

Stock versus Options in Financially Distressed Firms

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Abstract

This study examines stock versus option compensation for CEOs in 69 U.S. publicly-traded firms identified as financially distressed but which recovered during 1992 to 2009. Financially-distressed firms are those having negative industry-adjusted ROA for four consecutive years and not selling significant amounts of debt for any three consecutive years inside this window. The control group is a matched sample of non-financially distressed firms. Our results indicate a preference for option compensation in the initial years of distress rather than grants of restricted stock because equity is not priced as an option in recovering firms. Grants of restricted stock in tandem with annual bonuses are deferred until the beginning of recovery which is no earlier than the year following. Our findings are robust with respect to the market-to-book of assets, with option grants loading positively and annual bonuses loading negatively in the first year of financial distress. We conclude that shareholders tailor CEO compensation to changes in the asset mix as financial distress evolves into recovery.

1. Introduction

Studies of CEO compensation in financially distressed firms, specifically Gilson and Vetsuypens (1993) and more recently by Kang and Mitnik (2009, 2010), have provided evidence that CEOs experience significant cuts in cash based compensation (salary and bonus) upon the onset of financial distress, while at the same time shareholders resort to equity-based compensation (restricted stock and stock options) to strengthen the incentive for extra risk taking. The present paper seeks to extend this evidence to the question of whether shareholders prefer stock option grants to grants of restricted stock in the initial stage of financial distress.

Financial distress provides a unique setting in which to study CEO compensation because agency costs are dramatically reduced. Sophisticated investors consolidate ownership interests and assert significant control over firms (Kang and Mitnik, 2009). Hence, managerial power is no longer a major concern. Executive compensation plans are constructed for incentive creation and not as a result of managerial influence in the pay setting process. Absent economic distress, CEOs in financially-distressed firms are rewarded for engineering financial recovery that is beneficial to shareholders. To do so, CEOs require the appropriate incentive to take the requisite risk. For firms not expected to recover no incentive is feasible. On the other hand, for firms having a chance of recovery risk taking to exit distress entails taking on as much risk as necessary to preserve shareholder value. Following Lemmon, Ma and Tashjian (2009), firms in economic distress do not have a sound business model, so equity is priced as a call. As a consequence, shareholders are largely indifferent between a stock or an option grant. On the other hand, debt restructuring of firms in financial but not economic distress is better incentivized through option grants rather than grants of restricted stock because equity is

no longer priced like an option. Since financially-distressed firms have a sound business model (i.e., can recover from their financial distress), the failure of options to penalise poor performance is not a cost. Hence, shareholders prefer options to stock due to the increased convexity of their payoffs. Stock grants along with resumption of bonuses are more effective in consolidating recovery once debt has been restructured. The purpose of this paper is to test these arguments empirically. To do so, we construct a sample of firms having experienced financial distress and that subsequently recover. The evidence supports our expectations.

Few studies have examined CEO compensation in a distress context. In the case of economic distress this is not surprising because shareholders do not incentivize CEOs when the option to redeploy assets is not valuable. In the case of financially-distressed firms the paucity of evidence possibly reflects difficulty in determining what constitutes financial distress. Gilson and Vetsuypens (1993) find that generally distressed firms reduce cash-based compensation (comprising salary and bonus) and increase equity-based compensation (stock and option grants) because the value of equity-based compensation is largely contingent on future performance and at the same time preserves scarce cash. They document evidence that part of the decline in CEO's total cash compensation during financial distress reflects reduced payouts under bonus plans with significantly fewer firms having active bonus plans or making bonus payments around default. Kang and Mitnik (2009) find that the overall decrease in total cash compensation awarded to CEO's after financial distress is explained almost entirely by an increase in the gap in bonus payments between financially-distressed and non-distressed firms. However, neither of these studies distinguishes financial from economic distress and hence incentive creation response to problems and asset redeployment are not differentiated. Further, neither study controls for

financially-distressed firms that subsequently recover and those that either become bankrupt or are taken over.

Hall and Liebman (1997) show that positive sensitivity of changes in CEO wealth to changes in firm value derive generally from stock and option holdings rather than salary and bonuses. At the onset of financial distress stock is priced like an option: equity has positive value if the firm recovers and zero if it does not. In contrast, for economic distress the positive payoff is realized only if the firm's assets are redeployed. Lemmon, Ma and Tashjian (2009) find that financially-distressed firms reduce leverage whereas economically-distressed firms do not. This is attributed to the significantly greater reduction in assets in economically distressed firms during restructurings which may or may not be accompanied by asset redeployment, for which CEOs are rewarded. Grants of restricted stock and annual bonuses are deferred until earnings are restored to maintainable levels when performance targets can again be met. During financial distress earnings become a less reliable indicator of managers' efforts and hence any earnings-based compensation is unlikely to provide the appropriate incentive needed to spur recovery. Relative to non-distressed firms, firms that survive financial distress are expected to exhibit stock versus option choices designed to induce recovery. Differentiating this choice from that observed among healthy firms therefore sheds some light on this choice generally.

Gilson and Vetsuypens (1993) find that 15 of their 77 sampled distressed firms based part of their CEO's compensation on the outcome of the firm's financial restructuring. In most of these cases, this involved awarding the CEO stock options, paying a special bonus, or granting a salary increase for successfully bringing the firm through bankruptcy or debt restructuring, even if they were not explicitly bound to make these awards. Other firms

provided their CEOs with incentives to settle debts with creditors quickly by, for example, deferring part of their compensation until the completion of the firm's financial restructuring. They also find that the performance sensitivity of CEO compensation increases after a firm has fallen into financial distress. Option grants tend to be made after a firm has defaulted on its debt, and most of these grants are made to new CEOs rather than to increase the option holdings of incumbent CEOs. The effect of these changes results in an increase in pay-performance sensitivity several orders of magnitude higher than those documented by Jensen and Murphy (1990).

According to Lemmon, Ma and Tashjian (2009), firms affected primarily by financial distress have fundamentally sound business models but high leverage which they currently face difficulty in repaying. Conceptually, if financially distressed firms could reduce leverage to their optimal level, firms would be viable at close to their current scale. Firms affected primarily by economic distress also have difficulty in repaying debts, but differ from financially distressed firms by having very low or negative operating performance and a business model which has fundamental problems. Hence, firms facing principally economic distress have a combination of relatively low leverage and low or negative operating performance, whilst firms facing financial distress have high leverage but relatively strong operating performance.

Several studies on distress acknowledge the distinction between financial and economic distress. For example, Hotchkiss (1995) cites negative operating performance prior to bankruptcy as evidence of economic distress, whilst Denis and Rodgers (2007) associate high leverage with greater financial distress and less economic distress. Andrade and Kaplan (1998) studied the effects of "pure financial distress" using a small sample of highly levered transactions. The transactions were considered financially distressed rather

than economically distressed partly because many of the sampled firms exhibited above industry-average operating margins.

We test three hypotheses, stated in the alternate form:

H1 Option grants alone are observed no earlier than the first year of financial distress ($t=1$).

As the firm begins to recover from distress and new assets are acquired, shareholders most efficiently protect this new investment by grants of restricted stock.

H2 Grants of restricted stock recommence at $t \geq 2$.

Likewise, annual bonuses recommence at the same time as earnings begin to stabilize.

H3 Annual bonuses recommence at $t \geq 2$.

Thus, for financially-distressed firms known (with hindsight) to have survived, equity-based compensation is hypothesized to facilitate recovery but by giving options priority over stock. No expectations are formed with respect to the optimum level of composition (i.e., across all components). Since the exact time of recovery is not predictable ($t \geq 2$), observation of recommencement of restricted stock grants and/or annual bonuses is used to infer recovery.

The remainder of the paper is organized as follows. Details of sample are provided in the next section and the analysis is performed in section 3. Section 4 concludes the paper.

2. Sample

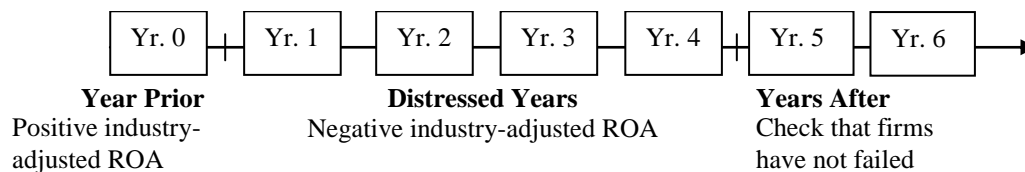
By choosing a sample of financially- but not economically-distressed firms known to have survived we are able to observe the stock versus option choice at the onset of financial distress, when options are the clear contracting solution. This is so because erosion of equity value reduces the possible penalty for poor managerial performance, so owing to their higher convexity options promote more risk taking with the object of stabilizing cash flows from assets which remain valuable. In confining our analysis to firms that survive financial distress intact we avoid survivorship bias in the financial databases such as *Compustat* and *Execucomp* which actively screen for and remove failed firms.

