THE EFFECT OF NON-RECURRING GAINS AND LOSSES ON THE CEO'S COMPENSATION

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Abstract

In this study we examine the impact of 'Non-recurring Items (NRI),' reported on the income statements of public companies, on the CEOs' pay-performance relationship. Using panel (time-series cross-sectional) data for 435 companies from a wide range of industries over the period 1998-2002, we first revisit the pay-performance model estimated by Gaver and Gaver (1998). We then extend the Gaver and Gaver (1998) model by analyzing a) the impact of NRI on total (cash plus non cash) compensation of CEOs, b) the role of firm size, and c) the influence of multiple NRI reporting by the same firm. Our results indicate that the Gaver and Gaver (1998) findings are robust to the inclusion of firm size in the case of cash compensation. This, however, does not hold in the case of total compensation. The pay-performance model for cash compensation and total compensation yields significantly different results with respect to NRI as well. Our results indicate that multiple reporting of NRI by the same firm affects the parameter estimates. Finally, we examine the issue of parameter heterogeneity using the quantile regression approach, and report findings which provide some evidence that parameter heterogeneity may deserve attention in executive compensation studies.

Keywords: CEO Compensation, Quantile Regression, Agency Model, Non-recurring Items, Pay for Performance.

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1. Introduction

The relationship between executive compensation and corporate performance has been extensively studied by researchers from various perspectives. Prior studies have confirmed the positive relation between firm size and executive compensation.[1] Research articles in the last two decades have also shown that there is a strong empirical relationship between compensation and company performance.[2]

Earlier compensation studies used salary and bonus as the measure of compensation based on data availability and significance of cash components of executive compensation. Many studies use an aggregated measure to proxy firm's performance. It is however, not clear if the different components of earnings or specific underlying transactions are adjusted to get to an aggregate adjusted earnings number on which compensation is based. Banker & Datar (1989) explain that salary is based on an aggregate earnings number rather than the underlying transactions, as it proves too costly and impractical to base the salary on individual and varied transactions. Natarajan (1996) however, argues that components of earnings may be used as performance measures if they provide more information (over and above accounting earnings) about managerial decisions.

Research has also shown that earnings components relate to CEO performance differently and so do not enter the compensation function in the same manner (Clinch & Magliolo (1993)). Various proxies for company performance such as accounting earnings vs. market returns, reported earnings vs. earnings before extraordinary items, and aggregate earnings vs. earnings components have been analyzed for their impact on the compensation package.

Our purpose in this study is to gain further insights into the nature of the relationship between chief executive officer (CEO) compensation and a firm's performance as measured by the results of continuing operations as well as non-recurring

[1] See Carpenter and Sanders (2002), Cordeiro and Veliyath (2003), Indjejikian and Nanda (2002), and Yermack (1995), among others.
[2] Abowd, 1990; Jensen and Murphy, 1990; Murphy, 1985

gains and losses. This study examines both cash and stock-based compensation over the five year period 1998-2002, when at least one non-recurring item was reported by the firm. We take the Gaver & Gaver (1998) model and extend it to include total compensation (both cash and non-cash) and add sales as a proxy for the size of the firm. We refine the analysis by our sample selecting process where we adjust for CEO turnover, and multiple year non-recurring reporting by the firms. We also look at the issue of parametric heterogeneity and use quantile regression to test the significance of the conditional distribution of the dependent variable. We find that the Gaver and Gaver (1998) results are robust to the inclusion of size of the firm. We also find that the non-recurring gains do not appear significant with respect to total CEO compensation. Our analyses indicate that cash and total compensations are affected significantly by NRI losses after controlling for the frequency of NRI reporting. The results indicate that there is evidence of parameter heterogeneity between lower and higher quantiles, combined with parameter homogeneity within the lower quantiles as well as within the higher quantiles.

The remainder of the paper is organized as follows. We present a review of literature in section 2 and research method in section 3. Then we describe the data and report on the sample selection process in section 4 followed by presentation of our findings in section 5. We provide the summary of our findings and concluding remarks in section 6.

2. Literature Review

For the most part, research on executive compensation has been confined to cash compensation as a proxy for total compensation, e.g., Abowd (1990), Gaver and Gaver (1998), Jensen and Murphy (1990), Lambert and Larker (1987), Mishra, Gobeli, and May (2000), Murphy (1985), and Sloan (1993), among others. Cash compensation comprises salary and bonuses, but does not include other forms of compensation, such as long-term incentives payouts and stock option grants.

In earlier studies the use of cash compensation was for the most part justified on the basis of data availability and the relative magnitude of the cash component in total compensation. However, the changes that occurred in the last decade in the composition of compensation contracts together with the SEC mandated disclosure regarding stock option grants issued to executives,[3] have resulted in an increased attention to the relevance of non-cash compensation in pay-performance studies. Notable examples are Bertrand and Mullainathan (2000), Core, Guay, and Verrecchia (2003), Cordeiro and Veliyath (2003), and Main, Bruce, and Buck (1996), among others.

Many studies find strong linkages between accounting-based measures of performance and executive compensation (Lewellen and Huntsman (1970), Sloan (1993), Gaver and Gaver (1998), and Carpenter and Sanders (2002)). Lambert & Larcker (1987) and Sloan (1993) indicate that cash compensation is empirically associated with accounting earnings rather than market returns. These studies imply that accounting performance measures are used to shield executives from market wide fluctuations in firm value beyond their control. Recent empirical research in this area has produced conflicting results (Boschen, Duru, Gordon, and Smith (2003)).

Managerial decisions that result in income decreasing choices such as choice of LIFO over FIFO and restructuring charges do not seem to affect compensation (Abdel-Khalik (1985), Dechow (1994)). On the other hand, gains from transactions also do not seem to enter the compensation function (Defeo (1989)). Healy, Kang, and Palepu (1987) suggest that changes in the method of depreciation impact CEO's salary and bonus computations. Balsam (1998) reports that compensation committees do seem to reward managers for performance based on components of earnings. Adut, Cready and Lopez (2003) find that CEO compensation is not completely shielded from an adverse effect of restructuring charges on company earnings.

In this particular line of research, Gaver & Gaver (1998) partition the income into above the line and below the line earnings instead of analyzing the impact of specific transactions on cash compensation. They separate below the line earnings components, i.e., extraordinary items and discontinued operations, into income increasing and income decreasing items to test whether CEO compensation is affected by non-recurring gains or losses. They find that when income before extraordinary items and discontinued operations is positive, compensation is significantly correlated to income above the line as well as non-recurring gains below the line. Non-recurring losses below the line, however, seem insignificant, i.e., compensation is based on earnings before non-recurring losses.

Gaver & Gaver (1998) use COMPUSTAT data from 376 firms from 1970 to 1996 to estimate a firm's specific time-series regressions based on

[3] Beginning with fiscal year 1993, companies have been required by the Securities and Exchange Commission to annually report individual salary, bonuses, other annual compensation, restricted stock grants, long-term incentives payouts, stock option grants, and all other compensation for the top five paid executives.

