CEO Compensation, Director Compensation, and Firm Performance:

Evidence of Cronyism?

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Abstract

We model CEO and director compensation using firm characteristics, CEO characteristics, and governance variables. After controlling for monitoring proxies, we find a significant positive relationship between CEO and director compensation. We hypothesize that this relationship could be due to unobserved firm complexity (omitted variables), and/or to excess compensation of directors and managers. We also find evidence that excess compensation (both director and CEO) is associated with firm underperformance. We therefore conclude that the evidence is consistent with excessive compensation due to mutual back scratching or cronyism. The evidence suggests that excessive compensation has an effect on firm performance that is independent of the poor governance variables discussed by previous studies.

I. Introduction

The Enron debacle and the Global Crossing bankruptcy have renewed concerns about the effectiveness of board monitoring and the high compensations that directors' receive (see Abelson, *The New York Times*, December 16, 2001, and Douglas et al., *Los Angeles Times*, February 24, 2002). For example, the 2001 compensation for each Enron director is reported by *The New York Times* as $380,619 in cash and stock, the seventh highest director remuneration in the United States. Most observers agree that the high compensation of Enron's directors may have compromised their objectivity in monitoring management on behalf of shareholders. We investigate whether excessive director compensation is linked to a weak corporate governance structure, excessive CEO compensation, and poor firm performance.

The general purpose of the board of directors is to advise and monitor top management, to establish executive compensation, and to otherwise protect the interests of shareholders. The existing literature examines corporate governance problems that inhibit the effectiveness of the board of directors.[1] Jensen (1993) argues that boards of directors often fail to effectively monitor the firm's management. The board may not effectively monitor executive performance because board culture inhibits constructive criticism, and because of informational asymmetry problems that exist between management and the board.

We hypothesize that the problems in board culture formulated by Jensen (1993) are also linked to director compensation. Because well-compensated directors may be less likely to "rock the boat," excess director compensation may be associated with a culture that does not allow for

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[1]See Jensen and Murphy (1990) for a seminal paper on the structure of executive compensation and firm performance. For a survey of executive compensation and incentives, see Core, Guay, and Larcker (2001). Hallock (1997) finds that interlocking boards of directors are associated with higher managerial compensation, while Rosenstein and Wyatt (1990, 1997) consider the impact of external and internal appointments to the board on firm performance. For a survey on issues related to boards of directors, see Hermalin and Weisbach (2000).

constructive criticism. Jensen (1993, p. 863) may be referring to a similar board culture when he discusses, "the great emphasis on politeness and courtesy at the expense of truth and frankness in boardrooms." In keeping with the terminology used recently by the popular press, we refer to this phenomenon of "mutual back scratching" associated with excessive compensation and weak monitoring as cronyism. Empirically, we test to see if excessive compensation for both CEOs and directors is associated with weaker firm performance.

To test this hypothesis, we develop empirical specifications for the compensation of both directors and CEOs. As in Linn and Park (2005), we find that director compensation is related to variables that proxy for the need for monitoring by directors. After controlling for firm characteristics, CEO characteristics, and other governance factors, we find that director and CEO compensation are strongly positively related. This positive relationship could be due to unobserved firm complexity which requires higher levels of skill or effort by the CEO and directors. In this case, we expect a weakly positive relation between excess compensation and firm performance. Alternatively, the positive relationship between CEO and director excess compensation could be due to the hypothesized board culture problems. In other words, these excessive compensations may be symptomatic of an environment of cronyism where board members and management do not protect shareholder interests. In this case, we expect a negative relationship between firm performance and the excess compensation of CEOs and directors. We use a fixed effects model to further control for unobserved firm characteristics, and we find that firm performance, as measured by future excess returns, is negatively related to the excess compensation of directors. These results are consistent with the cronyism hypothesis.

The organization of our paper is as follows: Section II presents the motivation and hypotheses of this study. Section III discusses the data and methodology. Section IV examines

the determinants of compensation for both directors and CEOs. It also examines the impact of director compensation on CEO compensation while controlling for firm characteristics, CEO characteristics, and other governance variables. Section V examines the relationship of excess compensation of CEOs and directors upon firm performance. Section VI concludes.