Gilson and Vetsuypen (1993) rely on a series of capital transactions to identify 77 publicly traded firms that filed for bankruptcy or privately restructured their debt. This formed their sample of firms that became financially distressed during the period 1981 to 1987. Kang and Mitnik (2009) construct a sample of 99 financially distressed firms from *Compustat*. Their study defined a firm as financially distressed if either (i) the Ohlson's (1980) O-score in the top quintile of the O-score distribution, and (ii) the returns in the lowest quintile of the returns distribution, or filed for Chapter 11 bankruptcy protection. A difficulty with using the O-score as a filter is that it is calculated as the weighted sum of various financial ratios which measure both leverage and operating profitability of the firm. Hence, the O-score is a measure of the likelihood of bankruptcy, and not specifically financial distress. Firms in financial distress have fundamentally sound business models but high leverage, whereas firms affected primarily by economic distress are characterized by very low or negative operating performance and a business model which has fundamental problems. Therefore, bankruptcy predicted by the O-score may be due to economic distress, financial distress, or a mixture of both. Additionally, low recent returns may also be a result of other factors unrelated to the firm's present debt problems. For

these reasons, we are adopting a different approach to isolate firms which are financially distressed.

Financially distressed firms are defined for the purpose of this study as any firm that has exhibited signs of financial distress persistently over a minimum four-year period and did not become bankrupt or taken over in the subsequent two years. Four years is considered more than sufficient time to indicate financial distress (Lemmon, Ma and Tashjian (2009)). Firms are classified as financially-distressed if they exhibit negative return-on-assets (ROA) relative to their industry peers for four consecutive years. Following Lemmon et al. (2009), industry adjustments are made by subtracting the industry median ROA from the individual sample firm's ROA. Industry median ROA is calculated based on the 4-digit Standard Industrial Classification (SIC) codes provided by Compustat as long as five or more firms reside in the industry, excluding the sample firm. Figure 1 illustrates the time line.

Figure 1: Time line of the years of financial distress



We impose two further filters. The first is no significant sales of new debt for a period of three cumulative years in any of years 1-4. We define a significant amount of new debt as being no less than 5 per cent of the firm's total assets. The second filter is that the same CEO was in office for years 0-6. Application of both filters along with a survival check in

years 5-6 results in a final sample of 69 firms classified as financially but not economically distressed, representing 411 firm-years.

Firm data and executive compensation data are obtained from Standard and Poor's *Execucomp* and *Compustat* database, respectively. The sample period is 1992-2009, inclusive. A control sample is also constructed, matched on industry (defined by the 4-digit SIC code), fiscal year and asset size (measured by the natural log of total assets). Hence, factors including CEO turnover, survivorship, industry variances, and size effects have already been controlled for at the sample construction stage and are not required to be included as separate variables in subsequent analysis.

Table 1: Mean financial ratios for financially-distressed and non financially-distressed firms in event time

Year	Status	Prior year	Years of financial distress				
		0	1	2	3	4	5
MBA	FD	1.69	0.96	0.85	0.94	0.85	0.92
	Non-FD	2.18	2.03	1.72	1.44	1.75	1.76
Debt/Assets Ratio	FD	0.45	0.47	0.49	0.50	0.52	0.54
	Non-FD	0.53	0.49	0.52	0.51	0.46	0.50
ROA	FD	0.04	-0.07	-0.05	-0.05	-0.06	-0.02
	Non-FD	0.07	0.07	0.07	0.06	0.08	0.07
CX/TA	FD	0.04	0.04	0.03	0.03	0.03	0.03
	Non-FD	0.07	0.08	0.06	0.05	0.04	0.04
Total Pay (\$000)	FD	3952.9	3313.3	2892.3	3197.6	3697.3	3945.4
	Non-FD	5112.8	4156.8	3878.3	3416.6	4356.3	4718.4

FD refers to financially distressed firms; non-FD denotes non-financially distressed firms. MBA is the Market-to-book assets ratio. Debt/Assets Ratio is the ratio of total liabilities to total assets. ROA is Return-on-Assets. CX/TA is Capital Expenditure divided by Total Assets. Total Pay is the total compensation received by the CEO in a given year.

Table 2 shows that financially-distressed (FD) firms have inferior market-to-book of assets (MBA) ratios, similar debt, lower ROA, lower capital expenditure and lower total pay than matched non-FD firms in the first year of financial distress (year 1).

3. Analysis

Seeming unrelated regression (SUR) is used to observe simultaneous movements in relative pay components through time, t . The coefficients β_1 , β_2 and β_3 represent the degree of variation between the relative levels of stock option grants, restricted stock grants and annual bonus made to CEOs while controlling for differences in total compensation. The analysis is performed on an annual year-by-year basis, starting with the year before financial distress ($t = 0$) followed by the years of financial distress ($t = 1, \dots, 4$). The independent variable in this analysis is the relative level of total compensation while the dependent variables are the relative levels of stock options, restricted stock and annual bonus made to CEOs. Other financial controls are not necessary in the present analysis because filters representing these variables are applied during sample construction.

Differences in relative total compensation are controlled through a single independent variable $\frac{\text{Total Compensation}_{FD,t}}{\text{Total Compensation}_{\overline{FD},t}}$ which is *RELATIVE TOTAL COMPENSATION*. The

model used for hypothesis testing is:

$$\begin{aligned} \frac{\text{Stock option grant}_{FD,t}}{\text{Stock option grant}_{\overline{FD},t}} &= \alpha_1 + \beta_1 \cdot \frac{\text{Total Compensation}_{FD,t}}{\text{Total Compensation}_{\overline{FD},t}} \\ \frac{\text{Restricted stock grant}_{FD,t}}{\text{Restricted stock grant}_{\overline{FD},t}} &= \alpha_2 + \beta_2 \cdot \frac{\text{Total Compensation}_{FD,t}}{\text{Total Compensation}_{\overline{FD},t}} \\ \frac{\text{Annual bonus}_{FD,t}}{\text{Annual bonus}_{\overline{FD},t}} &= \alpha_3 + \beta_3 \cdot \frac{\text{Total Compensation}_{FD,t}}{\text{Total Compensation}_{\overline{FD},t}} + \varepsilon_t \end{aligned}$$

Stock option grant is measured as the Black-Scholes (1973) value of executive stock options granted to the CEO for the fiscal year t . *Restricted stock grant* is measured as the total dollar value of restricted stock granted to a CEO for the fiscal year t . *Annual bonus* is measured as the total dollar value of cash bonuses earned by the CEO for the fiscal year t .

The three dependent variables on the left hand side of each of the equations are termed *RELATIVE OPTIONS*, *RELATIVE RESTRICTED STOCK* and *RELATIVE ANNUAL BONUS*, respectively. Each represents the value of each component of compensation of a FD firm relative to the matched non-FD firm. *Total Compensation* is measured as the sum of the total dollar values of stock option grants, restricted stock grants, annual bonuses, salary, long-term incentive payments and all other compensation grants to the CEO. Descriptive statistics for *RELATIVE TOTAL COMPENSATION* are presented in Table 2.

Table 2: Descriptive statistics for *RELATIVE TOTAL COMPENSATION* for FD firms

Year	Mean	Median	Max.	Min.	Std. Dev.	Obs.
0	2.24	1.00	15.03	0.01	3.43	69
1	1.45	0.78	9.83	0.03	1.82	69
2	1.13	0.58	9.97	0.07	1.51	69
3	1.80	0.70	40.00	0.04	4.98	69
4	1.62	0.62	30.49	0.01	3.99	69
5	1.15	0.76	8.05	0.04	1.26	66
All	1.57	0.72	40.00	0.01	3.17	411

Table 2 shows that large variations exist in *RELATIVE TOTAL COMPENSATION* between FD and non-FD firms across all years, with ‘tails’ of FD firms exhibiting higher or lower total compensation than matched non-FD firms. For example, in year 1 the ratio of distressed CEO compensation to non-distressed ranges from 0.03 to 9.83, with a median value of 0.78. The total number of observations is consistent at 69 observations each year except in year 5 because the fourth year of data was the most recent available data in the *Compustat* and *Execucomp* databases. Table 2 also shows that CEOs of FD firms on average receive lower total compensation than non-FD firms, with median values ranging from 0.58 to 0.78 across the five years of financial distress. Both mean and median values indicate that the disparity of total compensation between the CEOs of FD and non-FD

firms is greatest in the second year of distress. The ratio increases in years 3 to 4 which are likely years of recovery.