15 to 27 observations per firm to get their results. They use cash compensation as the dependent variable in estimating their regressions. By estimating firm-specific regressions, they are able to control for the varying parameters across firms.

This study extends the earlier study to include a broad measure of CEO compensation that includes cash and non-cash or stock-based components of compensation contracts as the dependant variable in the compensation model. Our analyses are based on cross-section time-series balanced panel data for 435 firms with different levels of market capitalization. Our empirical analyses benefit from refinement of research design and modification of pay-performance model specification. In the next section we describe the extent of such changes in more detail.

3. Methodology

Our initial examination of CEO compensation and its relationship to the result of continuing operations as well as non-recurring gains or losses is based on the Generalized Least Square estimation of Gaver and Gaver (1998) model. We have modified the specification of this model to allow for cross-section time series panel data analyses. We assume panels' heteroskedasticity in our GLS estimation process. This model is presented below:

$$COMP_{it} = \alpha + \beta_1 INBNRI_{it} + \beta_2 LOSSBNRI_{it} + \lambda_1 NRIGAINS_{it} + \lambda_2 NRILOSSES_{it} + \varepsilon_{it}$$

Where:

$COMP_{it}$ is the compensation of the CEO of firm i in year t

$INBNRI_{it}$ is earnings before extraordinary items and discontinued operations for firm i in year t;

$LOSSBNRI_{it}$ is earnings before extraordinary items and discontinued operations for firm i in year t if the amount is negative, zero otherwise;

$NRIGAINS_{it}$ is non-recurring gains reported for firm i in year t if the combined amount is positive, zero otherwise;

$NRILOSSES_{it}$ is non-recurring gains reported for firm i in year t if the combined amount is negative, zero otherwise;

ε_{it} is the error term.

As discussed in the previous section, earlier research on executive compensation was confined to cash compensation. However, recent studies have shown the enormous expansion of non-cash compensation, and the significant proliferation in the number of firms offering stock options to their executives and employees that points to the relevance of non-cash compensation in CEO compensation studies. Our examination will be based on both cash (salary and bonus) and total compensation paid to the firm's CEO. We will also examine the robustness of these models to the inclusion of sales, as the proxy for the size of the firm, as an independent variable which has been done in prior cross-sectional data analyses.

Gaver and Gaver's data report 5.7 CEOs per firm over an average 22 year time series. They did not control for changes in compensation due to CEO change over the study period. It is expected that the terms of CEO compensation contracts will change as a result of CEO turnover. They further indicate that each firm on average had 5 annual reports that include non-recurring items. High frequency observation of non-recurring items is contrary to the intent of such classification. This might have also affected their findings.

In this study we will control for the CEO changes in our sample selection process to avoid the confounding effect of CEO turnover. We will further refine analyses of this study by addressing the issue of multiple-year non-recurring items in the sample. This objective will be achieved by identifying time-series for the firms that have a single reporting of non-recurring items over this study period. These design modifications will come at the cost of reducing the sample size. However, the trade-off seems necessary for the desired refinement of this study.

We will also look at the cross section of these firms by including only the initial observation of non-recurring items for each firm. This partitioning eliminates the influence of multiple non-recurring items for a firm as well as observations that do not involve non-recurring items. Ordinary Least Square (OLS) analyses of such a cross-section of firms should provide further insights about the influence of non-recurring items.

However, estimation of the relationship between executive compensation and financial variables using OLS methods assumes that such relationship is the same across the conditional distribution of executive compensation. The OLS method depicts relationships at their conditional means. It is however entirely possible for an economic relationship to be significant at the mean and insignificant over other parts of the conditional distribution of the dependent variable, and vice-versa, an economic relationship that may be insignificant at the mean may be highly significant over other regions of the conditional distribution of the dependent variable.

This is known in the statistical literature as the issue of parametric heterogeneity. We use the recently developed techniques of Quantile regression to examine the assumption of uniformity of effects of financial variables on executive compensation and investigate whether these effects differ across the conditional

executive compensation distribution. These techniques enable the researcher to have a complete view about the dependence of the conditional distribution of Y on X. This means that we have the possibility to investigate the influence of the explanatory variables on the shape of the distribution of Y.

4. Data and sample selection

This section describes the sample, data sources and variable measurement. All data for this study are drawn from Standard & Poor's (2004) *ExecuComp* database. The sample consists of panel data of 435 US firms and covers the period 1998-2002.[4] This sample is obtained from an initial sample of 2,428 US firms after imposing the condition that time-series data for the entire study period must be available through *ExecuComp* database and the firms' income statements over the study period include at least one instance of reporting a non-recurring item. Furthermore, the CEO tenure must extend over the entire period of 1998 to 2002. This condition is imposed to guarantee homogeneity in the pay-performance relationship and to control to some degree for human capital heterogeneity within firms. These constraints resulted in the omission of 1,961 firms. Panel A of table 1 presents the sample selection process.

Detailed information about industry composition of the sample is presented in Panel B of table 1. The sample encompasses 25 industries, with 2-digit SIC ranging from 01 to 99. The electrical equipment industry has the largest sample representation, with 39 firms or about 9 percent of the sample, followed by chemical and services, each with 31 firms or about 7.1 percent of the sample, and utilities and food industries each with 29 firms or about 6.7 percent of the sample. The industries with the smallest sample representation are toy manufacturing (2), furniture (6), construction (6), and mining (7) ranging from 0.5 percent to 1.6 percent of the sample.

< Insert Table 1 about here >

The sample has at least two advantages over other samples. First, the sample is random which utilizes the most recent available information. Not only does it include newer firms, but also large firms are not overly represented[5] as in the studies that use common data sources such as *Forbes* or *Fortune*. The sample contains data from a wide variety of firms: those in Standard & Poor's 500, Standard and Poor's Mid-Cap 400, and Standard and Poor's Small-Cap 600, which provide considerable variation in firm size.[6] The sample is taken over a period of time that follows SEC regulations on disclosure requirements, and the FASB debate on accounting for stock options, which ultimately produced SFAS 123 "Accounting for Stock-based Compensation." Thus, the sample corresponds to a period in which firms made compensation decisions in accord with current disclosure requirements, and this is more likely to add to the generalizability of the findings.

Two measures of executive compensation are used in this study: cash compensation and total (cash and non-cash) compensation. Cash compensation (*CASHCOMP*) is defined as the sum of salary and bonus. Total compensation (*TOTALCOMP*), on the other hand, includes both cash and non-cash compensation. Non-cash compensation is composed of long-term incentive payouts, the value of restricted stock grants, the value of stock option grants and any other compensation item for the year. Stock options are valued at the grant-date using *ExecuComp*'s modified Black and Scholes (1973) methodology.[7] Firm performance is modeled using accounting-based measures. Accounting-based performance measures are income and losses from continuing operations defined as income before extraordinary items and discontinued operations (*INBNRI*) and net income from non-recurring items (*NINRI*) which is divided into non-recurring gains (*NRIGAINS*) and non-recurring losses (*NRILOSSES*) for the purpose of analyses. Finally, firm size is proxied by net annual sales (*SALES*).