II. Hypotheses

We examine the relationship between the compensation levels of the CEO and the board members, controlling for firm, CEO and governance characteristics. CEO and director compensation levels may be related for several reasons. For instance, a negative relation could exist if directors' effort substitutes for CEO effort (see, for example, Berry, Fields, and Wilkins, 2005). Alternatively, a positive relation between CEO and director compensations could exist if the firm is large and complex, and this complexity affects the skill and effort required by both parties. A positive relation could also reflect cronyism, where managers and directors put their own interests ahead of the interests of shareholders.

In order to distinguish between these alternative explanations, we model CEO and director compensation and find a significant positive relation between excess director compensation and CEO compensation. We then regress the future firm performance on CEO and director excess compensation. If cronyism were the primary reason for the positive relationship between CEO and director compensation, we would expect a negative relationship between future firm performance and excess CEO and director compensations. This negative association between excess compensation and future firm performance would reflect the suboptimal performance of a management that puts self-interest ahead of shareholder interests. In contrast, if firm risk and complexity were the primary reasons for a positive relationship

between CEO and director compensation, we would expect a weakly positive impact on firm performance.[2] In the next section we discuss our methodology and the variables we use to proxy for firm, CEO, and governance characteristics.

III. Data and Methodology

A large body of literature addresses the determinants of the level and structure of CEO compensation (see Murphy, 1999, for an extensive review). Director compensation has started to receive attention only recently.[3] In order to estimate excess director compensation, we first estimate regressions where the dependent variables are the cash and total compensation of board members and the CEO. The independent variables in these regressions include firm, CEO, and governance characteristics that have been used in previous studies (see, for example, Core et al., 1999; Finkelstein and Hambrick, 1989; Mehran, 1995; and Palia, 2001). Also included are industry dummies in the pooled regressions, and year dummies in the pooled and fixed-effects regressions. When the dependent variable is CEO compensation, we include the excess director total compensation (i.e., the residual from the Director Compensation equation) as an additional independent variable.

We expect director compensation to be positively related to the need for firm monitoring and the difficulty of the directors' tasks, which we assume are related to firm complexity and

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[2] Another possible explanation for high compensation for some directors is that they are being compensated for greater liability. However, as Black, Cheffins, and Klausner (2003) point out, even the most incompetent directors in the U.S. realistically face no out-of-pocket liability due to a combination of indemnification, insurance, procedural rules, and settlement incentives.

[3] For example, Adams (2000) examines director meetings and compensation, and Becher, Campbell, and Frye (2003) study outside director compensation for banks. As in Fich and Shivdasani (2005a), Becher et al. find that increasing equity-based compensation for directors has positive incentive effects. Perry (2000) shows that increasing director equity-based compensation also positively impacts the probability of CEO turnover following poor performance. Ryan and Wiggins (2004) find that independent directors award directors more incentive-based pay. Other papers which examine the levels of director compensation are Conyon (1997), and Bryan, Hwang, Klein, and Lillien (2000), and Linn and Park (2005).

risk. Therefore, similar to CEO compensation, proxies for firm complexity such as size, R&D, and volatility of cash flows should play an important role in determining the level of director compensation. Because CEO characteristics may impact the type or degree of required board monitoring, these characteristics may also be associated with director compensation. Finally, director compensation may also be associated with other characteristics of the governance structure such as whether the CEO also serves as the chairman of the board. We employ a similar log-linear model of compensation for both CEOs and directors. The firm characteristics included in our regressions are lagged one year so as to reduce potential endogeneity. The Black-Scholes volatility is our only non-lagged firm characteristic. Replacing concurrent volatility with lagged volatility significantly reduces the amount of available data because we use a short panel; however, it does not otherwise impact our results. Table I describes the dependent (compensation) and independent variables.

We then run regressions in which the dependent variables are measures of future firm performance. The independent variables include either excess compensation for CEOs and directors, or the proportion of CEO compensation explained by director pay and vice versa. In all cases, we control for all the other variables used in the compensation regressions. As we discuss in detail in Section V, we use the estimates from these regressions to examine whether the positive relationship between the levels of director and CEO compensation is due to cronyism or firm complexity. We employ the single-factor market model and the three-factor Fama-French model to generate two alternative measures of future firm performance. That is, for each model, we estimate the intercept and beta coefficients of the factors for each firm using the 200 trading days prior to the end of the fiscal year. We then calculate a holding period excess return as the difference between the actual holding period return and the predicted return

as given by either the single or three-factor model over the following fiscal year. We prefer this measure of performance to average Q in the year of compensation (as used by Mehran, 1995, among others) because Q and the compensation of the manager are directly related to the firm's recent equity returns.[4]

