding. *PrevOptions* is the natural logarithm of 1 + the sum of all prior option grants received by the top five executives of the acquiring firm as a ratio of total shares outstanding. *Relative size * EBC dummy* is an interaction term, in which *Relative size* is the ratio of the target firm to the acquiring firm's market capitalisation on the day prior to the acquisition announcement date. *EBC dummy* is a binary term that equals 1 if the firm is classified as a high EBC firm (proportion of EBC greater than the median for the full sample of 8.680 acquisitions), and 0 otherwise. SOX Dummy is a binary variable that equals 1 if the acquisition announcement was made after the enactment of the Sarbanes-Oxley Act and 0 otherwise. Ownership is the natural logarithm of 1 plus the total number of common and restricted stock owned by the top five executives divided by the shares outstanding. Quartile 1 is the highest ownership quartile and Quartile 4 the lowest. SOX Dummies are also used for all variables defined above to capture the differential effect of the SOX enactment. The t-statistics are in parentheses and heteroskedasticity consistent according to Davidson and MacKinnon (1993 and 2004) procedure.

Panel A: Multivariate Regressions Explaining Cumulative Abnormal Returns to Acquiring Firms Around Acquisition Announcements

Variables	Model 1	Model 2	Model 3	Model 4
Intercept	0.202	0.222	0.136	0.029
	*(5.69)****	*(5.34)****	*(4.36)****	*(0.60)*
Size	-0.009	-0.010	-0.007	-0.002
	*(-6.29)****	*(-5.56)****	*(-5.26)****	*(-0.92)*
Payment	0.010	0.010	0.013	0.031
	*(3.14)****	*(3.09)****	*(4.61)****	*(4.61)****
Combo		-0.044		
		*(-1.80)**		
EBC	-0.004		0.001	
	*(-1.99)***		*(0.94)*	
Ownership			0.052	-0.127
			(1.07)	*(-0.97)*
PrevOptions			-0.066	-0.126
			*(-1.74)**	*(-1.05)*
*Relative Size * EBC Dummy*				-0.066
				*(-2.41)***
SOX Dummy	-0.152	-0.178	-0.087	-0.021
	*(-3.31)****	*(-3.65)****	*(-2.21)***	*(-0.37)*
Size D SOX	0.006	0.008	0.004	0.001
	*(3.37)****	*(3.67)****	*(2.61)****	*(0.27)*
Payment D SOX	-0.004	-0.004	-0.007	-0.008
	(-0.88)	*(-0.83)*	*(-1.74)**	*(-1.04)*
Combo D SOX		0.060		
		*(1.85)**		
EBC D SOX	0.004		-0.001	
	*(1.76)**		*(-0.69)*	
Ownership D SOX			-0.016	0.141
			(-0.16)	*(0.94)*
PrevOptions D SOX			0.054	0.006
			(0.73)	*(0.04)*
*(Relative Size * EBC Dummy) D SOX*				0.043
				(1.39)
R^2 adjusted	0.02	0.01	0.01	0.07
F-statistic	10.79	9.05	8.16	7.04
p-value	0.00	0.00	0.00	0.00
Observations	8277	8273	7509	1134

Table VI – *continued*

Panel B: Multivariate Regressions Explaining Three-Day Cumulative Abnormal Returns to Acquiring Firms Around Acquisition Announcements Categorised by Top-Five Executives' Ownership