The dependent variables constitute the set of *RELATIVE OPTIONS*, *RELATIVE RESTRICTED STOCK* and *RELATIVE ANNUAL BONUS*. These are stock option grants, grants of restricted stock and annual bonuses of FD firms relative to the same payment modes of matched non-FD firms. The descriptive statistics are provided in Tables 3.1, 3.2 and 3.3. Table 3.1 shows high dispersion in *RELATIVE OPTIONS* for all years, with a minimum of zero in every year and maxima above 3,000 times in each year. Both the mean and median show that option grants are used more heavily by the FD firms in the first three years of financial distress, falling to zero as reflected in the median values for years 4 and 5 in line with expectations.

Table 3.1: Descriptive statistics for *RELATIVE OPTIONS* for FD firms

Year	Mean	Median	Max.	Min.	Std. Dev.	Obs.
0	367.65	1.00	3950.00	0.00	963.55	69
1	180.89	0.84	3514.47	0.00	572.24	69
2	201.48	0.54	3879.61	0.00	682.91	69
3	226.28	0.25	4100.00	0.00	768.00	69
4	108.27	0.00	3680.90	0.00	516.53	69
5	101.48	0.00	3900.00	0.00	514.67	66
All	198.38	0.19	4100.00	0.00	691.08	411

Table 3.2 shows slightly less dispersion for *RELATIVE RESTRICTED STOCK*, reflecting some zero values in the dataset because not all FD firms granted restricted stock as part of a CEO's compensation package. The mean values show a little more variation in than in Table 3.1 but there is no apparent trend either in the mean or median values.

Table 3.2: Descriptive statistics for *RELATIVE RESTRICTED STOCK* for FD firms

Year	Mean	Median	Max.	Min.	Std. Dev.	Obs.
0	77.60	0.00	1313.27	0.00	261.53	69
1	74.30	0.00	1472.51	0.00	238.33	69

2	84.40	0.00	1550.00	0.00	270.51	69
3	83.88	0.00	1500.00	0.00	288.17	69
4	29.26	0.00	1041.59	0.00	148.24	69
5	177.19	0.00	1700.00	0.00	449.60	66
All	87.12	0.00	1700.00	0.00	290.31	411

Table 3.3 shows no discernible trend in *RELATIVE ANNUAL BONUS* in either the mean or median values. Similar dispersion to that of table 6.3 is apparent.

Table 3.3: Descriptive statistics for *RELATIVE ANNUAL BONUS* for FD firms

Year	Mean	Median	Max.	Min.	Std. Dev.	Obs.
0	43.61	0.81	950.00	0.00	142.79	69
1	35.73	0.12	1045.00	0.00	174.11	69
2	28.63	0.09	1000.00	0.00	142.19	69
3	53.45	0.05	1500.00	0.00	247.24	69
4	41.95	0.00	1600.00	0.00	220.89	69
5	108.66	0.13	1450.00	0.00	313.26	66
All	51.59	0.15	1600.00	0.00	215.02	411

All hypotheses are tested in Table 4. For H1, the R-square of *RELATIVE OPTIONS* in year 1 is 0.37 while for *RELATIVE RESTRICTED STOCK* and *RELATIVE ANNUAL BONUS* the R-squares are very low. *RELATIVE TOTAL COMPENSATION* achieves positive significance, as hypothesized, only when *RELATIVE OPTIONS* is the dependent variable. These results show that as early as the first year of financial distress FD firms grant more options than matched non-FD firms, after controlling for differences in total compensation. In contrast, differences in restricted stock grants and annual bonuses are not explained by differences in total compensation. This evidence provides direct support for H1.

For H2, in the first year of financial distress (year 1) *RELATIVE RESTRICTED STOCK* does not load significantly on *RELATIVE TOTAL COMPENSATION*, but it does so in year 2, with an acceptable R-square of 0.14. *RELATIVE OPTIONS* continue to load significantly on *RELATIVE TOTAL COMPENSATION*. These results show that in the second year of financial distress, in addition to grants of stock options FD firms grant more restricted stock than non-FD firms, after allowing for differences in total compensation. This is consistent with the expectation that as the financial condition of FD firms begins to improve, so as equity is no longer priced as an option restricted stock grants are re-instated. Thus, H2 is supported. Curiously, *RELATIVE RESTRICTED STOCK* does not load significantly on *RELATIVE TOTAL COMPENSATION* again until year 5.

For H3 the SUR regression shows that *RELATIVE ANNUAL BONUS* does not load significantly on *RELATIVE TOTAL COMPENSATION* until year 3, with an R-square value of 0.42. The coefficient is positive, as hypothesized. The positive loading continues for years 4 and 5. There is little apparent relationship with the corresponding loadings for *RELATIVE RESTRICTED STOCK*. In year 4, by which time recovery has presumably commenced, equity-based compensation does not explain the differences in total compensation between FD firms and non-FD firms at all.

Table 4: SUR regressions of *RELATIVE OPTIONS*, *RELATIVE RESTRICTED STOCK* and *RELATIVE ANNUAL BONUS* on *RELATIVE TOTAL COMPENSATION*

	<i>t=0</i>	<i>t=1</i>	<i>t=2</i>	<i>t=3</i>	<i>t=4</i>	<i>t=5</i>
<i>RELATIVE OPTIONS</i>	121.61***	191.31***	284.35***	97.08***	18.39	180.50***
<i>t</i>	(3.98)	(6.38)	(6.74)	(6.73)	(1.19)	(3.98)
<i>R</i> ²	0.187	0.371	0.397	0.396	0.020	0.194
<i>RELATIVE RESTRICTED STOCK</i>	34.59***	6.30	67.09***	-1.57	2.66	91.59***
<i>t</i>	(4.22)	(0.40)	(3.36)	(-0.23)	(0.60)	(2.15)
<i>R</i> ²	0.205	0.002	0.141	0.001	0.005	0.065
<i>RELATIVE ANNUAL BONUS</i>	-0.63	8.85	-5.28	32.32***	42.21***	50.76*

<i>t</i>	(-0.13)	(0.77)	(-0.47)	(7.12)	(9.76)	(1.69)
<i>R</i> ²	0.000	0.009	0.003	0.423	0.580	0.041
			<i>CONSTANTS</i>			
<i>RELATIVE OPTIONS</i>	95.645	-96.11	-118.90	51.09	78.53	-105.44
<i>t</i>	(0.77)	(-1.38)	(-1.50)	(0.67)	(1.19)	(-1.37)
<i>RELATIVE RESTRICTED STOCK</i>	0.22	65.18*	8.81	86.70**	24.95	72.19
<i>t</i>	(0.01)	(1.79)	(0.24)	(2.37)	(1.31)	(1.00)
<i>RELATIVE ANNUAL BONUS</i>	45.03**	22.91	34.58	-4.87	-26.32	50.46
<i>t</i>	(2.20)	(0.86)	(1.63)	(-0.20)	(-1.42)	(0.99)
<i>N</i>	69	69	69	69	69	66