<Insert Tables 2 about here>

Table 2 (Panel A) presents descriptive statistics of the relevant variables in the sample. The average cash compensation and total compensation over the five-year period are \$1.309 and \$5.020 million, respectively, and are much higher than the corresponding median values of \$0.959 and \$2.451 million. The average amount of sales in our sample is \$4.605 billion. The mean

[4] Total compensation data for seventeen firms were incomplete and in order to maintain 'balanced' panel data, the number of firms for total compensation analyses is reduced to 418.

[5] The sample has a mean market capitalization of \$6.62 billion, and a median of \$1.26 billion. 54 firms have a market capitalization above \$10 billion, 46 firms with capitalization of \$5-\$10 billion, 69 firms with capitalization of \$2-\$4 billion, 71 firms with capitalization of \$1-\$2 billion and 195 firms have a market capitalization below \$1 billion.

[6] The sample consists of 136 S & P 500 firms, 109 Mid-Cap, and 141 Small-Cap firms. Forty-nine firms did not have S & P classification.

[7] *ExecuComp*'s modified Black-Scholes formula--*ExecComp* values options using an "expected life" equal to 70% of the actual term. In addition, *ExecComp* sets volatilities below the 5th percentile or above the 95th percentile to the 5th and 95th percentile volatilities, respectively; similarly, dividend yields above the 95th percentile are reduced to the 95th percentile.

income from continuing operations of $257.679 million while the mean of nonrecurring items is gains of $8.09 million. The data also reveal that over 50 percent of the total CEO pay, on average, is stock-based while salaries and bonuses make up 31 percent and 17 percent of total compensation, respectively. These results hold for finer partitioning of the sample.

The majority of sample firms reported positive income from continuing operations while 17.5 percent reported net losses from continuing operations. A total of 837 non-recurring items were observed.[8] On average, the sample firms had 1.92 reports that included non-recurring items of which 1.39 reports include non-recurring gains and 0.53 include non-recurring losses. A large number of the sample firms, 207 firms or about 48 percent reported only one non-recurring item during the five year study period. About 29 percent of the sample firms reported non-recurring items twice and 23 percent of the sample firms reported nonrecurring items on three or more annual reports issued during this study period. The largest initial number reported of non-recurring items in a single year was 106 during 1998 followed by 99 in 1999, 93 in 2001, 71 in 2000, and 66 in 2002.

The pair-wise correlation matrix of the variables is reported in Panel B of table 2. The highest correlation, as expected, is between *SALES* and *INBNRI* (0.82). The correlations between *CASHCOMP* and *INBNRI* (0.59), between *SALES* and *CASHCOMP* (0.56), and between *CASHCOMP* and *TOTALCOMP* (0.55) are also very strong and significant. The correlations between *TOTALCOMP* and *INBNRI* (0.41) as well as between *TOTALCOMP and SALES* (0.40) are strong and significant. Data indicate relatively higher correlation between *TOTALCOMP* and *NINRI* (0.042) than between *CASHCOMP* and *NINRI* (0.016).

5. Analyses and results

In this section we present the empirical results of the NRI's impact on CEO compensation. We first analyze the time-series cross-section of CEO compensation and accounting performance data using the Generalized Least Square (GLS) estimation technique. Next, we use Ordinary Least Square (OLS) regression and examine initial reporting of NRI by a cross section of firms in our sample. Finally we use Quantile regression to examine the assumption of uniformity of effects of financial variables on executive compensation and investigate whether these effects differ across the conditional executive compensation distribution.

5.1 GLS estimation results. We used the model presented by Gaver and Gaver (1998) as discussed earlier. Their study included cash compensation as the dependent variable and income before NRI and the non-recurring gains or losses as explanatory variables, hereafter model 1. Year effects were included in all time series regression. In order to examine the effect of a firm's size on CEO compensation, we included net sales as the proxy for size in the model, hereafter model 2.

The results in table 3, indicate CEOs' cash compensations are increased for positive income from continuing operations (*INBNRI*) as well as non-recurring gains (*NRIGAINS*). Losses from continuing operations (*LOSSBNRI*) have significant small adverse effect on the reward system as indicated by the sum of coefficients for *INBNRI* and *NRIGAINS*. Our results also show that cash compensations are not impacted significantly by the existence of non-recurring losses (*NRILOSSES*).

More specifically, for the models with *CASHCOMP* as the dependant variable, coefficients of *INBNRI* and *NRIGAINS* are significant at any conventional level as indicated by the t-statistics of 26.34 and 6.51 for model 1 and 15.17 and 5.56 for model 2, respectively. These results confirm Gaver and Gaver (1998) findings. However, the Wald χ^2 tests of sum coefficients for *INBNRI* and *LOSSBNRI*, at 16.55 for model 1 and 28.63 for model 2 (not reported in the table), suggest the negative impact of losses from continuing operations on CEO cash compensations is statistically significant at any conventional level which is at odds with Gaver and Gaver (1998) results.

Table 3 about here

We included total compensation as the dependant variable in models 1 and 2 and produce a GLS estimate of coefficients. Our results for analysis of CEOs' total compensation are quiet different compared to the results described above for cash compensation in two ways. The results in table 3 show that CEOs are rewarded for positive income from continuing operations (*INBNRI*) as indicated by coefficients' t-statistics of 20.47 and 13.00 in models 1 and 2, respectively. However, non-recurring gains are statistically insignificant in determination of CEOs' total compensation based on *NRIGAINS'* coefficient t-statistics of 1.27 and 0.67, in models 1 and 2, respectively.

Furthermore, CEOs' total compensation, on average, is *not* significantly impacted by losses from continuing operations, *LOSSBNRI*, and is positively impacted by non-recurring losses *NRILOSSES*. As indicated by the Wald χ^2 tests of sum coefficients for *INBNRI* and *LOSSBNRI*, at

[8] The sample included 106 non-recurring items reported in 1998, 154 in 1999, 146 in 2000, 207 in 2001, and 224 in 2002.

0.66 for model 1 and 0.17 for model 2 (not reported in the table).

Sales appeared to be a significant explanatory variable regardless of the measure for CEO compensation. However, the results discussed above appeared robust to inclusion of sales. The Wald χ^2 statistics, reported in table 3, indicate the significance of all variables together in each model.

Our sample firms, on average, reported non-recurring items 1.9 times. The frequency by which 'non-recurring' items are reported may affect their possible influence on CEO's compensation, in general, and stock-based compensation, in particular. To examine this influence and control for such frequency, we included a zero/one independent variable (*NRIOBSDUMM*) to assess the influence of companies reporting more than two NRIs over the study peiod. If a firm reported NRIs more than twice *NRIOBSDUMM* was set at zero, otherwise one. GLS estimates for the models with cash or total compensation as the dependant variable were produced. We repeated the estimation process with *SALES* as the proxy for size.