Variables	Quartile 1 (Highest Ownership)	Quartile 2	Quartile 3	Quartile 4 (Lowest Ownership)
Intercept	0.271	0.109	0.181	0.037
	*(2.30)***	*(2.57)***	*(4.77)****	*(0.72)*
Size	-0.013	-0.006	-0.009	-0.002
	*(-2.57)***	*(-2.86)****	*(-4.78)****	*(-1.13)*
Payment	0.013	0.010	0.013	0.015
	(1.51)	*(2.22)***	*(3.34)****	*(3.38)****
EBC	0.000	0.004	0.001	0.001
	(0.03)	*(2.38)***	*(0.27)*	*(0.31)*
PrevOptions	-0.121	0.049	-0.083	-0.052
	*(-1.68)**	*(0.72)*	*(-1.18)*	*(-0.32)*
SOA Dummy	-0.211	-0.029	-0.142	-0.029
	(-1.35)	*(-0.48)*	*(-2.69)****	*(-0.51)*
Size D SOA	0.010	0.002	0.007	0.001
	(1.49)	*(0.69)*	*(2.79)****	*(0.63)*
Payment D SOA	-0.016	-0.002	-0.007	-0.003
	(-1.24)	*(-0.22)*	*(-1.22)*	*(-0.53)*
EBC D SOA	0.000	-0.002	0.000	-0.001
	(-0.06)	*(-0.90)*	*(-0.19)*	*(-0.47)*
PrevOptions D SOA	0.15	-0.20	0.15	0.12
	(1.07)	*(-2.70)**	*(1.14)*	*(0.57)*
R^2_{adjusted}	0.01	0.01	0.03	0.01
F-statistic	2.16	3.30	4.94	4.08
p-value	0.02	0.00	0.00	0.00
Observations	1857	1880	1889	1883

****, **, * denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively*

Table VII
Two-year Buy-and-Hold Post-Acquisition Performance for Acquiring Firms

The sample consists of 8,680 acquisitions completed during the period January 1, 1993, to December 31, 2010. The sample has been restricted to 7,126 observations since there was not stock-price data available for 2 years following the acquisition for all firms. The buy-and-hold return on stock *i*, BHR_i, is calculated as

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

where $t = 1$ represents the first day of trading following the effective date of the acquisition, $R_{i,t}$ indicates the stock price return of firm *i* on day *t* and T_i is the two-year anniversary date of the effective acquisition date. The firms are listed in the Thomson One database for Mergers and Acquisitions and have executive compensation data available in the Compustat ExecuComp database. All compensation data has been recorded at the year-end preceding the corporate acquisition announcement. High EBC refers to firms whose percentage of equity-based compensation is higher than the median; otherwise the firms are classified as low EBC firms. Cash refers to acquisitions financed with 100 per cent cash. Noncash acquisitions are financed by a combination of cash and/or equity and debt. Book to Market value is estimated by dividing the book value of equity by the market capitalization value at the month-end prior to the acquisition effective date. Acquirers with a B/M ratio above the median are characterised as "Value" firms, otherwise they are characterised as "Glamour" firms. Ownership is classified as the sum of previously granted/acquired common and restricted stock owned by the top five executives at the year-end prior to the announcement as a ratio of total shares outstanding. Firms are identified as low ownership if executive equity ownership is equal to or below the median; all others are classified as high ownership firms. The number of observations in the subsamples is not equal because firms are identified as low- or high-EBC firms based on the median for the full sample of 8,680 acquisitions. The t-statistics are from the *t*-test of difference between means. The *z*-statistics are from the Wilcoxon rank sum test for difference between respective distributions. For individual samples statistical significance is estimated using the one-sample *t*-test for mean = (≠) 0 and the Wilcoxon signed rank sum test for median = (≠) 0.

Panel A: 2-year BHRs Categorised by Proportion of EBC and Acquisition Announcement Period

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Mean	19.54%***	17.60%***	21.28%***	19.94%***	30.03%***	13.71%***	9.58%***	25.04%***	11.40%***	19.94%***	13.71%***	30.03%***	9.58%***
Median	6.00%***	2.58%*	8.54%***	-2.05%	14.53%***	8.90%***	-0.25%	7.32%***	3.92%***	-2.05%	8.90%***	14.53%***	-0.25%
Observations	7126	3371	3755	2105	2148	1266	1607	4253	2873	2105	1266	2148	1607
t statistic		*-1.69**		*-3.10****		*1.87**		*6.91****		*2.05***		*8.18****	
z statistic		*-4.93****		*-8.86****		*3.78****		*-2.78****		*4.38****		*-8.35****	