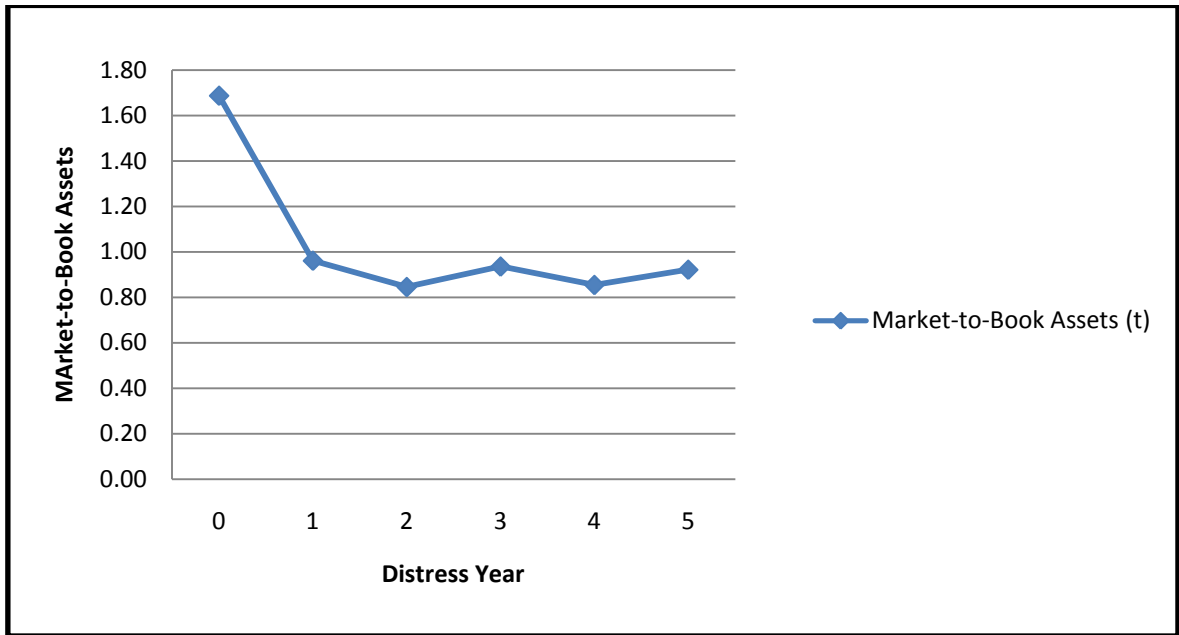
***, ** and * denotes significance at the 1, 5 and 10% significance levels, respectively. All equations are estimated from 69 (66 at *t*=5) annual observations (across all distress years) using an iterative Seemingly Unrelated Regressions (SUR) technique. *RELATIVE OPTIONS* is the level of stock option grants made to the CEO of a financially distressed firm divided by the level of stock option grants made to the CEO of a non-distressed firm. *RELATIVE RESTRICTED STOCK* and *RELATIVE ANNUAL BONUS* similarly refer to the relative level of restricted stock and annual bonus grants respectively. *RELATIVE TOTAL COMPENSATION* is the total dollar (\$) value of compensation paid to the CEO of a financially distressed firm divided by the dollar value of total compensation paid to the CEO of a non-distressed firm.

As a robustness test we also examine the association of option grants, restricted stock grants and annual bonuses with the market-to-book of assets (*MBA*) of financially-distressed firms, commencing in year 0. For FD firms *MBA* is a useful reference point because it incorporates the firm's stock price (in the numerator) also captures the increment to asset value of new capital expenditures made as part of the recovery process (in the denominator). For the prior year of no financial distress, we expect to observe a positive association of *MBA* with any of these pay components, reflecting whatever the best practice may be. However, given the results in Table 4, in the first year of financial distress ($t=1$) and certainly by $t=2$ we expect to observe (i) a positive association of *MBA* with option grants and (ii) no association with grants of restricted stock for the same interval. By corollary, any annual bonuses paid in these years are expected to load negatively on *MBA* because cash bonuses paid out before recovery are suggested by the results of Table 4 to have no role in achieving a turn-around. For example, an annual bonus is not predicated for a FD firm and also reduces funds available to support new investment.

For this robustness test, variables measuring stock option, restricted stock and annual bonus compensation constitute the dependent variables for this analysis. A SUR model is again applied to capture the simultaneous associations with *MBA*, which is the only independent variable. Option and stock grants are accumulated from year 1 because they typically cannot be exercised (in the case of options) or sold (in the case of restricted stock) for at least three years. Annual bonuses on the other hand, are measured at the instance of issue, as the cash-based bonus awards are enjoyed immediately on a year-by-year basis.

Figure 2 shows that the mean value of market-to-book assets in FD firms decrease substantially from $t=0$ to $t=1$. From $t=1$ on, market-to-book assets remains relatively constant at an average ratio below the value of 1 across all years.

Figure 2: Mean Market-to-book of assets for FD firms across the sample years.



FD refers to financial distress. Market-to-book of assets is calculated as the market value of equity plus the book value of debt all divided by the book value of assets.

For a given year, T , the SUR model is as follows:

$$\frac{\sum_{t=1}^T \text{Stock option grant}_{FD,t}}{\text{Total Compensation}_{FD,t}} = \alpha_1 + \beta_1 \cdot \text{MBA}_{FD,t}$$

$$\frac{\sum_{t=1}^T \text{Restricted stock grants}_{FD,t}}{\text{Total Compensation}_{FD,t}} = \alpha_2 + \beta_2 \cdot \text{MBA}_{FD,t}$$

$$\frac{\text{Annual bonus}_{FD,t}}{\text{Total Compensation}_{FD,t}} = \alpha_3 + \beta_3 \cdot \text{MBA}_{FD,t} + \varepsilon_t$$

The dependent variables on the left side are denoted *CUM LEVEL OPTIONS*, *CUM LEVEL STOCK* and *LEVEL BONUS*, respectively.

The results of the SUR estimation for each year are reported in Table 5. *CUM LEVEL OPTIONS* loads significantly on *MBA* in both year 0 and the first year of distress, or year 1. *LEVEL BONUS* loads significantly on *MBA* only in year 1. In contrast, *CUM LEVEL STOCK* does not load significantly on *MBA* in any year.

Table 5: SUR regressions of *CUM LEVEL OPTIONS*, *CUM LEVEL STOCK* and *LEVEL BONUS* on *MBA* for FD firms

	<i>t</i> =0	<i>t</i> =1	<i>t</i> =2	<i>t</i> =3	<i>t</i> =4	<i>t</i> =5
<i>CUM LEVEL</i>						
<i>OPTIONS</i>	0.04**	0.14***	0.17	0.16	0.46	0.34
<i>t</i>	(2.56)	(3.76)	(1.06)	(0.17)	(1.09)	(0.75)
<i>R</i> ²	0.087	0.170	0.016	0.000	0.017	0.008
<i>CUM LEVEL STOCK</i>						
	-0.01	-0.02	-0.03	-0.02	-0.05	-0.09
<i>t</i>	(-1.58)	(-1.61)	(-1.39)	(-0.72)	(-0.80)	(-0.98)
<i>R</i> ²	0.035	0.036	0.027	0.007	0.009	0.014
<i>LEVEL BONUS</i>						
	-0.00	-0.04**	-0.02	-0.01	-0.03	-0.03
<i>t</i>	(-0.37)	(-2.00)	(-1.26)	(-0.98)	(-1.41)	(-0.97)
<i>R</i> ²	0.002	0.055	0.022	0.014	0.028	0.014
<i>CONSTANTS</i>						
<i>CUM LEVEL</i>						
<i>OPTIONS</i>	0.35***	0.25***	1.00***	2.66	1.80***	1.78***
<i>t</i>	(7.88)	(4.94)	(4.41)	(1.46)	(3.48)	(3.01)
<i>CUM LEVEL STOCK</i>						
	0.06***	0.07***	0.15***	0.23***	0.27***	0.41***
<i>t</i>	(3.62)	(3.73)	(4.59)	(4.25)	(3.81)	(3.40)
<i>LEVEL BONUS</i>						
	0.18***	0.16***	0.14***	0.11***	0.14***	0.16***
<i>t</i>	(7.61)	(5.80)	(5.45)	(5.47)	(4.96)	(4.72)
<i>N</i>	69	69	69	69	69	66

***, ** and * denotes significance at the 1, 5 and 10% significance levels, respectively. All equations are estimated from 69 (66 at *t*=5) annual observations (across all distress years) for financially distressed firms using an iterative Seemingly Unrelated Regressions (SUR) technique. *CUM LEVEL OPTIONS* is accumulation (from *t*=1) of stock options divided by total compensation in that particular year. *CUM LEVEL STOCK* similarly refers to the accumulation of restricted stock divided by total compensation. *LEVEL BONUS* is the annual bonus in a given year divided by total compensation in the same year. *MBA* is the market-to-book of assets ratio, calculated as the market value plus the book value of debt all divided by the book value of assets.