Table 4 about here

Our results, presented in Table 4, indicate the significance of NRI reporting frequency in all cases at any conventional level as indicated by the *NRIOBSDUMM* coefficient's t-statistics in both models with either cash or total compensation as the dependent variable. These results indicate the more frequently a firm reports NRIs the less influence of such item on CEO compensation. All other results remained essentially the same as those reported in table 3.

To study this issue further, we examined a sub-sample of our data including firms that reported NRI less than two or fewer times over this study period. There are 332 such firms in the sample with cash compensation data and 321 firms with total compensation data available. We replicated the results presented in table 3 above. As indicated by our GLS estimates in table 5, the impact of incomes from continuing operations and NRI gains remains consistent with the results reported in table 3, i.e., CEOs are rewarded for positive results of continuing operations.

Table 5 about here

The influences of continuing operations' losses with respect to cash compensation, based on the Wald χ^2 tests of sum coefficients for *INBNRI* and *LOSSBNRI*, at 3.37 (Prob. > 0.07) significance levels for model 1 and 6.48 (Prob.>0.02) for model 2 (not reported in the table), do not appear to be as significant as those reported in table 3. On the other hand, the impact of continuing operations' losses with respect to total compensation, in model 1, is positive and significant at 0.07 level based on the Wald χ^2 test of sum coefficients for *INBNRI* and *LOSSBNRI*, at 3.44. Such an impact on total compensation in model 2 remained insignificant.

The results, presented in table 5, with respect to NRI losses are at variance with those presented earlier. Unlike findings reported in table 3, controlling for frequency of NRI reporting seems to disclose a positive impact of NRI loss on compensation. This confirms the results in table 4 with respect to the influence of NRI when controlling for frequency of reporting such items. Additionally, the magnitude of NRI losses' coefficients appear to be larger and statistically more significant when date is partitioned to exclude companies that reported NRIs more than once during the study period.

5.2 OLS estimation results. We pursue the 'frequency of NRI reporting' issue by examination of *first* NRI reporting for each firm. This process yields one observation per firm or 435 cross-sectional observations each of which includes NRI. We examined annual report data for three years prior to the study for each firm in order to exclude firms that had reported NRI during such three-year period. Fifty-six firms were excluded as a result of this restriction.

The OLS estimates based on the cross section of 379 firms (375 for total compensation) confirm earlier results with respect to Income from continuing operations. That is, CEOs are rewarded for positive results of continuing operations in both cash and total compensation measures. CEO compensations appear to be adversely affected by losses from continuing operations as indicated by difference between the *INBNRI* and *LOSSBNRI* coefficients, 0.075. In other words, $1 million loss from continuing operations results in a decline of $750 in cash compensation. The direction of the impact of losses from continuing operations is consistent with our results based on GLS estimates with both measures of compensation. The Wald χ^2 tests of sum coefficients for *INBNRI* and *LOSSBNRI* indicate that the impact of losses from continuing operations significantly affect the CEO's total compensation while such effect on cash compensation is not significant. For example, total compensation is on average increased by about $18,229 as a result of $1 million loss from continuing operations.

Table 6 about here

Adjusted R^2 for the OLS regressions, 0.25 and 0.50, indicate that ability of the models' independent variables to explain variations in the cash and total compensation, respectively. The null hypothesis that all explanatory variables (except the constant) are jointly not significantly different from zero is rejected soundly as indicated by F statistics 33.21 for cash compensation model and 94.56 for total compensation.

One pitfall, however, with these results is that the OLS residuals are non-normal and heteroskedastic. In table 6 we report the results of the Shapiro-Wilk test (Shapiro and Wilk, 1965). The Shapiro-Wilk tests indicate the non-normality of the residuals. The Shapiro-Wilk test statistics W are 0.8239 (p-value = 0.0000) in the cash compensation regression and 0.4545 (p-value = 0.0000) in the total compensation regression. These findings provide evidence against the null hypothesis that the residuals are normally distributed. In addition, the Breusch-Pagan tests (Breusch and Pagan, 1979), also reported in table 6, reject the hypothesis that the residuals are homoskedastic. The Breusch-Pagan test statistic is 427.85 (p-value = 0.0000) in the cash compensation regression and 5.65 (p-value = 0.0009) in the total compensation regression.

According to Koenker and Bassett, (1982), one of the key factors that make Quantile regression's ability to characterize the entire conditional distribution so useful and interesting is the presence of heteroskedasticity in the data. When the data are homoskedastic, the set of slope parameters of conditional quantile functions at each point of the distribution will be identical with each other and with the slope parameters of the conditional mean function. In such a case, the quantile regression at any point along the distribution of the CEO compensation reproduces the OLS slope coefficients, and the only difference is the intercepts. However, when the data are heteroskedastic, the set of slope coefficients of the conditional quantile functions will differ from each other as well as from the OLS slope parameters. In such a case, estimating conditional quantiles at various points of the distribution will allow us to trace out different marginal responses of the CEO compensation to changes in the explanatory variables at these points.

5.3 Quantile regression results. The quantile regressions results for model 1 with cash compensation or total compensation as the dependent variable are presented in tables 7 and 8, respectively. We present coefficient estimates and related statistics for the five quantiles, namely, the 10th, 25th, 50th, 75th, and 90th quantiles using simultaneous quantile regression. The t-statistics in parenthesis are obtained using the design matrix bootstrap approach; hence, they are robust to heteroskedasticity and any general dependence between the explanatory variables and the error term. We use 200 replications of the bootstrap process.

The interpretation of quantile regression coefficients is straightforward. In OLS pay-performance regressions, the coefficient of an independent variable represents, other things equal, the impact of a change in *such variable* on expected average, CEO compensation. In the quantile model, instead, the quantile coefficient of an independent variable represents the change, other things equal, in the θth conditional quantile of the CEO compensation distribution due to a change in such variable.

In tables 7 and 8 we report the *pseudo* R^2, a quantile measure of goodness of fit.[9] The *pseudo* R^2 increases from the lower to the higher quantiles, which indicates that the model explains CEO pay for companies in the higher quantiles better than for compensation in the lower quantiles. Significant differences exist between the estimated coefficients for the lower and the upper quantiles.

As shown in table 7, the continuing operations results, *INBNRI* and *LOSSBNRI*, are correlated with CEO cash compensation but not at all quantiles across the distribution. We can not reject the null hypotheses with respect to the significance of NRI explanatory variables in the models as indicated by F-statistics reported in table 7. However, we reject the null hypothsess with respect to the joint significance of independent variables in the model.

Table 7 about here

We examined the significance of continuing operations losses (*LOSSBNRI*) using the Wald χ^2 test. The results indicated that continuing operations losses (*LOSSBNRI*) do not have any significant impact on CEO cash compensation at any quantiles.