Panel B: 2-year BHRs Categorised by Means of Payment, Proportion of EBC and Acquisition Announcement Period

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
Means of Payment	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Cash													
Mean	19.86%***	18.88%***	20.73%***	22.78%***	31.28%***	14.62%***	11.07%***	27.09%***	12.66%***	22.78%***	14.62%***	31.28%***	11.07%***
Median	7.38%***	4.67%***	8.63%***	-1.60%	16.38%***	9.77%***	1.33%	8.39%***	5.47%***	-1.60%	9.77%***	16.38%***	1.33%
Observations	3687	1734	1953	905	933	829	1020	1838	1849	905	829	933	1020
t statistic		*-0.65*		*-1.74**		*1.33*		*5.19****		*1.82**		*6.13****	
z statistic		*-2.52***		*-5.89****		*2.71****		*-2.52***		*2.84****		*-6.28****	
Noncash													
Mean	19.20%***	16.24%***	21.88%***	17.79%***	29.08%***	11.98%***	6.98%**	23.47%***	9.11%***	17.79%***	11.98%***	29.08%***	6.98%**
Median	4.46%***	-0.26%	8.21%***	-2.57%*	13.91%***	7.09%**	-3.17%	5.99%***	1.28%	-2.57%*	7.09%**	13.91%***	-3.17%
Observations	3439	1637	1802	1200	1215	437	587	2415	1024	1,200	437	1,215	587
t statistic		*-1.69**		*-2.58****		*1.29*		*4.88****		*1.33*		*5.70****	
z statistic		*-4.47****		*-6.68****		*2.61****		*-2.30***		*2.64****		*-6.06****	

Panel C: 2-year BHRs Categorised by Book to Market ratio, Proportion of EBC and Acquisition Announcement Period

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
Book to Market Category	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
Value Firms (High B/M)													
Mean	24.96%***	24.70%***	25.10%***	28.44%***	35.38%***	19.23%***	12.94%***	32.71%***	15.05%	28.44%***	19.23%***	35.38%***	12.94%***
Median	13.42%***	10.27%***	14.55%***	6.39%***	22.76%***	15.97%***	3.04%	17.70%***	7.21%	6.39%***	15.97%***	22.76%***	3.04%
Observations	3414	1239	2175	736	1179	503	996	1915	1499	736	503	1,179	996
t statistic		*-0.12*		*-1.36*		*1.84**		*6.27****		*1.75**		*7.16****	
z statistic		*-1.59*		*-5.19****		*3.29****		*-6.45****		*0.81*		*-8.85****	
Glamour Firms (Low B/M)													
Mean	14.33%***	13.00%***	16.15%***	14.48%***	23.73%***	10.32%***	4.09%*	18.30%***	7.56%***	14.48%***	10.32%***	23.73%***	4.09%*
Median	-1.10%	-2.46%**	0.34%	-8.50%***	4.61%*	5.11%**	-3.35%**	-2.30%*	0.46%	-8.50%***	5.11%**	4.61%*	-3.35%**
Observations	3660	2109	1551	1356	953	753	598	2309	1351	1,356	753	953	598
t statistic		*-1.02*		*-2.01***		*2.19***		*3.97****		*1.14*		*4.94****	
z statistic		*-2.61****		*-5.19****		*3.25****		*2.10***		*5.08****		*-3.01****	

Table VII – *continued*

Panel D: 2-year BHRs Categorised by Top-5 Executives Ownership, Proportion of EBC and Acquisition Announcement Period