Consistent with expectations, stock option grants are significant with a positive coefficient in the year prior to financial distress (*t*=0), indicating stock option grants increase in association with *MBA*, where the value of options increase due to the increasing value of the share price. Additionally, in the first year of financial distress (*t*=1), stock option grants continue to exhibit a significant positive association with *MBA*, and annual bonuses

display a significant negative association with *MBA*. This result implies that in the first year of financial distress, stock option grants are increasing in *MBA* while at the same time annual bonuses are declining. The result of the robustness test is consistent with our expectations and reinforces the results of the hypothesis tests.

4. Conclusion

Our evidence extends that of Gilson and Vetsuypens (1993). All hypotheses receive empirical support. We document evidence that when firms enter financial distress and are expected to recover shareholders award options. In the first three years of financial distress more stock options by value are awarded by FD firms than by non-FD firms, even after controlling for differences in total compensation. Grants of restricted stock follow a year later but are not maintained. Annual bonuses recommence in the third year of financial distress as earnings begin to stabilize and the firm emerges from financial distress. This outcome is especially strong in year 4 where significance on stock option and restricted stock grants no longer exist and differences in total compensation between the FD firms and non-FD firms are explained primarily by differences in the level of annual bonuses, consistent with Gilson and Vetsuypens (1993). To sum up, our results suggest a partial switch from option grants to grants of restricted stock allied with annual bonuses as FD firms recover. Robustness is provided by further evidence that the cumulative value of option grants increases in market-to-book of assets in year 1, while in the same year annual bonuses are decreasing. Overall, the main inference is that CEO compensation mimics changes in the asset structure as assets-in-place replace the option of recovery from financial distress which is exercised only if shareholders stand to benefit from a recovery.

References

- Black , F and Scholes, M, 1973, 'The Pricing of Options and Corporate Liabilities', *Journal of Political Economy*, 81, 637-654.
- Denis DK and Rodgers, KJ, 2007, 'Chapter 11: Duration, outcome, and post-reorganization performance', *Journal of Financial and Quantitative Analysis*, 42(1), 101-118.
- Gilson, SC and Vetsuypens, MR, 1993, 'CEO Compensation in Financially Distressed Firms: An Empirical Analysis', *Journal of Finance*, 48(2), 425-458.
- Hall, BJ & Liebman, JB, 1997, 'Are CEOs really paid like bureaucrats?', *Quarterly Journal of Economics*, 113(3), 653-691.
- Hotchkiss, ES, 1995, 'Postbankruptcy performance and management turnover', *Journal of Finance*, 50(1), 3-21.
- Jensen, MC & Murphy, KJ, 1990, 'Performance Pay and Top-Management Incentives', *Journal of Political Economy*, 98(2), 225-264.
- Kang, Q & Mitnik, O, 2010, 'CEO Power and Compensation in Financially Distressed Firms', *Working Paper #3857*, School of Business Administration, University of Miami.
- Kang, Q & Mitnik, OA, 2009, 'Not So Lucky Any More: CEO Compensation in Financially Distressed Firms', *Working Paper 2009-6*: School of Business Administration, University of Miami.
- Kaplan, S, 1998, 'How Costly is Financial (Not Economic) Distress? Evidence from Highly Leveraged Transactions that Became Distressed', *Journal of Finance*, 53(5), 1443-1493.
- Lemmon, ML, Ma, Y-Y & Tashjian, E, 2009, 'Survival of the Fittest? Financial and Economic Distress and Restructuring Outcomes in Chapter 11', *SSRN eLibrary*.
- Ohlson, JA, 1980, 'Financial ratios and the probabilistic prediction of bankruptcy', *Journal of Accounting Research*, 18: 109-131.

Appendix

Firms included in the main and matched samples.

YEAR	FD firm	Matched non-FD firm	YEAR	FD firm	Matched non-FD firm
2004	4KIDS ENTERTAINMENT INC	ARBITRON INC	1998	HAUSER INC	AMERICAN PACIFIC CORP
2005	4KIDS ENTERTAINMENT INC	HARTE HANKS INC	2003	HAVERTY FURNITURE	DRESS BARN INC
2006	4KIDS ENTERTAINMENT INC	HARTE HANKS INC	2004	HAVERTY FURNITURE	FREDS INC
2007	4KIDS ENTERTAINMENT INC	NEUTRAL TANDEM INC	2005	HAVERTY FURNITURE	GYMBOREE CORP
2008	4KIDS ENTERTAINMENT INC	NEUTRAL TANDEM INC	2006	HAVERTY FURNITURE	TUESDAY MORNING CORP
2004	ABM INDUSTRIES INC	STERICYCLE INC	2007	HAVERTY FURNITURE	TUESDAY MORNING CORP
2005	ABM INDUSTRIES INC	INTERFACE INC -CL A	2008	HAVERTY FURNITURE	MIDAS INC
2006	ABM INDUSTRIES INC	INTERFACE INC -CL A	1995	INCO LTD	PHELPS DODGE CORP
2007	ABM INDUSTRIES INC	HNI CORP	1996	INCO LTD	PRAXAIR INC
2008	ABM INDUSTRIES INC	ROBERT HALF INTL INC	1997	INCO LTD	UNION CARBIDE CORP
2003	ACTEL CORP	MICREL INC	1998	INCO LTD	PPG INDUSTRIES INC
2004	ACTEL CORP	MICREL INC	1999	INCO LTD	UNION CARBIDE CORP
2005	ACTEL CORP	MICREL INC	2000	INCO LTD	PPG INDUSTRIES INC
2006	ACTEL CORP	CABOT MICROELECTRONICS CORP	1993	INFORMATION RESOURCES INC	HNI CORP
2007	ACTEL CORP	MICREL INC	1994	INFORMATION RESOURCES INC	HNI CORP
2008	ACTEL CORP	CABOT MICROELECTRONICS CORP	1995	INFORMATION RESOURCES INC	ABM INDUSTRIES INC
2000	ADVANCED ENERGY INDS INC	ATMI INC	1996	INFORMATION RESOURCES INC	IONICS INC
2001	ADVANCED ENERGY INDS INC	ATMI INC	1997	INFORMATION RESOURCES INC	IONICS INC
2002	ADVANCED ENERGY INDS INC	ATMI INC	1998	INFORMATION RESOURCES INC	NATIONAL COMPUTER SYS INC
2003	ADVANCED ENERGY INDS INC	ATMI INC	2000	KELLY SERVICES INC -CL A	CENTRAL PARKING CORP
2004	ADVANCED ENERGY INDS INC	CABOT MICROELECTRONICS CORP	2001	KELLY SERVICES INC -CL A	WASTE CONNECTIONS INC
2005	ADVANCED ENERGY INDS INC	MICROSEMI CORP	2002	KELLY SERVICES INC -CL A	CHOICEPOINT INC
1994	AMERICAN FINANCIAL GROUP INC	MARSH & MCLENNAN COS	2003	KELLY SERVICES INC -CL A	UNITED STATIONERS INC
1995	AMERICAN FINANCIAL GROUP INC	MBIA INC	2004	KELLY SERVICES INC -CL A	ROBERT HALF INTL INC
1996	AMERICAN	AON CORP	2005	KELLY SERVICES	ROBERT HALF INTL