Formally, parameter heterogeneity can be examined by means of interquantile tests. Interquantile tests are designed to examine whether the observed differences along the estimated coefficients are statistically significant across quantiles, i.e., whether the position in the compensation distribution differentially affects how results of continuing operations and NRI gains or losses are related to CEO pay. This differentiation across quantiles is important for the analysis and the formulation of policies that may alter compensation patterns.

In the lower part of table 7 we report the results of the parameter heterogeneity tests. The table presents the derived p-value along with the test statistics, which is asymptotically distributed

[9] The statistic, developed by Koenker and Machado (1999), is analogous to the conventional R^2 statistic, and is obtained in a similar manner. Let $\hat{V}\theta$ be the solution to equation (2) and let $\tilde{V}\theta$ be the solution to equation (2) when x_i is restricted to include only the intercept. Then the *pseudo* R^2 for the θth quantile is defined as 1- $\hat{V}\theta / \tilde{V}\theta$. Unlike the conventional R^2, which is a "global" measure of goodness-of-fit over the entire conditional distribution, the *pseudo* R^2 is only a "local" measure of goodness-of-fit at a specific quantile.

as an F-statistics with 4 and 374 degrees of freedom. The tests indicate there are statistically significant differences between the parameter estimates at the 10th quantiles and the parameter estimates at the 50th, 75th, and 90th quantiles. We also observe significant differences between the parameter estimates at the 25th quantiles and the parameter estimates at the 75th and 90th quantiles. Note, however, that differences within the higher quantiles are not significant. Similarly, the differences within the lower quantiles are not significant. This indicates that CEOs whose cash compensations are in the lower quantiles, namely, at or below the 25th quantile, exhibit parameter homogeneity; similarly, CEOs whose cash compensations are in the higher quantiles, namely, at or above the 75th quantile, also exhibit parameter homogeneity. This pattern of parameter heterogeneity between lower and higher quantiles, combined with parameter homogeneity within the lower as well as the higher quantiles, is a strong indication that compensation contract formulation for CEOs in the lower quantiles are different from the those in the higher quantiles.

The results of the quantile regressions with total compensation as the dependent variable are presented in table 8. We report in table 8 the quantile estimates similar to those reported in table 7 above. The results in table 8 indicate that continuing operations are a significant determinant of the CEOs' total compensation across all five quantiles. Furthermore, Wald χ^2 tests indicate that continuing operations losses (*LOSSBNRI*) have a significant negative impact on CEO total compensation at less than 8 percent level for all but the 10th quantile.

Table 8 about here

It should be noted that, as in the case of cash compensation, NRI explanatory variables are individually and jointly insignificant across the entire conditional distribution of total compensation as indicated by coefficient t-statistics and F-statistics with 2 and 370 degrees of freedom reported in table 8. We present in the lower part of table 8 the results of the interquantile tests of heterogeneity. The table contains the derived p-value along with the test statistic, which is asymptotically distributed as an F-statistics with 4 and 370 degrees of freedom. As in the cash compensation case, these tests are based on the bootstrap approach with 200 replications. The results reinforce the findings reported in table 7 and once more provide evidence of only partial heterogeneity of the parameters. Parameter heterogeneity is evident between the lower and higher quantiles. The test of parameter homogeneity between the 10th and the 90th quantile yields a value of the F-statistics of 2.33, which is significant at the 5.5 percent significance level.

The F-statistics between the 50th and the 75th quantiles and between the 75th and 90th quantiles are 0.59 and 0.92, respectively. We cannot reject the hypothesis of parameter homogeneity at any conventional level of significance. The magnitude and significance of the coefficients of income and losses from continuing operations vary across the quantiles. Comparison between the OLS coefficients on *INBNRI* and *LOSSBNRI* and quantile estimates implies that the OLS estimate underestimates the impact of these variables at the 50th, 75th, and 90th quantiles and overestimates it at the 10th and 25th quantiles.

6. Conclusions

The issue performance measure has been heralded in executive compensation literature. In this study we examined the impact of the components of net income on CEO compensation. More specifically, we estimated the compensation model of Gaver and Gaver (1998) to study the impact of income or loss from continuing operations as well as non-recurring gains or losses reported by 435 firms over the period of 1998-2002. We first examined CEO compensation using time-series cross-section data. Based on the GLS estimation technique, we confirmed Gaver and Gaver's findings with respect to CEO's cash compensation. We extended earlier research by including total compensation measure in our pay-performance analyses. Our results were at variance with those based on cash compensation. We also examined the influence of firm size in our analyses. While significant as an explanatory variable, firm size did not significantly change our earlier results.

Our concern about multiple NRI reporting by the same firm during the study period was justified as indicated by the results of estimation after controlling for NRI reporting by each firm. We studied this issue further by examination of cross-sectional data for 379 firms after restricting each firm to one observation that coincided with first instance of NRI reporting in four years or longer. Our OLS result reinforced our earlier findings. However, based on our OLS diagnostic tests, non-normality of residuals and heteroskedasticity appear to be serious problems raising the concern about parameter heterogeneity.

We next estimated the model using quantile regression. In contrast to OLS regression, quantile regression imposes fewer restrictions on the data, is robust to outliers in the data, relaxes the assumption of parameter homogeneity and provides more complete information on the conditional distribution. In a nutshell, the results indicate that there is evidence of parameter heterogeneity between lower and higher quantiles, combined with parameter homogeneity within the lower quantiles as well as within the higher

quantiles. We interpret this evidence as a strong indication that CEOs whose compensation is in the lower quantiles are impacted by the company's profitability at a level that is different from those in the higher quantiles. Thus, empirical analyses of cross-sectional data that do not take into account parameter heterogeneity may result in incorrect specification of the model and misleading inferences.

However, one should not conclude that any differences found in regressions at different quantiles are merely due to heteroskedasticity. As Buchinsky (1998) observes, "...potentially different solutions at distinct quantiles may be interpreted as differences in the response of the dependent variable to changes in the regressors at various points in the conditional distribution of the dependent variable...," implying it is possible to think about models that exhibit a linear relationship between conditional quantiles of a dependent variable and explanatory variables, but the relationship itself depends on the quantile under consideration. In such a case, similar to the heteroskedasticity case, we see that the conditional quantile functions are not necessarily just vertically shifted with respect to each other, and consequently, their estimation can provide a more complete description of the model under consideration than the usual expectation-oriented regression.

Our OLS results while dealing with initial reporting of all companies in our sample may have been limited by our initial sample selection constraints requiring time series data and a CEO tenure of 5 years. Furthermore, inferences from this empirical study may be bounded by the temporal context in which it is embedded. The late 1990s have been a singular time in America's corporate history. The economic outlook of the late 1990s may be fundamentally different from the one facing firms now or in the future. Consequently, future research will be needed to determine to what extent these results can be generalized to periods of different economic prospects. On the whole, however, the findings in this study help provide a better understanding of the nature of the relationship between firm performance and executive compensation, and indicate that the relationship between executive compensation and performance is far more complex and multifaceted than the vast majority of previous studies have described.