	Total Sample			1993-07/2002		08/2002-2010		Total Sample		High EBC		Low EBC	
Ownership	All Companies	High EBC	Low EBC	High EBC	Low EBC	High EBC	Low EBC	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010	1993-07/2002	08/2002-2010
High Ownership													
Mean	16.67%***	17.33%***	16.09%***	20.73%***	26.70%***	12.11%***	5.37%***	23.61%***	8.15%***	20.73%***	12.11%***	26.70%***	5.37%***
Median	3.31%***	1.67%	4.74%***	-5.06%**	11.75%***	9.91%***	-1.00%	4.26%**	2.14%	-5.06%**	9.91%***	11.75%***	-1.00%
Observations	3113	1463	1650	886	829	577	821	1715	1398	886	577	829	821
t statistic		*0.36*		*-1.10*		*2.19***		*4.90****		*1.70**		*5.82****	
z statistic		*-2.06***		*-4.95****		*2.91****		*-1.00*		*3.11****		*-4.78****	
Low Ownership													
Mean	17.60%***	15.04%***	20.22%***	14.79%***	27.87%***	15.41%***	10.08%***	21.07%***	12.65%***	14.79%***	15.41%***	27.87%***	10.08%***
Median	7.09%***	3.52%**	10.36%***	0.00%	18.39%***	8.75%***	-1.42%	9.06%***	4.17%**	0.00%	8.75%***	18.39%***	-1.42%
Observations	3234	1632	1602	988	913	644	689	1901	1333	988	644	913	689
t statistic		*-1.91**		*-3.29****		*1.67**		*3.26****		*-0.16*		*5.22****	
z statistic		*-3.80****		*-7.63****		*3.70****		*-2.70****		*3.58****		*-7.54****	

***,**,* indicate significance at the 1 per cent, 5 per cent and 10 per cent levels, respectively.

Table VIII
Multivariate Regressions Explaining Two-year Buy-and-Hold Returns For Acquiring Firms

The sample consists of 8,680 acquisitions completed during the period January 1, 1993, to December 31, 2010. The dependent variable is the Long-term Post-acquisition Return (LPR) and is defined as the natural logarithm of 1 + the acquirer's 2-year post-acquisition BHR minus the natural logarithm of 1 + the CRSP S&P 500 Value Weighted Index BHR for the same period. *Size* denotes the natural logarithm of the CRSP market capitalisation of the acquiring firm on the day preceding the announcement date. *BM* refers to the book-to-market ratio of the acquiring firm, defined as the natural logarithm of book value of equity divided by the market value of equity at the month-end preceding the effective date of the acquisition. *Runup* is the one-year pre-acquisition buy-and-hold abnormal return of the acquiring firms in relation to the CRSP Value-Weighted Index. *Combo* refers to the natural logarithm of 1 + the sum of all options granted and stock ownership of the acquirer's top five executives as a ratio of total shares outstanding. *EBC* is the natural logarithm of 1 + equity-based compensation, where equity-based compensation refers to the sum of the fair value of new stock options awarded to the top five executives for each acquiring firm as a percentage of total compensation received at the year-end preceding the acquisition. *Ownership* is the natural logarithm of 1 + the sum of previously granted/acquired common and restricted stock owned by the top five executives of the acquiring firm at the year-end prior to the announcement as a ratio of total shares outstanding. *PrevOptions* is the natural logarithm of 1 + the sum of all prior option grants received by the top five executives of the acquiring firm as a ratio of total shares outstanding. *Relative size * EBC dummy* is an interaction term, in which *Relative size* is the ratio of the target firm to the acquiring firm's market capitalisation on the day prior to the acquisition announcement date. *EBC dummy* is a binary term that equals 1 if the firm is classified as a high EBC firm (proportion of EBC greater than the median for the full sample of 8,680 acquisitions), and 0 otherwise. *Payment* is a binary variable taking the value of 1 if the acquisition was financed with cash only and 0 if not. If the acquirer's book-to-market ratio is above the median, the firm is classified as a *value* firm otherwise it is categorised as *glamour*. SOX Dummy is a binary variable that equals 1 if the acquisition announcement was made after the enactment of the Sarbanes-Oxley Act and 0 otherwise. SOX Dummies are also used for all variables defined above to capture the differential effect of the SOX enactment. The t-statistics are in parentheses and heteroskedasticity consistent according to Davidson and MacKinnon (1993 and 2004) procedure.