	FINANCIAL GROUP INC			INC -CL A	INC
1997	AMERICAN FINANCIAL GROUP INC	AON CORP	2003	LABRANCHE & CO INC	LABRANCHE & CO INC
1998	AMERICAN FINANCIAL GROUP INC	AON CORP	2004	LABRANCHE & CO INC	FINANCIAL FEDERAL CORP
1999	AMERICAN FINANCIAL GROUP INC	MBIA INC	2005	LABRANCHE & CO INC	EDWARDS (A G) INC
2000	AMERISOURCEBERGEN CORP	QUEST DIAGNOSTICS INC	2006	LABRANCHE & CO INC	FINANCIAL FEDERAL CORP
2001	AMERISOURCEBERGEN CORP	BAXTER INTERNATIONAL INC	2007	LABRANCHE & CO INC	FINANCIAL FEDERAL CORP
2002	AMERISOURCEBERGEN CORP	MEDTRONIC INC	2008	LABRANCHE & CO INC	LENDER PROCESSING SERVICES
2003	AMERISOURCEBERGEN CORP	BAXTER INTERNATIONAL INC	2000	MARRIOTT INTL INC	YUM BRANDS INC
2004	AMERISOURCEBERGEN CORP	MEDCO HEALTH SOLUTIONS INC	2001	MARRIOTT INTL INC	YUM BRANDS INC
2005	AMERISOURCEBERGEN CORP	BAXTER INTERNATIONAL INC	2002	MARRIOTT INTL INC	YUM BRANDS INC
1994	AQUILA INC	TECO ENERGY INC	2003	MARRIOTT INTL INC	YUM BRANDS INC
1995	AQUILA INC	NISOURCE INC	2004	MARRIOTT INTL INC	YUM BRANDS INC
1996	AQUILA INC	WISCONSIN ENERGY CORP	2005	MARRIOTT INTL INC	BLOCK H & R INC
1997	AQUILA INC	SEMPRA ENERGY	2002	MASTEC INC	BARNES GROUP INC
1998	AQUILA INC	ALLEGHENY ENERGY INC	2003	MASTEC INC	WOODWARD GOVERNOR CO
1999	AQUILA INC	ALLEGHENY ENERGY INC	2004	MASTEC INC	APPLIED INDUSTRIAL TECH INC
2000	AWARE INC	BEI TECHNOLOGIES INC	2005	MASTEC INC	ELKCORP
2001	AWARE INC	BEI TECHNOLOGIES INC	2006	MASTEC INC	CERADYNE INC
2002	AWARE INC	BEI TECHNOLOGIES INC	2007	MASTEC INC	APPLIED INDUSTRIAL TECH INC
2003	AWARE INC	SYNAPTICS INC	1997	MAXIM INTEGRATED PRODUCTS	MICROCHIP TECHNOLOGY INC
2004	AWARE INC	SYNAPTICS INC	1998	MAXIM INTEGRATED PRODUCTS	CYPRESS SEMICONDUCTOR CORP
2005	AWARE INC	DIGI INTERNATIONAL INC	1999	MAXIM INTEGRATED PRODUCTS	CYPRESS SEMICONDUCTOR CORP
2004	AXCELIS TECHNOLOGIES INC	CREE INC	2000	MAXIM INTEGRATED PRODUCTS	LAM RESEARCH CORP
2005	AXCELIS TECHNOLOGIES INC	CREE INC	2001	MAXIM INTEGRATED PRODUCTS	TERADYNE INC
2006	AXCELIS TECHNOLOGIES INC	CREE INC	2002	MAXIM INTEGRATED PRODUCTS	MAXIM INTEGRATED PRODUCTS
2007	AXCELIS TECHNOLOGIES INC	CYMER INC	2002	MCKESSON CORP	BAXTER INTERNATIONAL INC
2008	AXCELIS TECHNOLOGIES INC	CYMER INC	2003	MCKESSON CORP	MEDTRONIC INC
1999	BELL INDUSTRIES INC	SEI INVESTMENTS CO	2004	MCKESSON CORP	MEDTRONIC INC
2000	BELL INDUSTRIES INC	CASH AMERICA INTL INC	2005	MCKESSON CORP	HCA INC
2001	BELL INDUSTRIES	CASH AMERICA INTL INC	2006	MCKESSON CORP	BAXTER

	INC				INTERNATIONAL INC
2002	BELL INDUSTRIES INC	CASH AMERICA INTL INC	2007	MCKESSON CORP	MEDCO HEALTH SOLUTIONS INC
2003	BELL INDUSTRIES INC	CASH AMERICA INTL INC	2001	MORGAN STANLEY	LEHMAN BROTHERS HOLDINGS INC
2004	BELL INDUSTRIES INC	CASH AMERICA INTL INC	2002	MORGAN STANLEY	EDWARDS (A G) INC
2002	CENTRAL VERMONT PUB SERV	GREEN MOUNTAIN POWER CORP	2003	MORGAN STANLEY	EDWARDS (A G) INC
2003	CENTRAL VERMONT PUB SERV	GREEN MOUNTAIN POWER CORP	2004	MORGAN STANLEY	EDWARDS (A G) INC
2004	CENTRAL VERMONT PUB SERV	GREEN MOUNTAIN POWER CORP	2005	MORGAN STANLEY	FINANCIAL FEDERAL CORP
2005	CENTRAL VERMONT PUB SERV	GREEN MOUNTAIN POWER CORP	2006	MORGAN STANLEY	FANNIE MAE
2006	CENTRAL VERMONT PUB SERV	EL PASO ELECTRIC CO	2002	NACCO INDUSTRIES -CL A	PRECISION CASTPARTS CORP
2007	CENTRAL VERMONT PUB SERV	NORTHWEST NATURAL GAS CO	2003	NACCO INDUSTRIES -CL A	CRANE CO
1993	CHARTER ONE FINANCIAL INC	MERCANTILE BANKSHARES CORP	2004	NACCO INDUSTRIES -CL A	CRANE CO
1994	CHARTER ONE FINANCIAL INC	MERCANTILE BANKSHARES CORP	2005	NACCO INDUSTRIES -CL A	CRANE CO
1995	CHARTER ONE FINANCIAL INC	MARSHALL & ILSLEY CORP	2006	NACCO INDUSTRIES -CL A	BRIGGS & STRATTON
1996	CHARTER ONE FINANCIAL INC	FIRST SECURITY CORP/DE	2007	NACCO INDUSTRIES -CL A	THOMAS & BETTS CORP
1997	CHARTER ONE FINANCIAL INC	MARSHALL & ILSLEY CORP	1999	NEOMAGIC CORP	RAMBUS INC
1998	CHARTER ONE FINANCIAL INC	CHARTER ONE FINANCIAL INC	2000	NEOMAGIC CORP	SUPERTEX INC
2001	CIENA CORP	TECH DATA CORP	2001	NEOMAGIC CORP	SUPERTEX INC
2002	CIENA CORP	LEXMARK INTL INC -CL A	2002	NEOMAGIC CORP	SUPERTEX INC
2003	CIENA CORP	STORAGE TECHNOLOGY CP	2003	NEOMAGIC CORP	SUPERTEX INC
2004	CIENA CORP	DIEBOLD INC	2004	NEOMAGIC CORP	CYMER INC
2005	CIENA CORP	AVX CORP	2003	NEW JERSEY RESOURCES CORP	NORTHWEST NATURAL GAS CO
2006	CIENA CORP	ADC TELECOMMUNICATIONS INC	2004	NEW JERSEY RESOURCES CORP	NORTHWEST NATURAL GAS CO
2000	CIRCUIT CITY STORES INC	SHERWIN-WILLIAMS CO	2005	NEW JERSEY RESOURCES CORP	NORTHWEST NATURAL GAS CO
2001	CIRCUIT CITY STORES INC	NORDSTROM INC	2006	NEW JERSEY RESOURCES CORP	PIEDMONT NATURAL GAS CO
2002	CIRCUIT CITY STORES INC	TJX COMPANIES INC	2007	NEW JERSEY RESOURCES CORP	PIEDMONT NATURAL GAS CO
2003	CIRCUIT CITY STORES INC	AUTOZONE INC	2008	NEW JERSEY RESOURCES CORP	PIEDMONT NATURAL GAS CO
2004	CIRCUIT CITY STORES INC	AUTOZONE INC	2003	PCTEL INC	BEI TECHNOLOGIES INC
2005	CIRCUIT CITY STORES INC	AUTOZONE INC	2004	PCTEL INC	DIGI INTERNATIONAL INC
1994	CIRRUS LOGIC INC	ATMEL CORP	2005	PCTEL INC	DAKTRONICS INC
1995	CIRRUS LOGIC INC	ATMEL CORP	2006	PCTEL INC	DIGI INTERNATIONAL INC
1996	CIRRUS LOGIC INC	XILINX INC	2007	PCTEL INC	DIGI INTERNATIONAL INC