We use data from Standard and Poor's Execucomp and COMPUSTAT data sets and hand-collected data. The Execucomp data set contains a panel of compensation data for senior executives and directors from 1992 to 2001. We match this data with firm accounting and market characteristics from COMPUSTAT. As many of the Execucomp firms do not have COMPUSTAT data available, and because some fields are missing in the Execucomp data, our final sample varies from 1,163 to 1,441 firms. To check that our results are not driven by other omitted governance characteristics, we hand collect some additional data including the number of directors and the number of internal directors from Standard and Poor's *Directory of Corporate Executives and Directors* for 1997. Additionally, for a subsample of 237 observations, we hand collect from individual proxy statements the number of insider, gray, busy, and interlocking directors, and data on CEO, director, and blockholder equity ownership.

Table II presents summary statistics on all our variables, and Table III presents correlations between director and CEO compensation variables. This table documents the strong positive correlation between the compensation of CEOs and directors. While some of the positive correlation between CEO and director compensation is driven by stock and option values, there also exists a positive correlation (0.472) between the annual director fee and CEO total compensation.

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[4] See Palia (2001) for an analysis which takes this endogeneity into account. As future returns are typically not thought to cause past compensation, using future excess returns allows us greater confidence when we interpret the causality from this regression as going from compensation to performance.

At each stage of the analysis we provide results for both pooled regressions and fixed effects regressions.[5] The pooled regressions explain the variation both between firms and across time, whereas the fixed effects regressions explain the variation across time while controlling for any firm-specific effects. For example, if a particular firm required unique management skills, the firm-specific intercept in the fixed effect regression would capture the additional compensation needed to employ a CEO with such skills. We test for and find heteroskedasticity, and thus report White heteroskedastic-consistent t-statistics in the regressions. Moreover, we also allow clustering for the errors within firms in the pooled regressions (see Rogers, 1983, or Woolridge, 2002).

IV. Director and CEO Compensation

A. Director Compensation

We begin by empirically modeling director compensation. We expect director compensation to be positively related to the need for firm monitoring and the difficulty of the directors' tasks. The literature (Bryan et al., 2000; and Linn and Park, 2005) proxies for the need for monitoring and the difficulty of directors' tasks using firm size, intangible assets as measured by R&D expenses, and firm volatility. In Table IV we present the parameter estimates of the director cash and total compensation regressions. Our results indicate that director total compensation is positively associated with the above variables. Additionally, director total compensation is cross-sectionally negatively related to our measure for tangible assets in place. Again, this suggests that director compensation reflects the need for monitoring.

We examine two possible hypotheses regarding the firm's leverage and the firm's need for monitoring. First, debt may substitute as a monitoring device (see Jensen, 1986; Williamson,

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[5] A Hausman test is able to reject the random effects model.

1988). Alternatively, increased debt may indicate that the firm may require more monitoring because its equity is eroding. Consistent with the second hypothesis, we find that director cash compensation is positively related to leverage in the cross-sectional regressions. In contrast, Bryan et al. (2000) find a significant negative relation between director compensation and leverage.

We expect that the need for monitoring by directors should be negatively related to the fraction of the firm's equity that the CEO owns. CEOs who own a larger fraction of the firm have interests that are more aligned with shareholders and therefore may require less monitoring. Consistent with this notion, and with Bryan et al. (2000), we find that director cash and total compensation are negatively related to the percentage of equity owned by the CEO.

We expect that a CEO who is also the Chairman of the board is more likely to be entrenched. Firms with entrenched CEOs need more monitoring, but an entrenched CEO may have greater control over the board and therefore reduce the efficacy of directors' monitoring. For instance, Callahan, Millar, and Schulman (2003) find that firm performance is positively associated with the involvement of management in the selection of board members, but is negatively associated with the CEO also being the Chairman of the Board of Directors. We find that if the CEO is Chair, directors receive larger total compensation. This larger compensation may also reflect an environment of weak governance (cronyism). In contrast, Conyon (1997) finds no significant relation between whether the CEO is Chair and director compensation using British data.