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Appendices

Table 1. Sample Selection & Industry Composition

Panel A: Sample Selection

	Number of Firms	CEO-Year
Initial Sample 1998-2002	2,428	9,620
Less: Insufficient time-series data for the study period	1,124	3,100
Less: Company did not report non-recurring item	270	1,350
Less: CEO left position prior to January 2003	90	450
Less: CEO assumed position after January 1998	477	2,385
Less: Omitted due to missing data	32	160
Final Sample	435	2,175

Panel B: Industry Composition

Industries	2-digit SIC	Number of Firms	Percentage
Mining	10, 12, 14	7	1.6
Gas & Oil and Petroleum Refining	13, 29	19	4.4
Construction	15-17	6	1.4
Food	1, 20-21, 54, 58	29	6.7
Clothing & Footwear	22-23, 31, 56	14	3.2
Forest Product, Paper	24, 26	10	2.3
Furniture	25, 57	5	1.1
Printing & Publishing	27	12	2.7
Chemicals	28	31	7.1
Rubber, Plastic, Stone, Clay, & Glass	30, 32	8	1.8
Primary & Fabricated Metal	33-34	19	4.4
Industrial Machinery	35	19	4.4
Electrical equipment	36	39	9.0
Transportation Equipment	37	12	2.7
Instruments	38	13	3.0
Toy Manufacturing	39	2	0.5
Transportation	40, 42-47	17	3.9
Telecommunication	48	13	3.0
Utilities	49	35	8.0
Wholesale Trade	50-51, 99	16	3.7
Retail trade	52-53, 55, 59	13	3.0
Banks	60	22	5.1
Insurance, Other Financial services	61-64, 67	29	6.7
Services	70-79	31	7.1
Healthcare & Professional Services	80, 82, 83, 87	14	3.2

Table 2. Descriptive Statistics, and Correlations

Panel A: Descriptive Statistics

Variables	Mean	Std. Dev.	25th Percentile	Median	75th Percentile	Skewness	Kurtosis
CASHCOMP	1.30875	1.36073	0.58260	0.95881	1.62159	5.20	47.82
TOTALCOMP	5.02235	10.52676	1.22075	2.45067	5.31618	10.60	166.12
SALES	4605.08	12140.73	452.53	1222.24	3459.90	8.39	105.02
INBNRI	257.679	1071.884	10.68	51.92	187.61	8.02	94.85
NINRI	8.08964	256.292	0.00	0.00	0.641	-8.93	399.55
SALARY%	31.36	24.72	13.25	24.34	41.72	1.24	3.88
BONUS%	16.60	15.21	2.97	13.91	25.45	0.99	3.88
OTHER%	1.22	4.22	0.00	0.00	0.43	6.80	64.18
STOCK%	50.82	28.52	30.27	55.71	73.45	-0.40	2.06

Panel B: Pair-wise Correlations

Variables	CASHCOMP	TOTALCOMP	SALES	INBNRI	NINRI
CASHCOMP	1.0000				
TOTALCOMP	0.5517 (0.0000)	1.0000			
SALES	0.5637 (0.0000)	0.3995 (0.0000)	1.0000		
INBNRI	0.5913 (0.0000)	0.4082 (0.0000)	0.8206 (0.0000)	1.0000	
NINRI	0.0160 (0.4548)	0.0417 (0.0531)	-0.0650 (0.0024)	-0.0909 (0.0000)	1.0000

Notes: All data are from Standard and Poor's *ExecuComp* database. *CASHCOMP* is cash compensation, in millions of dollars, defined as the sum of salary and bonus. *TOTALCOMP* is cash and non-cash compensation, in millions of dollars. Non-cash compensation includes long-term incentive payouts, the value of restricted stock grants, the value of stock option grants and any other compensation item for the year. *TOTALCOMP* pay includes stock grants (valued at the grant-date market price) and stock options (valued using *ExecuComp*'s modified Black-Scholes formula -- *ExecComp* values options using an "expected life" equal to 70% of the actual term. In addition, *ExecComp* sets volatilities below the 5th percentile or above the 95th percentile to the 5th and 95th percentile, respectively; similarly, dividend yields above the 95th percentile are reduced to the 95th percentile.) *SALES* is net annual sales, in millions of dollars. *INBNRI* is income before extraordinary items and discontinued operations, in millions of dollars. *LOSSBNRI* is income before extraordinary items and discontinued operations when INBNRI is negative, zero otherwise. *NINRI* is total non-recurring gains or losses, in millions of dollars. *SALARY%*, *BONUS%*, *OTHER%* and *STOCK%* are the salary, bonus, other and stock-based compensations as a percentage of total compensation. In a normal distribution, skewness is zero, and excess kurtosis is 3. Correlation coefficients' p-values are in parenthesis beneath the estimated correlation coefficients.

Table 3. The Relationship between CEO Compensation and Non-recurring Items

Generalized Least Square Estimates: Cross-Section Time-Series Panel Data

$$COMP_{it} = \alpha + \beta_1 INBNRI_{it} + \beta_2 LOSSBNRI_{it} + \lambda_1 NRIGAINS_{it} + \lambda_2 NRILOSSES_{it} + \varepsilon_{it} \quad \text{(Model 1)}$$

$$COMP_{it} = \alpha + \beta_0 SALES_{it} + \beta_1 INBNRI_{it} + \beta_2 LOSSBNRI_{it} + \lambda_1 NRIGAINS_{it} + \lambda_2 NRILOSSES_{it} + \varepsilon_{it} \quad \text{(Model 2)}$$

Dependent Variable/ Independent Variables	*CASHCOMP*$_{it}$		*TOTALCOMP*$_{it}$	
	Model 1	Model 2	Model 1	Model 2
Constant	1191.92	1146.482	3213.304	3183.469
	(68.01)	(63.33)	(36.45)	(31.97)
SALES$_{it}$	-	0.025	-	0.146
		(8.78)		(7.72)
INBNRI$_{it}$	0.790	0.553	4.024	2.994
	(26.34)	(15.17)	(20.47)	(13.00)
LOSSBNRI$_{it}$	-0.640	-0.356	-4.254	-2.871
	(-12.67)	(-6.08)	(-11.54)	(-6.88)
NRIGAINS$_{it}$	0.322	0.306	0.671	0.169
	(6.51)	(5.56)	(1.58)	(0.39)
NRILOSSES$_{it}$	0.092	-0.109	-0.636	-0.578
	(1.08)	(1.14)	(-1.01)	(-0.99)
Wald χ^2	1250.63	1173.78	505.55	598.02
p-value	0.0000	0.0000	0.0000	0.0000
Number. of Observations	2175	2175	2090	2090
Number of Panels	435	435	418	418

Notes. *SALES* is net annual sales, *INBNRI* is income before extraordinary items and discontinued operations, in millions of dollars. *LOSSBNRI* is income before extraordinary items and discontinued operations when INBNRI is negative, zero otherwise. *NRIGAINS* is extraordinary items and discontinued operations when *NINRI* is positive (*NINRI* is total non-recurring gains or losses, in millions of dollars), zero otherwise. *NRILOSSES* is extraordinary items and discontinued operations when *NINRI* is negative, zero otherwise. Year effects (in the form of yearly dummy variables) are included in all regressions. z-statistics are in parenthesis beneath the estimated coefficients.