1997	CIRRUS LOGIC INC	TERADYNE INC	2008	PCTEL INC	METHODE ELECTRONICS INC
1998	CIRRUS LOGIC INC	NOVELLUS SYSTEMS INC	2002	PERICOM SEMICONDUCTOR CORP	RAMBUS INC
1999	CIRRUS LOGIC INC	ACTEL CORP	2003	PERICOM SEMICONDUCTOR CORP	CREE INC
1998	CLIFFS NATURAL RESOURCES INC	APTARGROUP INC	2004	PERICOM SEMICONDUCTOR CORP	MEMC ELECTRONIC MATERIALS INC
1999	CLIFFS NATURAL RESOURCES INC	QUANEX CORP	2005	PERICOM SEMICONDUCTOR CORP	MEMC ELECTRONIC MATERIALS INC
2000	CLIFFS NATURAL RESOURCES INC	FLORIDA ROCK INDUSTRIES INC	2006	PERICOM SEMICONDUCTOR CORP	CYMER INC
2001	CLIFFS NATURAL RESOURCES INC	MINERALS TECHNOLOGIES INC	2007	PERICOM SEMICONDUCTOR CORP	MEMC ELECTRONIC MATERIALS INC
2002	CLIFFS NATURAL RESOURCES INC	FLORIDA ROCK INDUSTRIES INC	1994	PNM RESOURCES INC	IPALCO ENTERPRISES INC
2003	CLIFFS NATURAL RESOURCES INC	WAUSAU PAPER CORP	1995	PNM RESOURCES INC	IPALCO ENTERPRISES INC
1999	COACHMEN INDUSTRIES INC	LENOX GROUP INC	1996	PNM RESOURCES INC	IPALCO ENTERPRISES INC
2000	COACHMEN INDUSTRIES INC	COACH INC	1997	PNM RESOURCES INC	NICOR INC
2001	COACHMEN INDUSTRIES INC	JAKKS PACIFIC INC	1998	PNM RESOURCES INC	ONEOK INC
2002	COACHMEN INDUSTRIES INC	STRIDE RITE CORP	2000	PNM RESOURCES INC	UNISOURCE ENERGY CORP
2003	COACHMEN INDUSTRIES INC	STRIDE RITE CORP	2000	POWER-ONE INC	TORO CO
2004	COACHMEN INDUSTRIES INC	STRIDE RITE CORP	2001	POWER-ONE INC	WATSCO INC
2000	COHU INC	RAMBUS INC	2002	POWER-ONE INC	GRACO INC
2001	COHU INC	RAMBUS INC	2003	POWER-ONE INC	ACTUANT CORP -CL A
2002	COHU INC	MICROSEMI CORP	2004	POWER-ONE INC	CERADYNE INC
2003	COHU INC	MICROSEMI CORP	2005	POWER-ONE INC	APOGEE ENTERPRISES INC
2004	COHU INC	MICROSEMI CORP	2000	PRESIDENTIAL LIFE CORP	FIRST AMERICAN CORP/CA
2005	COHU INC	CABOT MICROELECTRONICS CORP	2001	PRESIDENTIAL LIFE CORP	DELPHI FINANCIAL GROUP INC
2000	CONCORD CAMERA CORP	ROYAL APPLIANCE MFG CO	2002	PRESIDENTIAL LIFE CORP	DELPHI FINANCIAL GROUP INC
2001	CONCORD CAMERA CORP	COACH INC	2003	PRESIDENTIAL LIFE CORP	DELPHI FINANCIAL GROUP INC
2002	CONCORD CAMERA CORP	K-SWISS INC -CL A	2004	PRESIDENTIAL LIFE CORP	DELPHI FINANCIAL GROUP INC
2003	CONCORD CAMERA CORP	JUNO LIGHTING INC	2005	PRESIDENTIAL LIFE CORP	DELPHI FINANCIAL GROUP INC
2004	CONCORD CAMERA CORP	JUNO LIGHTING INC	2001	RAYMOND JAMES FINANCIAL CORP	EDWARDS (A G) INC
2005	CONCORD CAMERA CORP	POOL CORP	2002	RAYMOND JAMES FINANCIAL CORP	LABRANCHE & CO INC
2002	CONSTELLATION ENERGY GRP INC	NSTAR	2003	RAYMOND JAMES FINANCIAL CORP	FINANCIAL FEDERAL CORP
2003	CONSTELLATION ENERGY GRP INC	NSTAR	2004	RAYMOND JAMES FINANCIAL CORP	EDWARDS (A G) INC
2004	CONSTELLATION ENERGY GRP INC	NSTAR	2005	RAYMOND JAMES FINANCIAL CORP	FEDERATED INVESTORS INC
2005	CONSTELLATION ENERGY GRP INC	AES CORP	2006	RAYMOND JAMES FINANCIAL CORP	FANNIE MAE

2006	CONSTELLATION ENERGY GRP INC	FIRSTENERGY CORP	1993	SAFECO CORP	PROGRESSIVE CORP-OHIO
2007	CONSTELLATION ENERGY GRP INC	FIRSTENERGY CORP	1994	SAFECO CORP	MBIA INC
2002	COSTCO WHOLESALE CORP	WALGREEN CO	1995	SAFECO CORP	CHUBB CORP
2003	COSTCO WHOLESALE CORP	WALGREEN CO	1996	SAFECO CORP	CHUBB CORP
2004	COSTCO WHOLESALE CORP	WALGREEN CO	1997	SAFECO CORP	CHUBB CORP
2005	COSTCO WHOLESALE CORP	ALBERTSON'S INC	1998	SAFECO CORP	CHUBB CORP
2006	COSTCO WHOLESALE CORP	WALGREEN CO	1999	SAKS INC	GAP INC
2007	COSTCO WHOLESALE CORP	KROGER CO	2000	SAKS INC	KOHL'S CORP
1995	CROSS (A.T.) & CO -CL A	NATIONAL COMPUTER SYS INC	2001	SAKS INC	SHERWIN-WILLIAMS CO
1996	CROSS (A.T.) & CO -CL A	MERRILL CORPORATION	2002	SAKS INC	NORDSTROM INC
1997	CROSS (A.T.) & CO -CL A	NEW ENGLAND BUSINESS SVC INC	2003	SAKS INC	NORDSTROM INC
1998	CROSS (A.T.) & CO -CL A	ENNIS INC	2004	SAKS INC	NORDSTROM INC
1999	CROSS (A.T.) & CO -CL A	ENNIS INC	1999	SCM MICROSYSTEMS INC	POWERWAVE TECHNOLOGIES INC
2000	CROSS (A.T.) & CO -CL A	ENNIS INC	2000	SCM MICROSYSTEMS INC	AEROFLEX INC
2001	CRYOLIFE INC	ARTHROCARE CORP	2001	SCM MICROSYSTEMS INC	PLANTRONICS INC
2002	CRYOLIFE INC	SURMODICS INC	2002	SCM MICROSYSTEMS INC	BEL FUSE INC
2003	CRYOLIFE INC	MERIDIAN BIOSCIENCE INC	2003	SCM MICROSYSTEMS INC	DAKTRONICS INC
2004	CRYOLIFE INC	MERIDIAN BIOSCIENCE INC	2004	SCM MICROSYSTEMS INC	DAKTRONICS INC
2005	CRYOLIFE INC	MERIDIAN BIOSCIENCE INC	2000	SCPIE HOLDINGS INC	HILB ROGAL & HOBBS CO
2006	CRYOLIFE INC	MERIDIAN BIOSCIENCE INC	2001	SCPIE HOLDINGS INC	STEWART INFORMATION SERVICES
2000	DELPHI CORP	ARVINMERITOR INC	2002	SCPIE HOLDINGS INC	STEWART INFORMATION SERVICES
2001	DELPHI CORP	LEAR CORP	2003	SCPIE HOLDINGS INC	STEWART INFORMATION SERVICES
2002	DELPHI CORP	LEAR CORP	2004	SCPIE HOLDINGS INC	STEWART INFORMATION SERVICES
2003	DELPHI CORP	JOHNSON CONTROLS INC	2005	SCPIE HOLDINGS INC	HILB ROGAL & HOBBS CO
2004	DELPHI CORP	JOHNSON CONTROLS INC	1994	SIMON WORLDWIDE INC	ADVO INC
2005	DELPHI CORP	JOHNSON CONTROLS INC	1995	SIMON WORLDWIDE INC	ADVO INC
1999	DILLARDS INC - CL A	LOWE'S COMPANIES INC	1996	SIMON WORLDWIDE INC	ADVO INC
2000	DILLARDS INC - CL A	GAP INC	1997	SIMON WORLDWIDE INC	NELSON (THOMAS) INC
2001	DILLARDS INC -	KOHL'S CORP	1998	SIMON WORLDWIDE	NELSON (THOMAS)