We further consider the number of board meetings. As directors are paid a per meeting fee, the number of board meetings enters directly into the cash and total director compensation computation. Thus, we expect a strong positive relation between the cash and total

compensation of the directors and the number of meetings. Indeed, we do find a positive relationship between the cash and total compensation of the directors and the number of meetings. We also find that both the number of directors and the percentage of inside directors are significantly negatively related to director cash and total compensation. These results are not formally reported in the tables as they reduce our sample size and do not impact our other results.

Overall, this empirical specification produces results which are consistent with our expectations that director compensation might depend on the required level of monitoring. We next calculate the residuals from the director total compensation regression and examine whether they explain part of CEO compensation beyond what firm, CEO, or governance characteristics can explain.

B. The Impact of Director Compensation on CEO Compensation

In Tables V and VI we present the parameter estimates of the CEO cash and total compensation regressions. The first columns in these tables provide the estimates of a pooled regression with firm, CEO, and governance characteristics. Column three provides the corresponding estimates from a fixed effects model. Since the results we obtain concerning the relationship between CEO compensation and firm, CEO and governance characteristics are similar to those found by Agrawal and Nagarajan (1990), Rosenstein and Wyatt (1990), Byrd and Hickman (1992), Hallock (1997), Core et al. (1999) and Palia (2001), we focus on examining the impact of director compensation on the CEO compensation.

The second and fourth columns of Tables V and VI report the results of pooled and fixed effects regressions when we include the residual from the director total compensation

regression as an additional independent variable.[6] The estimated coefficients for the excess

director compensation variable should indicate the existence of a significant relationship between

the compensation of the CEO and the directors, after controlling for other factors. We do not

interpret this relationship as causal, but rather as a conditional correlation between these

variables. Again, this correlation may either be consistent with the cronyism hypothesis or result

from omitted characteristics of performance and/or firm complexity. We attempt to distinguish

between these alternatives in the following section.

In all the regressions, we find a significant positive relation between CEO compensation

and director compensation after controlling for other variables. The coefficients on excess

director compensation in Table VI vary from 0.216 in the fixed effects regression to 0.306 in the

pooled regression. As both compensation variables are in logs, this coefficient can be interpreted

as an elasticity. Thus, the fixed effects regression indicates that a 10% increase in director total

compensation is associated with an increase of 2.1% in CEO total compensation. Using average

director compensation levels as given in Table II, a 10% increase in director compensation

would correspond to an increase in CEO total compensation of approximately $80,000 on

average. As we discuss below, this significant positive relationship is robust to the inclusion of a

variety of other governance variables to the compensations regressions.[7]

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[6] We also run similar regressions using the lagged director excess compensation rather than contemporaneous excess
compensation. Both the sign and statistical significance of the relationship between CEO and director
compensations holds for this specification.

[7] We also test whether excessive CEO compensation leads to excessive director compensation, or vice versa. Using
Granger causality tests, we find significant coefficients in both directions. These coefficients remain significant
after correcting for fixed effects as well as all the other control variables. With lags, fixed effects, and other control
variables, the estimated coefficient for the impact of lagged CEO compensation on director compensation is 0.058,
and estimated coefficient for the impact of lagged director compensation on CEO compensation is 0.067, and both
of these coefficients are significant at the 5% level. We also examine whether changes in the compensation of one
party cause changes in the compensation of the other. As this first differencing induces significant negative serial
correlation, and as the Granger regressions include a lagged dependent variable, we use an instrumental variable

C. Robustness Tests

A number of papers have addressed measures related to the quality of governance other than the variables we use in our study. These include the number of insider, gray, busy, and interlocking directors, and the equity ownership of the CEO, director, and other blockholders.[8] One possibility is that excess pay for directors and poor governance variables are not positively associated because pay and perks associate with poor governance structures may be substitutes in equilibrium. That is, some directors may receive perks to compensate them for lower levels of pay. In this case, boards with mostly gray and busy directors would be paid less than those with mostly independent directors. Thus, the absence of these additional director variables from the regressions in Table IV could bias our results towards finding a governance problem which does not exist. Additionally, we are interested in determining whether the excess compensation of directors and the relationship between director and CEO compensation are really indicative of an independent governance factor. A possible alternative is that the other measures of poor governance quality would completely capture the relationships we observe.

In order to further examine these issues, we hand collect proxy data for the firm/years with very high and very low residuals (defined as more than 1.5 standard deviations from zero) in the pooled director compensation regression (Table IV, column three). This provides us with a sample of 237 firm years. Interestingly we find that no firm appears only once in this sample -- if a particular firm had very high or very low director compensation, it had such compensation

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approach, where the lagged exogenous variables are used as instruments. We find no significant evidence of Granger causality between changes in CEO and director compensations in these first-differenced regressions.