Table 4. The Relationship between CEO Compensation and Non-recurring Items

Generalized Least Square Estimates: Cross-Section Time-Series Panel Data

$$COMP_{it} = \alpha + \beta_1 INBNRI_{it} + \beta_2 LOSSBNRI_{it} + \lambda_1 NRIGAINS_{it} + \lambda_2 NRILOSSES_{it} + \delta NRIOBS_i + \varepsilon_{it} \quad \text{(Model 3)}$$

$$COMP_{it} = \alpha + \beta_0 SALES_{it} + \beta_1 INBNRI_{it} + \beta_2 LOSSBNRI_{it} + \lambda_1 NRIGAINS_{it} + \lambda_2 NRILOSSES_{it} + \delta NRIOBS_i + \varepsilon_{it} \quad \text{(Model 4)}$$

Dependent Variable/ Independent Variables	*CASHCOMP$_{it}$*		*TOTALCOMP$_{it}$*	
	Model 3	Model 4	Model 3	Model 4
Constant	1302.045	1067.137	3898.721	3858.522
	(40.84)	(34.04)	(22.01)	(20.94)
SALES$_{it}$	-	0.024	-	0.122
		(8.01)		(6.33)
INBNRI$_{it}$	0.781	0.562	3.942	2.998
	(24.62)	(15.39)	(19.87)	(12.81)
LOSSBNRI$_{it}$	-0.639	-0.366	-4.259	-2.974
	(-12.31)	(-6.19)	(-10.81)	(-6.87)
NRIGAINS$_{it}$	0.309	0.283	0.519	0.047
	(6.20)	(5.09)	(1.19)	(0.11)
NRILOSSES$_{it}$	0.122	0.113	-0.929	-0.875
	(1.35)	(1.27)	(-1.37)	(-1.40)
NRIOBSDUMM$_i$	-144.595	-95.172	-1092.051	-837.880
	(-4.36)	(-2.94)	(-5.84)	(-4.62)
Wald χ^2	1175.90	1171.09	528.89	593.89
p-value	0.0000	0.0000	0.0000	0.0000
Number. of Observations	2175	2175	2090	2090
Number of Panels	435	435	418	418

Notes. *SALES* is net annual sales, *INBNRI* is income before extraordinary items and discontinued operations, in millions of dollars. *LOSSBNRI* is income before extraordinary items and discontinued operations when INBNRI is negative, zero otherwise. *NRIGAINS* is extraordinary items and discontinued operations when *NINRI* is positive (*NINRI* is total non-recurring gains or losses, in millions of dollars), zero otherwise. *NRILOSSES* is extraordinary items and discontinued operations when *NINRI* is negative, zero otherwise. *NRIOBSDUMM* is zero/one dummy variable where zero designates firms with more than 2 non-recurring item in the series. All other variables are defined as in Table 2. Year effects (in the form of yearly dummy variables) are included in all regressions. z-statistics are in parenthesis beneath the estimated coefficients.

Table 5. The Relationship between CEO Compensation and Non-recurring Items

Generalized Least Square Estimates: Cross-Section Time-Series Panel Data
(Firms with one or two non-recurring item over the study Period)

$$COMP_{it} = \alpha + \beta_1 INBNRI_{it} + \beta_2 LOSSBNRI_{it} + \lambda_1 NRIGAINS_{it} + \lambda_2 NRILOSSES_{it} + \varepsilon_{it} \quad \text{(Model 1)}$$

$$COMP_{it} = \alpha + \beta_0 SALES_{it} + \beta_1 INBNRI_{it} + \beta_2 LOSSBNRI_{it} + \lambda_1 NRIGAINS_{it} + \lambda_2 NRILOSSES_{it} + \varepsilon_{it} \quad \text{(Model 2)}$$

Dependent Variable/ Independent Variables	*CASHCOMP*$_{it}$		*TOTALCOMP*$_{it}$	
	Model 1	Model 2	Model 1	Model 2
Constant	1065.131	1029.016	2621.285	2547.961
	(61.32)	(58.25)	(26.41)	(26.42)
SALES$_{it}$	-	0.025	-	0.159
		(5.64)		(6.79)
INBNRI$_{it}$	1.190	1.042	4.294	2.890
	(28.68)	(22.84)	(19.45)	(10.13)
LOSSBNRI$_{it}$	-1.108	-0.923	-5.024	-3.248
	(-17.11)	(-13.06)	(-10.74)	(-6.36)
NRIGAINS$_{it}$	0.297	0.261	0.639	0.298
	(3.52)	(2.88)	(1.19)	(0.49)
NRILOSSES$_{it}$	-1.412	-1.343	-11.301	-8.976
	(-5.89)	(-5.95)	(-5.89)	(-4.75)
Wald χ^2	1265.52	1434.50	512.42	517.86
p-value	0.0000	0.0000	0.0000	0.0000
Number. of Observations	1660	1660	1605	1605
Number of Panels	332	332	321	321

Notes. *SALES* is net annual sales, *INBNRI* is income before extraordinary items and discontinued operations, in millions of dollars. *LOSSBNRI* is income before extraordinary items and discontinued operations when INBNRI is negative, zero otherwise. *NRIGAINS* is extraordinary items and discontinued operations when *NINRI* is positive (*NINRI* is total non-recurring gains or losses, in millions of dollars), zero otherwise. *NRILOSSES* is extraordinary items and discontinued operations when *NINRI* is negative, zero otherwise. Year effects (in the form of yearly dummy variables) are included in all regressions. z-statistics are in parenthesis beneath the estimated coefficients.

Table 6. The Relationship between CEO Compensation and Non-recurring Items

Ordinary Least Square Estimates: Cross-Section of Firms
(First non-recurring observations 1998-2002)

$$COMP_i = \alpha + \beta_1 INBNRI_i + \beta_2 LOSSBNRI_i + \lambda_1 NRIGAINS_i + \lambda_2 NRILOSSES_i + \varepsilon_i$$

Dependent Variable / Independent Variables	*CASHCOMP$_i$*	*TOTALCOMP$_i$*
Constant	1027.642	3662.532
	(21.28)	(9.62)
INBNRI$_i$	0.788	3.930
	(10.70)	(6.81)
LOSSBNRI$_i$	-0.713	-22.159
	(-4.69)	(-18.59)
NRIGAINS$_i$	-0.041	-2.985
	(-0.12)	(-1.14)
NRILOSSES$_i$	-0.289	-0.822
	(-1.03)	(-0.37)
Adjusted R^2	0.254	0.500
F test	33.21	94.56
p-value	0.0000	0.0000
Shapiro-Wilk test	0.8239	0.4545
p-value	0.0000	0.0000
Breusch-Pagan test	427.85	5.65
p-value	0.0000	0.0009
Number. of Observations	379	375

Notes. *SALES* is net annual sales, *INBNRI* is income before extraordinary items and discontinued operations, in millions of dollars. *LOSSBNRI* is income before extraordinary items and discontinued operations when INBNRI is negative, zero otherwise. *NRIGAINS* is extraordinary items and discontinued operations when *NINRI* is positive (*NINRI* is total non-recurring gains or losses, in millions of dollars), zero otherwise. *NRILOSSES* is extraordinary items and discontinued operations when *NINRI* is negative, zero otherwise. t-statistics are in parenthesis beneath the estimated coefficients. F test is a test of the null hypothesis that all explanatory variables (except the constant) are jointly not significantly different from zero. No other non-recurring item reported in 3 or more previous annual reports.

Table 7. The Relationship between CEO Compensation and Non-recurring Items Quantile Regressionn (First non-recurring observations 1998-2002)

$$COMP_i = \alpha + \beta_1 INBNRI_i + \beta_2 LOSSBNRI_i + \lambda_1 NRIGAINS_i + \lambda_2 NRILOSSES_i + \varepsilon_i$$

Dependent Variable/ Independent Variables:	*CASHCOMP*$_i$				
	0.10 Quantile	0.25 Quantile	0.50 Quantile	0.75 Quantile	0.90 Quantile
Constant	356.881	516.089	756.045	1177.738	1755.156
	(14.42)	(20.12)	(12.86)	(11.12)	(12.09)
INBNRI$_i$	0.227	0.552	1.286	1.794	2.071
	(0.96)	(1.75)	(2.88)	(4.02)	(4.76)
LOSSBNRI$_i$	0.137	-0.378	-1.328	-1.756	-1.970
	(0.28)	(-0.65)	(-1.70)	(-1.90)	(-2.07)
NRIGAINS$_i$	0.490	0.240	-0.383	-0.673	0.914
	(1.94)	(0.58)	(-0.60)	(-0.56)	(0.57)
NRILOSSES$_i$	-0.686	-0.440	0.072	-0.134	0.140
	(-1.23)	(-0.51)	(0.10)	(-0.21)	(0.21)
Pseudo R^2	0.045	0.085	0.146	0.190	0.223
Test of Significance NRI Variables: F-statistic	1.67	0.32	0.24	0.23	0.23
p-value	0.1888	0.7288	0.7869	0.7965	0.7960
Test of Joint Significance of Coefficients: F-statistic	2.60	3.24	2.59	4.33	7.02
p-value	0.0361	0.0124	0.0367	0.0020	0.0000
Interquantile Tests:					
0.10 Quantile		0.55	2.53	3.46	5.01
p-value		0.6998	0.0405	0.0086	0.0006
0.25 Quantile			1.23	2.25	3.61
p-value			0.2958	0.0631	0.0067
0.50 Quantile				0.61	1.13
p-value				0.6583	0.3401
0.75 Quantile					0.46
p-value					0.7664
Number of Observations	379	379	379	379	379

Notes. *SALES* is net annual sales, *INBNRI* is income before extraordinary items and discontinued operations, in millions of dollars. *LOSSBNRI* is income before extraordinary items and discontinued operations when INBNRI is negative, zero otherwise. *NRIGAINS* is extraordinary items and discontinued operations when *NINRI* is positive (*NINRI* is total non-recurring gains or losses, in millions of dollars), zero otherwise. *NRILOSSES* is extraordinary items and discontinued operations when *NINRI* is negative, zero otherwise. t-statistics are in parenthesis beneath the estimated coefficients. No other non-recurring item reported in 4 previous annual reports.

Table 8. The Relationship between CEO Compensation and Non-recurring Items Quantile Regressionn (First non-recurring observations 1998-2002)

$$COMP_i = \alpha + \beta_1 INBNRI_i + \beta_2 LOSSBNRI_i + \lambda_1 NRIGAINS_i + \lambda_2 NRILOSSES_i + \varepsilon_i$$

Dependent Variable/ Independent Variables:	*TOTALCOMP*$_i$				
	0.10 Quantile	0.25 Quantile	0.50 Quantile	0.75 Quantile	0.90 Quantile
Constant	464.832	877.281	1673.648	3761.645	6870.918
	(6.45)	(7.58)	(10.20)	(7.42)	(6.22)
INBNRI$_i$	2.329	2.477	5.543	8.643	14.310
	(3.62)	(2.57)	(2.90)	(2.96)	(3.83)
LOSSBNRI$_i$	-5.550	-21.193	-24.152	-26.809	-37.303
	(-0.93)	(-2.43)	(-2.93)	(-2.18)	(-2.41)
NRIGAINS$_i$	-2.480	-0.808	-2.554	-5.311	-8.260
	(-1.38)	(-0.39)	(-0.97)	(-1.33)	(-2.26)
NRILOSSES$_i$	-1.043	-0.812	-0.677	-2.338	-0.764
	(-0.24)	(-0.13)	(-0.03)	(-0.09)	(-0.02)
Pseudo R^2	0.075	0.110	0.186	0.247	0.297
Test of Significance NRI Variables: F-statistic	1.07	0.08	0.50	0.84	2.31
p-value	0.3441	0.9188	0.6052	0.4319	0.1009
Test of Joint Significance of Coefficients: F-statistic	6.08	3.90	4.56	2.71	3.49
p-value	0.0001	0.0041	0.0013	0.0030	0.0082
Interquantile Tests:					
0.10 Quantile		2.03	2.46	1.34	2.33
P-value		0.0889	0.0448	0.2536	0.0554
0.25 Quantile			1.18	1.55	2.38
P-value			0.3207	0.1881	0.0514
0.50 Quantile				0.59	1.50
P-value				0.6694	0.2008
0.75 Quantile					0.92
P-value					0.4545
Number of Observations	375	375	375	375	375

Notes. *SALES* is net annual sales, *INBNRI* is income before extraordinary items and discontinued operations, in millions of dollars. *LOSSBNRI* is income before extraordinary items and discontinued operations when INBNRI is negative, zero otherwise. *NRIGAINS* is extraordinary items and discontinued operations when *NINRI* is positive (*NINRI* is total non-recurring gains or losses, in millions of dollars), zero otherwise. *NRILOSSES* is extraordinary items and discontinued operations when *NINRI* is negative, zero otherwise. All other variables are defined as in Table 2 and t-statistics are in parenthesis beneath the estimated coefficients. No other non-recurring item reported in 4 previous annual reports.