	CL A			INC	INC
2002	DILLARDS INC - CL A	KOHL'S CORP	1999	SIMON WORLDWIDE INC	CATALINA MARKETING CORP
2003	DILLARDS INC - CL A	STAPLES INC	2000	STARWOOD HOTELS&RESORTS WRLD	BLOCK H & R INC
2004	DILLARDS INC - CL A	TJX COMPANIES INC	2001	STARWOOD HOTELS&RESORTS WRLD	BLOCK H & R INC
1999	DRIL-QUIP INC	REMINGTON OIL&GAS CP -CL B	2002	STARWOOD HOTELS&RESORTS WRLD	BLOCK H & R INC
2000	DRIL-QUIP INC	REMINGTON OIL&GAS CP -CL B	2003	STARWOOD HOTELS&RESORTS WRLD	BLOCK H & R INC
2001	DRIL-QUIP INC	REMINGTON OIL&GAS CP -CL B	2004	STARWOOD HOTELS&RESORTS WRLD	BLOCK H & R INC
2002	DRIL-QUIP INC	REMINGTON OIL&GAS CP -CL B	2005	STARWOOD HOTELS&RESORTS WRLD	INTL GAME TECHNOLOGY
2003	DRIL-QUIP INC	CARBO CERAMICS INC	2002	THERAGENICS CORP	THERAGENICS CORP
2004	DRIL-QUIP INC	CARBO CERAMICS INC	2003	THERAGENICS CORP	ICU MEDICAL INC
2000	DTE ENERGY CO	ALLEGHENY ENERGY INC	2004	THERAGENICS CORP	MERIT MEDICAL SYSTEMS INC
2001	DTE ENERGY CO	ALLEGHENY ENERGY INC	2005	THERAGENICS CORP	KENSEY NASH CORP
2002	DTE ENERGY CO	PUGET ENERGY INC	2006	THERAGENICS CORP	KENSEY NASH CORP
2003	DTE ENERGY CO	PUGET ENERGY INC	2007	THERAGENICS CORP	KENSEY NASH CORP
2004	DTE ENERGY CO	AES CORP	2003	TRANSATLANTIC HOLDINGS INC	BERKLEY (W R) CORP
2005	DTE ENERGY CO	FIRSTENERGY CORP	2004	TRANSATLANTIC HOLDINGS INC	BERKLEY (W R) CORP
1999	EGL INC	SKYWEST INC	2005	TRANSATLANTIC HOLDINGS INC	BERKLEY (W R) CORP
2000	EGL INC	SWIFT TRANSPORTATION CO INC	2006	TRANSATLANTIC HOLDINGS INC	BERKLEY (W R) CORP
2001	EGL INC	KIRBY CORP	2007	TRANSATLANTIC HOLDINGS INC	PHILADELPHIA CONS HLDG CORP
2002	EGL INC	KIRBY CORP	2008	TRANSATLANTIC HOLDINGS INC	INFINITY PROPERTY & CAS CORP
2003	EGL INC	C H ROBINSON WORLDWIDE INC	2002	TRIQUINT SEMICONDUCTOR INC	CREE INC
2004	EGL INC	C H ROBINSON WORLDWIDE INC	2003	TRIQUINT SEMICONDUCTOR INC	LAM RESEARCH CORP
2002	ELOYALTY CORP	MICROSTRATEGY INC	2004	TRIQUINT SEMICONDUCTOR INC	LAM RESEARCH CORP
2003	ELOYALTY CORP	COMPUTER TASK GROUP INC	2005	TRIQUINT SEMICONDUCTOR INC	ALTERA CORP
2004	ELOYALTY CORP	COMPUTER TASK GROUP INC	2006	TRIQUINT SEMICONDUCTOR INC	MEMC ELECTRONIC MATRIALS INC
2005	ELOYALTY CORP	COMPUTER TASK GROUP INC	2007	TRIQUINT SEMICONDUCTOR INC	APPLIED MATERIALS INC
2006	ELOYALTY CORP	COMPUTER TASK GROUP INC	2002	UIL HOLDINGS CORP	UIL HOLDINGS CORP
2007	ELOYALTY CORP	RADIANT SYSTEMS INC	2003	UIL HOLDINGS CORP	AQUA AMERICA INC
2002	ESS TECHNOLOGY	ACTEL CORP	2004	UIL HOLDINGS CORP	EL PASO ELECTRIC CO

	INC				
2003	ESS TECHNOLOGY INC	RAMBUS INC	2005	UIL HOLDINGS CORP	EL PASO ELECTRIC CO
2004	ESS TECHNOLOGY INC	ATMI INC	2006	UIL HOLDINGS CORP	NORTHWEST NATURAL GAS CO
2005	ESS TECHNOLOGY INC	CYMER INC	2007	UIL HOLDINGS CORP	WGL HOLDINGS INC
2006	ESS TECHNOLOGY INC	MICREL INC	2003	ULTRATECH INC	NVIDIA CORP
2007	ESS TECHNOLOGY INC	CABOT MICROELECTRONICS CORP	2004	ULTRATECH INC	ALTERA CORP
2000	EXTREME NETWORKS INC	TECHNITROL INC	2005	ULTRATECH INC	MAXIM INTEGRATED PRODUCTS
2001	EXTREME NETWORKS INC	QLOGIC CORP	2006	ULTRATECH INC	MAXIM INTEGRATED PRODUCTS
2002	EXTREME NETWORKS INC	QLOGIC CORP	2007	ULTRATECH INC	TEXAS INSTRUMENTS INC
2003	EXTREME NETWORKS INC	TRIMBLE NAVIGATION LTD	2008	ULTRATECH INC	MEMC ELECTRONIC MATERIALS INC
2004	EXTREME NETWORKS INC	ITRON INC	2003	UTSTARCOM INC	ANDREW CORP
2005	EXTREME NETWORKS INC	PLEXUS CORP	2004	UTSTARCOM INC	JABIL CIRCUIT INC
2000	FRANKLIN COVEY CO	G&K SERVICES INC -CL A	2005	UTSTARCOM INC	ANDREW CORP
2001	FRANKLIN COVEY CO	DELUXE CORP	2006	UTSTARCOM INC	ANDREW CORP
2002	FRANKLIN COVEY CO	ROLLINS INC	2007	UTSTARCOM INC	BROCADE COMMUNICATIONS SYS
2003	FRANKLIN COVEY CO	NAVIGANT CONSULTING INC	2008	UTSTARCOM INC	ARRIS GROUP INC
2004	FRANKLIN COVEY CO	HEALTHCARE SERVICES GROUP	2000	VICOR CORP	SIMPSON MANUFACTURING INC
2005	FRANKLIN COVEY CO	HEALTHCARE SERVICES GROUP	2001	VICOR CORP	GRACO INC
1999	GOODYS FAMILY CLOTHING INC	ABERCROMBIE & FITCH -CL A	2002	VICOR CORP	ACTUANT CORP -CL A
2000	GOODYS FAMILY CLOTHING INC	AARON'S INC	2003	VICOR CORP	LAWSON PRODUCTS
2001	GOODYS FAMILY CLOTHING INC	AARON'S INC	2004	VICOR CORP	LAWSON PRODUCTS
2002	GOODYS FAMILY CLOTHING INC	GENESCO INC	2005	VICOR CORP	INSTEEL INDUSTRIES
2003	GOODYS FAMILY CLOTHING INC	GENESCO INC	2000	WOLVERINE TUBE INC	NORDSON CORP
2004	GOODYS FAMILY CLOTHING INC	TWEEN BRANDS INC	2001	WOLVERINE TUBE INC	CLARCOR INC
1999	HARMONIC INC	ROGERS CORP	2002	WOLVERINE TUBE INC	CLARCOR INC
2000	HARMONIC INC	POLYCOM INC	2003	WOLVERINE TUBE INC	CLARCOR INC
2001	HARMONIC INC	INTER-TEL INC -SER A	2004	WOLVERINE TUBE INC	CLARCOR INC
2002	HARMONIC INC	MERCURY COMPUTER SYSTEMS INC	2005	WOLVERINE TUBE INC	APPLIED INDUSTRIAL TECH INC
2003	HARMONIC INC	MERCURY COMPUTER SYSTEMS INC	2000	XL CAPITAL LTD	MBIA INC
2004	HARMONIC INC	BEL FUSE INC	2001	XL CAPITAL LTD	MBIA INC
1993	HAUSER INC	MYERS INDUSTRIES INC	2002	XL CAPITAL LTD	MBIA INC

1994	HAUSER INC	PENFORD CORP	2003	XL CAPITAL LTD	CHUBB CORP
1995	HAUSER INC	LILLY INDS INC -CL A	2004	XL CAPITAL LTD	CHUBB CORP
1996	HAUSER INC	QUAKER CHEMICAL CORP	2005	XL CAPITAL LTD	CHUBB CORP
1997	HAUSER INC	QUAKER CHEMICAL CORP			