[8] Goyal and Park (2002) document that CEO turnover is less sensitive to firm performance when the CEO is also the Chairman of the Board of Directors. Fich and Shivdasani (2005b) find that firms with board of directors characterized with a majority of outside directors holding three or more directorships are less likely to oust a CEO for poor firm performance. Core, Holthausen, and Larcker (1999) find that a weak board governance structure, including the existence of gray, interlocked, and busy directors, is associated with high CEO compensation and low firm performance. See also Agrawal and Nagarajan (1990), Rosenstein and Wyatt (1990), Byrd and Hickman (1992), and Hallock (1997).

for at least two (not necessarily consecutive) years. We gather the number of busy directors, defined as the number of directors that serve on at least three other boards, the number of gray directors, defined as those who receive either directly or indirectly additional consulting or other compensation from the firm. We also include a dummy variable which equals one if the directorate is interlocked, defined as one where the chairman and/or CEO sits on the board of another company whose chairman and/or CEO is also a board member. We also gather the number of shares (both including and excluding options) owned by the CEO, the board of directors and all executive officers, and any external blockholders. The means, standard deviations, and differences for the two groups are summarized in Table VII. We also analyzed the differences in the means by year for the two groups and found similar results.

With the exception of the number of gray and insider directors, we find that excess director compensation is significantly positively related to those variables normally associated with poor governance. Highly paid directors are more likely to be busy,[9] serve on interlocking boards, and be associated with firms where neither the CEO, the directors, or the other executive officers own large shares of stock. Highly paid directors are less likely to be associated with boards of companies with large blockholdings as the existence of blockholders may reduce agency problems. Thus, we conclude that excess director compensation and poor governance are not substitutes as other poor governance structures are more likely to exist in firms which provide excess pay to their directors.

The association between excess director compensation and the traditional governance variables obliges us to examine whether the excess compensation is an independent measure of poor governance. In order to test whether this is the case, we run the pooled CEO compensation

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[9] Fich and Shivdasani (2005b) find that busy directors are less effective monitors. Conyon and Read (2005) show that directors will spend more time on external directorships than is optimal for their home firm.

regressions found in Tables V and VI to determine whether CEO and director compensation are positively related after controlling for the hand-collected governance variables described in Table VII for the smaller sample. As this sample is smaller, we do not include the SIC and year dummies in this regression. We find extremely similar positive coefficients on excess director compensation in the CEO regression as in our prior pooled regressions, and these coefficients are all significant at the 1% level. Thus, we conclude that excess compensation is associated with poor governance, and that the relationship between CEO and director compensation is not fully captured by governance quality variables that are discussed in the existing literature. We thus turn to see whether the governance problems reflected in excess compensation are negatively associated with firm performance, and thus consistent with cronyism.

V. Compensation and Performance

As the above results demonstrate, CEO and director compensations are positively correlated even after correcting for many other factors. The question then is why? One possible reason for the positive correlation is that CEO and director compensation levels are positively related to firm complexity and the talent and effort that are needed to manage and direct such companies (in a way that is not fully captured by firm characteristics or even firm-specific dummies). An alternative explanation is that the positive relation between these variables reflects cronyism, whereby the board and CEO are more concerned with selfish objectives than with protecting shareholder interests. In the first case, we posit a weakly positive relationship

between firm performance and the compensation levels of the CEO and the directors. In the second case, we posit that this relationship should be negative.[10]

We examine firm performance using excess holding period returns from the end of year t to the end of year t+1. We provide an analysis of excess returns from both a traditional one-factor market model and from a Fama-French three factor model which includes size and market-to-book factors. In both cases, the beta parameters are estimated from the prior 200 trading days.[11] Our regressions include all the prior variables as controls (including industry dummy variables in our pooled regressions and time dummy variables in our fixed effect and pooled regressions). However, for brevity, we report only the estimates on the governance characteristics and our compensation variables. As these controls include past performance, we explicitly account for any potential mean reversion in operating performance and stock returns.

The first column of Table VIII presents the results of regressing holding period excess returns on all the independent variables considered in the previous tables, as well as on the total compensations of CEOs and directors. The first two columns use the holding period excess return based upon the market single factor model as our performance measure. The first column presents the pooled regression and the second column presents a fixed-effect regression. The third and fourth columns present the same regressions using a Fama-French three factor model. Note that because all the variables reported in Tables IV through VI are included as controls, the economic and statistical significances of our excess compensation results are identical to the corresponding results obtained from regressions in which the compensation levels are replaced

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[10] The previous literature has linked firm performance to the fraction of CEO non-cash compensation (see, for instance, Mehran, 1995). However, the hypothesis we address is explicitly predicated upon the compensation levels and the structural relationship of the compensation levels of directors and CEOs.

[11] In a prior version of the paper, we use the change in Q as the measure of performance, with similar results. We also examine the future ROA as an alternative measure of firm performance, but we find that the results using accounting profitability are not robust to inclusion of years after 1999.

by the residuals from the respective compensation regressions. Among the governance characteristics, the percentage of equity owned by the CEO is significant at the 1% level in the pooled regressions for the one factor model. Additional testing shows that this negative coefficient is primarily driven by a few outliers in the later years of the sample (this variable has a positive significant coefficient in the fixed effect regressions for the earlier years in the sample), and removing these outliers does not impact our primary results.

Recall that, because we use two excess compensation variables (CEO and directors) in each regression and because we use two regression procedures (pooled and fixed effects) and two market models (one and three factors), we report in Table VIII eight excess compensation coefficients. All eight coefficients are negative, three of them are significantly different from zero at the one percent significance level, a fourth coefficient is significantly different from zero at the five percent significance level, and a fifth coefficient is significantly different from zero at the ten percent significance level. Thus, the regressions imply that if directors are paid more than suggested by firm, CEO, and other governance characteristics, this bodes ill for the firm's future excess equity returns. This result is consistent with the cronyism hypothesis.

The magnitude of the coefficients estimated in the one-factor fixed effect regression suggests that a 10% increase in director excess compensation would correspond to a 1% decrease in firm returns, whereas a 10% increase in CEO excess compensation would correspond to a 0.8% decrease in firm returns. The results for directors are particularly striking if one considers the small magnitude of excess director compensation (on average, $6,723 per director) which would lower the firm's equity value by a full 1%. When we use the holding period excess return given by the Fama-French model using fixed effects, the coefficients imply that a 10% increase

in the director compensation results in a 0.59% decrease in equity value. A 10% increase in the CEO pay results in a 1.09% decrease in equity value.

In order to control for potential non-linearities, we construct two dummy variables. These variables equal one if the residuals in the CEO and director log compensation regressions, respectively, are positive and greater than one standard deviation. We run alternative regressions using these dummies rather than the actual compensations. After correcting for fixed effects, both dummy variables have negative and significant coefficients in the regression on future holding period returns. These results suggest that the relation between excessive compensation and poor future performance is robust. The estimates of these regressions are available upon request.

We next consider whether there is additional evidence that this negative relation between director compensation and performance is consistent with the cronyism hypothesis. Recall that the prior regressions consider the component of total compensations that is not correlated with our control variables. Next, we follow Core et al. (1999) and consider only that incremental portion of CEO compensation due to higher director compensation, and similarly, the incremental portion of director compensation due to higher CEO compensation. While the regressions of Table VIII capture whether there is any negative impact of excess compensation, the next set of regressions captures the structural relationship between the CEO and director compensations. In essence, we want to see whether this structural relationship has a positive or negative relationship with firm performance.

We use the difference between fitted regressions as another measure of cronyism. Specifically, we consider the portion of CEO compensation additionally explained by director compensation as another proxy for cronyism. Let X be the matrix of data used in the first CEO

total compensation regression, let $\hat{\beta}_1$ be the estimated coefficients in that regression (Table VI, column one), and let $\hat{\beta}_2$ denote the coefficients on the same variables in the second regression, which include the directors' compensation (Table VI, column two). Then let Z denote the matrix of director compensation, and let $\hat{\delta}$ denote the estimated coefficients on these variables. Formally,

$$FITTED\_CEO\_COMP = X\hat{\beta}_1 \tag{1}$$

$$FITTED\_CEO\_COMP\_W\_DIR = X\hat{\beta}_2 + Z\hat{\delta} \tag{2}$$

Then we define difference in fitted compensation as:

$$CEO\_DUE\_TO\_DIR \equiv FITTED\_CEO\_COMP\_W\_DIR - FITTED\_CEO\_COMP$$

We use this difference in fitted regressions to capture the portion of CEO compensation explained by director compensation. Similarly, we define DIR_DUE_TO_CEO as the difference between the director compensation regressions with (from an unreported regression) and without (from Table IV, column three) CEO compensation. Similar to Table VIII, Table IX provides eight estimated coefficients on the CEO_DUE_TO_DIR and DIR_DUE_TO_CEO variables. Again, all eight coefficients are negative, three of them are significantly different from zero at the one percent significance level, and a fourth coefficient is significantly different from zero at the five percent significance level. These result provide additional support for the cronyism hypothesis. Alternatively, one could use the estimated coefficients times the compensation

variables, that is the $Z\hat{\delta}$, as the measure of cronyism. In practice, this gives identical results to two decimal places.

We examine the impact of correcting the standard errors in the pooled regressions for the fact that two of our independent variables, CEO_DUE_TO_DIR and DIR_DUE_TO_CEO are estimated from a prior regression (see Newey, 1984; Murphy and Topel, 1985). However, the impact of the correction on the standard errors is minimal and does not significantly affect our results.

In an alternative specification, we include the percentage of non-cash compensation for CEOs and directors as additional independent variables to control for the incentive effects of such compensation. We find that these variables do not impact our primary conclusions. While we would expect large equity holdings by directors to mitigate the cronyism problems that we uncover, we believe the median director's holding is insufficient to fully mitigate the problem of cronyism.

An interesting question is whether career concerns and incentive compensation of the directors could sufficiently induce directors to properly monitor management. If the labor market for the board of directors is fully efficient, it should fully reflect the performance of the director, and we would therefore expect the market to discipline cronyism (see, Fama, 1980). However, for the labor market to efficiently discipline the director for poor behavior, the market has to be able to discern or learn the ability of the director (Gibbons and Murphy, 1992). This may be impossible in a team environment in which the board of directors operates. In this case, free-ridership concerns and even implicit sabotage incentives may emerge (Auriol, Friebel and Pechlivanos, 2002) to prevent proper monitoring. Moreover, entrenched managers seeking to extract control benefits at the expense of shareholders might offer economic incentives to reward

monitors who allow such behavior and punish (or dismiss) those directors who oppose the CEO's sense of entitlement (Warther, 1998). Thus, it is an empirical question as to whether cronyism exists. If the imperfections of the director labor market are sufficient, then the interests of some directors may not be properly aligned with that of shareholders and opportunistic behavior upon the part of directors will be present. Yermack (2004) details the incentive impacts for directors from reputation and replacement as well as compensation. While Yermack (2004) finds significant incentives for good performance, he finds only a limited association between firm performance and the ability of board members to get new directorships.

Overall, we find negative and often significant coefficients for our excess compensation variables in the regressions reported in Tables VIII and IX. These results are obtained after controlling for the impact of other well-known governance proxies such as board size, whether the CEO serves as chairman of the board, and the percentage of internal directors. We interpret these results as providing evidence that excess compensation is not due to more effort or firm complexity. Instead, we believe the results are more consistent with overpayment of CEOs and directors being symptomatic of a firm's agency problems and the resulting future underperformance.

VI. Conclusion

The Enron debacle and the Global Crossing bankruptcy have renewed concerns about the effectiveness of board monitoring and the compensation of directors. This paper investigates whether overcompensation of directors and CEOs is related to firm underperformance. We model CEO and director compensation using a variety of firm characteristics, CEO characteristics, and governance variables. We find that director compensation is closely related

to the monitoring and effort required of directors to ensure value maximization. Nevertheless, after controlling for monitoring proxies, we also find a highly significant positive relation between CEO and director compensation. We hypothesize that this relation could be due to unobserved firm complexity (omitted variables) or to excessive compensations of directors and managers associated with an environment of ineffective monitoring, which is termed cronyism in the popular press.

We test these alternative interpretations by relating future firm performance to the portions of CEO and director compensation that are not related to firm characteristics, CEO characteristics, or other governance variables. We hypothesize that if the positive relationship between CEO and director compensation is due to omitted variables, the relationship between their additional compensations and firm performance should be weakly positive. In contrast, if the positive relationship between CEO and director compensation is symptomatic of cronyism, then the relationship between firm performance and excess compensation should be negative. The evidence is consistent with the latter hypothesis.

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