Multivariate Regression Coefficients Explaining Two-year BHR Returns for Bidders

	All Firms Model 1	All Firms Model 2	All Firms Model 3	All Firms Model 4	Glamour Firms Model 5	Value Firms Model 6
Intercept	0.73	0.84	0.82	1.81	1.05	0.68
	(3.95)***	(3.86)***	(3.74)***	(2.56)**	(3.59)***	(1.99)**
Size	-0.03	-0.04	-0.04	-0.08	-0.05	-0.03
	(-3.64)***	(-3.55)***	(-3.62)***	(-2.43)**	(-3.28)***	(-1.93)*
BM	0.12	0.13	0.13	0.11	0.13	0.25
	(5.54)***	(5.57)***	(5.65)***	(2.13)**	(3.01)***	(4.40)***
Runup	-0.12	-0.11	-0.11	-0.26	-0.12	-0.06
	(-6.36)***	(-4.83)***	(-4.62)***	(-4.63)***	(-4.47)***	(-0.79)
Combo	-2.00					
	(-8.88)***					
EBC		0.00	0.00		-0.01	0.01
		(-0.07)	(-0.03)		(-0.41)	(0.38)
Ownership		-1.14	-1.12	1.13	-1.26	-1.10
		(-3.27)***	(-3.24)***	(1.23)	(-2.95)***	(-1.81)*
PrevOptions		-3.40	-3.37	-5.85	-4.07	-2.81
		(-4.00)***	(-3.96)***	(-1.61)	(-3.21)***	(-1.98)**
*Relative Size * EBC Dummy*				-0.15		
				(-0.68)		
Payment			0.10		0.11	0.09
			(4.27)***		(3.31)***	(2.63)***
SOX Dummy	-0.43	-0.38	-0.38	-1.40	-0.71	0.13
	(-1.86)*	(-1.45)	(-1.44)	(-1.78)*	(-2.08)**	(0.31)
Size D SOX	0.02	0.01	0.01	0.05	0.03	-0.01
	(1.53)	(1.15)	(1.11)	(1.47)	(1.90)*	(-0.53)
BM D SOX	-0.12	-0.13	-0.13	-0.21	-0.10	-0.20
	(-4.48)***	(-4.60)***	(-4.41)***	(-3.37)***	(-1.95)*	(-2.75)***
Runup D SOX	0.12	0.12	0.13	0.26	0.09	0.18
	(3.72)***	(3.63)***	(3.83)***	(3.23)***	(2.15)**	(2.23)**
Combo D SOX	1.29					
	(4.58)***					
EBC D SOX		0.01	0.01		0.01	0.01
		(0.84)	(0.84)		(0.58)	(0.35)
Ownership D SOX		1.32	1.29	-0.10	1.10	1.60
		(3.01)***	(2.94)***	(-0.09)	(1.85)*	(2.30)**
PrevOptions D SOX		0.72	0.70	3.57	0.92	0.11
		(0.78)	(0.76)	(0.96)	(0.67)	(0.07)
*(Relative Size * EBC Dummy) D SOX*				0.18		
				(0.69)		
Payment D SOX			-0.01		-0.02	-0.01
			(-0.46)		(-0.38)	(-0.29)
R^2 adjusted	0.09	0.09	0.09	0.14	0.13	0.05
F-statistic	33.04	19.49	19.02	6.02	15.28	6.13
p-value	0.00	0.00	0.00	0.00	0.00	0.00
Observations	6917	6232	6232	967	3167	3065

****, **, * denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively*