RELATIVE INFLUENCE OF THE MANAGERIAL POWER DIMENSION OF CORPORATE GOVERNANCE ON ANALYSTS' EARNINGS FORECAST ACCURACY IN LARGE AND SMALL FIRMS

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Abstract

This study examines the influence of managerial power on analysts' earnings forecast accuracy. CEO/Chairperson duality and voting power of management on the board are used as proxies for managerial power. After controlling for key variables that have been shown to affect analysts' forecast accuracy in prior literature, this study indicates that managerial power is positively associated with analysts' earnings forecast errors for large firms, but not for small firms. The non-significant association between managerial power and forecast accuracy for small firms suggests that managerial power presents relatively less agency problems for small firms, while the inverse relationship between managerial power and forecast accuracy for large firms indicates that the managerial power dimension of corporate governance is a potential source of significant agency problems for large firms.

I. INTRODUCTION

Earnings forecasts are important inputs to analysts' valuation models and ultimately their recommendation of whether a stock should be sold, held, or bought. Through their recommendations, analysts play a significant role in capital allocation in the capital markets. Therefore, it is not very surprising that management tends to be keenly interested in influencing analysts' forecasts and ultimately, their recommendations on their stocks.

Top management (typically the CEO and/or CFO) influences the process analysts employ to arrive at their recommendations by providing "guidance" to analysts about their firms' future earnings. Increased use of stocks and options as compensation vehicles (e.g., Cheng and Warfield 2005) and asymmetric reaction of the capital markets to missing versus meeting or beating analysts' earnings forecasts have heightened management's incentive to provide biased information to influence analysts' forecasts (e.g., Skinner and Sloan 2002). Unfortunately this managerial tendency to bias is exacerbated by the fact that analysts tend to not discern the bias in the "guidance" they receive (Bradshaw, Richardson, and Sloan 2001) or "play along" to help their firms win investment banking and trading business from the firm being covered (e.g., Michaelly and Womack 1999; Bradshaw, Richardson, and Sloan 2003).

Since the CEO and the CFO tend to be the two most powerful people in the firm, an important research question is whether effective constrains on their power can act as a check on their tendency to provide biased information to analysts. For example, would a chairman with a somewhat equal stature on the board be better able to check the veracity of the CEO's guidance to analysts? Given the significant role of the CEO (and/or sometimes the CFO) in the earnings guidance process, this paper attempts to answer this question by evaluating the influence of managerial

power on analysts' forecast accuracy. In answering this question, I account for important institutional differences in the ownership structure and informational environments of large and small firms. These differences in turn influence the importance of agency problems, and ultimately whether constrains on managerial power are important in reducing analysts forecast errors.

I find that managerial power is positively associated with analysts' forecast error for large firms but not for small firms. I interpret the result as agency problems being less important in small firms than large firms. This result is important in part because it contributes to the corporate governance and analysts' forecast literatures by documenting that incorporating important institutional differences between small and large firms can result in different results in corporate governance and analysts forecast research. Furthermore, the results of this paper demonstrates that managerial power is an important dimension of corporate governance worthy of more research effort separate from the other dimensions of corporate governance.

The rest of the paper is organized as follows. I present the prior literature, theory and hypotheses in Section 2, describe the data, variables, and research design and empirical models in Section 3, and the results of the empirical models in Section 4. I conclude in Section 5.

II. PRIOR LITERATURE, THEORY AND HYPOTHESIS

Institutional Differences in Extent of the Agency Problem and the Information Environments

I examine the role of managerial power on small and large firms separately for several reasons. First, there are important differences in ownership structure (e.g., Mikkelson et al. 1997) and the quantity and quality of financial information available for the two types of firms. In turn, these differences imply that managerial power might be differentially important in small and large firms. Furthermore, small firms are usually younger, having gone public

later than larger (usually older) firms (Dennis and Sarin 1999). As a result, the founding owner is more likely not only to own a greater percentage of shares and so has his interest better aligned with those of shareholders (Ang et al. 2000), but also, to be more knowledgeable about the business. The combination of greater share ownership and managerial expertise means that there are minimal, if any, agency and performance problems to be addressed with additional corporate governance mechanisms.

Another means of gauging the alignment of management and shareholder interest is the percentage of outstanding shares management owns. As a percentage of total shares outstanding, management's share ownership would be smaller in large firms than in small firms. Theoretically this would result in a better alignment of management and shareholder interests in smaller firms. For example Hart (1995) theorizes that in the absence of agency problems, it is sufficient to instruct all employees to maximize shareholder value or minimize costs. Corporate governance does not matter in such a setting because there are no agency problems. I argue that where management's share ownership is significant – a more likely scenario in small than in large firms – corporate governance is less important.

Regarding the role of size in analysts' forecast accuracy, from the perspective of the firm's information environment there tend to be more information available to gauge future earnings of large firms than those of small firms. For example, early research on earnings response coefficients (ERCs) find that the measurement error on time series models of ERCs is lower for small companies (e.g., Collins and Kothari 1989) because less data have to be collected and impounded into stock prices between earnings announcements (Dechow and Schrand 2004).

Management's Incentive to Bias Earnings-related Information Conveyed to Analysts

Related to the notion of alignment of shareholder and management interests, increased dependence of management's compensation on stock price performance provides an incentive to guide analysts away from their true beliefs about earnings toward forecasts that can readily be met or beaten (Richardson, Teoh and Wysocki 2004). Richardson et al. (2004) find that between 1988 and 1994 analysts had a tendency to be optimistic, on average, about earnings. This tendency changed between 1995 and 1998, during which period analysts tended to first issue optimistic forecast, and subsequently revise them down as the earnings announcement date neared.

The initial forecasts and subsequent revisions are ostensibly based on guidance from management and so facilitate management more easily beating the forecast. Also Myers (2001) suggest that management times firm restructuring charges to have a "big bath" effect when earnings are low and smooth earnings when they high. Holthausen, Larcker, and Sloan (1995) find similar evidence of earnings management to decrease (i.e. smooth) earnings when they exceed an upper bound, though they do not find evidence managing earnings downward.

Furthermore, asymmetric reaction of stock prices to meeting or beating versus missing analysts' consensus forecasts implies that management stands to gain significant compensation if they meet or beat forecasts but stand to be even more severely punished if they miss them (Skinner and Sloan 2002). This asymmetric market reaction to meeting or beating versus missing forecasts further incentivizes management whose interests may not be well-aligned with those of shareholders in the first place, to pull all the levers available to them to ensure they meet or beat analysts' forecasts as opposed to missing them. Of course, earnings management presupposes that the market misprices managed earnings, and that management can take advantage of such mispricing before it is corrected (e.g., through exercising options

obtained through compensation). Supporting this reasoning, Richardson, Tuna and Wu (2002) and Cheng and Warfield (2005) find a positive association between earnings management and stock-based compensation.

Differential Potential of Corporate Governance as a Check on Management's Incentive to Bias Analysts' Forecasts

Corporate governance quality can constrain a management's tendency to "play an earnings game" with analysts, where they may reward analysts who "buy into" management's tendency to manage expectations to beatable forecasts with investment banking and related services to the analyst's firm (e.g., Michaelly and Womack 1999; Bradshaw, Richardson, and Sloan 2003) in at least two ways.

First, strong corporate governance usually involves setting a good "tone at the top" about ethical behavior. Such a culture of "setting a good example" would likely include not managing earnings or manipulating analysts' expectations, if only to avoid "bad press" in the future. Second, strong corporate governance in the form of separation of the CEO and Chairmanship positions means that there is at least another person of equal stature on the board to constrain a powerful CEO's tendency to manage earnings and the analysts' earnings expectations with the goal of maximizing their own compensation. For example, Dechow, Sloan and Sweeney (1996) find that the proportion of outside directors on the board and CEO/chairmanship separation are negatively associated with the likelihood of an SEC enforcement action against a company. Beasley (1996) confirm the negative association between outside directorships and SEC enforcement actions.

Several factors influence analysts' forecast accuracy, including the analyst's forecasting skills, quality of information gathered from management and forecast horizon. To the extent the management of all firms act in the same way in how they release information to analysts, there would not be any difference in the

portion of analysts' forecast accuracy that is attributable to some managers exploiting their power for their self-interest. However, if differences in corporate governance results in differences in the information environment of firms' earnings, then corporate governance would influence the analysts' earnings forecast accuracy across the cross section of firms.

Furthermore, consistent with the notion that there tend to be more information available for large firms than for small firms, and that it is more challenging to align the interests of management and shareholders for large firms than for small firms (for example, because management's share ownership in large firms is a smaller percentage of total shares outstanding than for those of small firms), corporate governance measures are less likely to be important for small firms than for large firms. Thus the primary hypothesis of this paper is:

H1: Managerial Power is Positively Associated with Analysts' Earnings Forecast Error.

The second hypothesis derives from the discussion about potential differences in importance of corporate governance as a constraining effect on managerial power and ultimately, analysts' forecast error:

H2: The association between managerial power and analysts' earnings forecast error is affected by firm size such that managerial power is more important for large firms than for small firms.

III. RESEARCH DESIGN

Data Sources

Firm-level financial statement data are obtained from Compustat and analysts' forecasted EPS and related data are from I/B/E/S. The forecasted market listing information and the CEO/Chair duality are from Compustat's ExecuComp database, and other corporate governance data are from IRRC. The analyst

forecasts are all one-year-ahead forecasted EPS data. Using only one year ahead forecasts eliminates the issue of differences in forecast horizon and diminishes the role of other disclosures and related non-financial information that reaches the capital markets over the course of the fiscal year. All variables used in this paper are defined in Table 1.

Periods and Market Segments Covered

I classify the sample of firms belonging in the S&P 500 and the S&P 400 Mid Cap as large firms and those in the S&P 600 Small Cap and firms not traded on any of the major exchanges as small firms. The data spans 1996 through 2006. Consistent with archival, capital markets-based research, I exclude firms in the financial and utilities industry because regulation of these industries, make them quite different from other unregulated industries. Merging the two datasets used in this study and dropping observations for which certain data are unavailable yields between 29,269 and 30,307 firm-year observations depending on data availability for individual variables[1]. Merging this dataset with the corporate governance data obtained from the IRRC and Compustat's ExecuComp yields between 7,790 and 8,795 firm-year observations spanning 1996 to 2006. For testing the hypotheses, observations missing any requisite data item are deleted, resulting in 7,744 firm-year observations.

Managerial Power Variables

I evaluate two mechanisms that I believe collectively capture the strength of managerial power of a firm. A CEO who wields too much power weakens the boards' oversight power. A

[1] For some firm-years, there is more than one consensus forecast since I/B/E/S sometimes reports more than one consensus forecast for a company in a single year. I take the average where there is more than one consensus forecast for a company so that in my final sample there is a single data point per company-year.

CEO who is also chairman of the board is more likely to wield excessive power, which I capture with the variable CEOISCHAIR which is 1 if the CEO is also the chairman, 0 otherwise. The other governance mechanism I evaluate is the voting power of management on the board, VOTE[2]. Similar to CEOISCHAIR, it captures an aspect of insiders' power, or diminished board independence. The officer voting power variable is from IRRC, while data used to construct CEOISCHAIR is from ExecuComp.

Earnings-related Variables

Prior research and valuation theory suggests that previous year's earnings provide a basis for forming expectations about future earnings **(**e.g. Ball and Bartov 1996, Damodaran 1994; Brealey and Myers 1996). Thus the earnings-related variables include prior year's earnings per share (EPS).

Discretionary accruals are the primary means through which management manages earnings (e.g., Kaznik 1999; Bradshaw, Richardson, and Sloan 2001). However, as Bradshaw et al (2001) shows, analysts consistently do not incorporate the time-series information implicit in accruals in their forecasts. Thus expect excess accruals to detract from analysts' forecast accuracy. I use the absolute value of discretionary accruals measured using the Modified Jones Model (Dechow et al. 1995) to capture the quality of a firm's earnings. This variable (ABSDACC) is measured cross-sectionally to mitigate the data requirements of measuring this construct using time-series data (e.g. Dechow et al. 1995). Total accruals are estimated as follows:

$$TACC_t = 1/Ta_{t-1} + \Delta REV_t - \Delta REC_t + PPE_t + e \qquad (1)$$

where:
TACC = (OPINC – CFO)/TA ≡ Total accruals;
OPINC = Operating income;

[2] The voting power of members of management who sit on the board may also proxy for independence of the board indirectly.

CFO = Cash flow from operations;
TA= Total assets of the prior year;
ΔREV= Change in revenue from the prior year;
ΔREC= Change in accounts receivable from the prior year;
PPE= Property, plant and equipment.

All variables are scaled by prior year's TA, and come from Compustat.

Equation 1 is estimated by two-digit SIC code for all industries with more than nine yearly observations. The firm-level residuals from (1) are discretionary or abnormal accruals. The absolute value of the discretionary accruals is the measure of earnings quality in this paper.

Large values of ABSDACC portend potential earnings management and lower quality of earnings**.** MTB is the lagged market-to-book ratio, and measures growth potential of firms. High growth firms are likely to have more volatile earnings and may be more difficult to forecast. MTB also captures growth as an input to the analyst's earnings forecast task. In testing my hypotheses, the dependent variable is ABSFCERROR, which is the absolute value of analysts' consensus forecast error for a firm and its derivation is explained in Equation 2 below.

I use absolute forecast errors because signed forecast errors require some *a priori* knowledge about the direction of management's bias. Kaznik (1999) shows that companies manage earnings toward their own forecasts. However, since this is private information that is not always observable *ex ante*, I simply use absolute forecast errors, which do not detract from the broader goal of gauging the influence of managerial power on analysts' forecast accuracy. The basic empirical model I use to test my hypotheses is:

$$ABSFCERROR_t = f(EPS_{t-1}, EQ, Managerial\ Power', Controls')(2)$$

Where all variables are as described earlier, $ABSFCERROR_t = |(\text{Actual } EPS_t - \text{Mean Consensus Forecast } EPS_t)$

| is absolute forecast[3] error, and Mean Consensus Forecast EPS_t is obtained by taking the mean of all forecasts by all analysts for a firm, *i*, for each year, *t*. Actual EPS_t is the actual earnings per share realized for firm *i*, at time *t*, the year for which an analyst forecasts a firm's earnings. The forecast horizon is one year. Thus all forecasts are made one year before the earnings release date. Analysts' forecast data and related actual EPS data are from I/B/E/S.

Control Variables

An aspect of an analyst's forecast that contributes to his accuracy is the difficulty of estimating a particular firm's forecasts. Another factor that can influence forecast accuracy is firm size. I control for firm size with the lagged total assets, ASSETS[4]. Since analysts are likely to learn from other analysts' forecasts, helping improve their forecast accuracy, I include the number of forecasts (NUMEST) as a control variable because this number tends to be positively associated with size and more accurate estimates: the larger the number of estimates, the more likely it is that analysts learned from each other to form their estimates. I also control for leverage with lagged (total debt / total assets), LEVERAGE, for two reasons. First, excessive leverage may signal financial distress, leading to lower EPS forecasts or difficulty in forecasting EPS. Second, debt holders potentially denote significant external oversight over management and other equity holders (Larcker et al.

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[3] Consistent with the measure of forecast accuracy in the literature (e.g. Duru and Reeb 2002; Mikhail et al. 1997 & 1999).

[4] Lagged total assets (ASSETS), is used to control for size because using market value will result in a too direct a relation between the control variable for size and the variable used to partition the sample into small and large firms. Some variables are lagged because they are based on what an analyst would likely observe and evaluate at the time he/she is forecasting. So when he/she is forecasting at t for t=1, he/she only observes actual data from t-1.

2007). It is difficult to forecast earnings for firms making losses in part because relative to profits, analysts have limited experience with forecasting for loss firms due to survivorship bias against loss firms. Therefore I control for loss years (LOSSYR is 1 in loss years, 0 otherwise). All data for the control variables described thus far are from Compustat.

Empirical Models

H1 proposes a positive association between the absolute value of analysts' EPS forecast error (ABSFCERROR) and managerial power. Equation 3 is the empirical model used to test H1.

$$\begin{aligned} ABSFCERROR = {} & \beta_0 + \beta_1 ABSDACC + \beta_2 EPS + \beta_3 LMTB \\ & + \beta_4 LOSSYR + \beta_5 CEOISCHAIR + \beta_6 VOTE \\ & + \beta_7 CEO\_FIRMSIZE + {}_8 VOTE\_FIRMSIZE \\ & + \beta_9 LEVERAGE + \beta_{10} NUMEST + \\ & \beta_{11} ASSETS + \varepsilon \qquad (3) \end{aligned}$$

Where FIRMSIZE is coded as 4 for S&P 500 firms, 3 for S&P 400 Mid Cap firms, 2 for S&P 600 Small Cap firms, and 1 for firms not traded on any of the major exchanges; CEO_FIRMSIZE is the interaction of CEOISCHAIR and FIRMSIZE, and VOTE_FIRMSIZE is the interaction of VOTE (voting power of management) and FIRMSIZE. All other variables are as described in Table 1. Using FIRMSIZE instead of ASSETS for the interactions mitigates multicollinearity, making it feasible to use ASSETS to control for size[5]. The interactions are used to gauge the influence of firm size on the effect of managerial power on analysts

[5] Variance inflation factors (VIF) are over 30 for the main effects and interactions of all variables interacted when ASSETS or MVE is used. The largest VIF(3.3) is related to ASSETS when FIRMSIZE is used for the interactions.

EPS forecast error in the full sample, before examining large and small firms separately[6].

Equation 4 is used to test H2: The strength of the positive association between managerial power and analysts' earnings forecast error is affected by firm size. To recognize the disparate information and agency environments of small and large firms, I estimate Equation 4 separately for small and large firms. As indicated earlier, I separate firms into small and large firms based on the market index to which a firm belongs. I use firms in these market indexes as the sample for this study for two reasons. First, governance data is more readily available for these firms; second, because each index is designed to represent broadly specific segments of the market, these firms collectively represent much broader segments of all publicly traded firms[7], making the results more generalizable. Equation 4 is as follows:

$$ABSFCERROR = \beta_0 + \beta_1 ABSDACC + \beta_2 EPS + \beta_3 LMTB + \beta_4 LOSSYR + \beta_5 CEOISCHAIR + \beta_6 VOTE + \beta_9 LEVERAGE + \beta_{10} NUMEST + \beta_{11} ASSETS + \varepsilon \quad (4)$$

Where CEOISCHAIR and VOTE are the managerial power-related variables, LEVERAGE, NUMEST and ASSETS are control variables, and all variables are defined in Table 1. As indicated earlier, the managerial power variables will be significant

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[6] Potential concern about size driving the results is addressed at least partly by winsorizing ASSETS (total) at the 1% and the 99% levels and by controlling for size. Other variables winsorized at the same level are prior year's earnings per share (EPS), lagged market-to-book ratio and absolute value of discretionary accruals (ABSDACC).

[7] Also, by using the market group to which a sample firm belong as the partitioning variable, I am able to use a different variable (lagged total assets, ASSETS) to control for firm size in my tests.

for large firms if the theory that large firms have more developed corporate governance mechanism than small firms (e.g. due to endogenously-determined corporate governance mechanisms and differential operational and strategic needs of newer, smaller firms compared to mature, older firms).

IV. ANALYSIS OF RESULTS

Descriptive Statistics

Descriptive statistics for the final dataset that includes the corporate governance variables are presented in Table 2, Panel A. That sample size has 7,744 observations depending on data availability for each variable. The mean forecast EPS and ACTUAL EPS are larger than that in the larger dataset as the firms in this sample are larger (mean total assets and of market value of $7.20 billion $7.43 billion versus $5.75 billion and $5.99 billion respectively), while the mean ABSFCERROR is smaller ($.22 versus $.25).

Turning to Table 2, Panel B, there are some expected associations among the data. Mean forecasted EPS (MEANEST) is positively associated with number of estimates (NUMEST), prior year's income (EPS), size (ASSETS). Interestingly while significant, the pair-wise associations between each of these variables and Actual EPS are quite small[8]. As expected the association between MEANEST and ACTUAL is strong (~.89). There is a strong positive associations between CEOISCHAIR (1 if the CEO is also chairman, 0 otherwise) and ASSETS (~.35), suggesting that large firms tend to have powerful CEOs**.**

In Table 3, I present simple descriptive statistics of the same data presented in Table 2 by market index to which the sample firms belong. In Table 4, the sample firms in the S&P

[8] The following variables in the dataset are winsorized at the 1% and 99% levels: ABSADACC, EPS MTB, ASSETS (Lagged total assets), MEANEST and ABSFCERROR.

Small Cap index (SM) and those not traded on any of the major exchanges (EX) are combined into the small firms subsample while sample firms in the S&P Mid Cap (MD) and S&P 500 (SP) indexes are combined into the large firms subsample.

Test of H1: Managerial Power is Positively Associated with Analysts' Earnings Forecast Error

H1is tested by estimating Equation 3. The results from the main model are presented in column two of Table 5. Columns three and four show the results of sensitivity analyses of including the interaction of only one managerial power variable with firm size at a time. As hypothesized, the coefficients on each of the two managerial power variables (CEOISCHAIR and VOTE) are positive and significant. However, the interactions of both managerial power variables and firm size are each negative, though that of management's voting power and size VOTE_FIRMSIZE is not significant (Column two). The negative coefficient on the interaction suggests that conditional on high managerial power, firm size moderates otherwise large analysts' forecast errors. This interpretation is consistent with more information being available for large firms than small firms (e.g., Lang and Lundholm 1993). Still, taking the sum of the coefficients of the main and interaction variables yields a net positive effect of managerial power on analysts' EPS forecast accuracy. For example, the sum of the coefficients of CEOISCHAIR and CEO_SIZE $(\hat{\beta}_5 + \hat{\beta}_7)$ is positive (Table 5, column two).

Since the interaction of management's voting power and size is not significant, I do not evaluate the combined coefficients. Instead, I perform a sensitivity test of the interactions using one managerial power variable at a time (columns three and four of Table 5). Both the main effects of the managerial power variables and their interactions with firm size are significant when only one managerial power variable is in the regression at a time. Further, the sum of the coefficients of the main and interaction variables ($\beta_5 + \beta_7$) and ($\beta_6 + \beta_8$) are positive for both managerial power

variables, supporting H1. That is high managerial power is positively associated with analysts' EPS forecast error, *ceteris paribus*. However, the forecast error is potentially mitigated by size perhaps due to more information being available to analysts about large firms or powerful CEOs of large firms using their position to help manage analysts' expectations.

As expected high values of the earnings quality variable (ABSDACC) are associated with higher analysts' forecast error. Interestingly, prior year's income per share (EPS) is positively associated with forecast error, suggesting that when firms earn higher profits, analysts' EPS forecast accuracy tends to decline. A potential explanation is that the positive association between earnings and forecast errors is due to analysts' optimism (Easterwood and Nutt, 1999), especially for profitable firms, the bulk of firms traded on the major exchanges.

Consistent with loss years being difficult to forecast, losses are associated with larger forecast errors[9]. Number of estimates (NUMEST) is negatively associated with forecast errors. This is at least in part because the more the number of analysts following (and estimates for) a firm, the more likely for information to flow among analysts, improving their consensus forecasts (e.g., Lang and Lundholm 1996; Lang, Lins, and Miller 2003)**.** Interestingly, growth potential (MTB) does not significantly influence analysts' forecasts. This is likely because the combined sample of large and small firms creates too much variability in the sample, reducing statistical power[10].

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[9] Results of multicollinearity and related Variance Inflation Factor (VIF) diagnostics ran in all the regressions in this paper (the COLLIN and VIF options in SAS) suggest that multicollinearity does not pose a problem in any of the regression models. The highest VIF is around 3, well below 20, the number around which multicollinearity should be a concern. With the COLLIN test in SAS, none of the variables in any of the regressions approach the 100, required for concern (Belsley, Kuh, and Welsch, 1980).

[10] Growth potential (MTB) is significant in both small and large firm subsamples used to test H2.

Losses are positively associated with forecast errors. This is consistent with the going concern assumption in accounting: losses (LOSSYR) are difficult to forecast due to their relative rarity compared to profits, and the abandonment option (Hayn 1995)[11].

The control variable for size (ASSETS) is positively associated with forecast errors. This is consistent with the fact that analysts tend to forecast larger EPS for large firms (for example, Panel A of Table 3 shows, average EPS for the S&P 500 firms (SP) in the sample is $1.59 while that for the S&P Small Cap (SM) is $1.08). The positive coefficient of ASSETS suggests that in spite of the larger amounts of information available for forecasting earnings of large firms, analysts may tend to make larger forecast errors for such firms.

Test of H2: The association between managerial power and analysts' earnings forecast error is affected by firm size such that managerial power is more important for large firms than for small firms.

Before testing H2, I first estimate Equation 4 for all firms (both large and small combined) in my sample to ascertain that size is a significant input to analysts' EPS forecasts, and in determining analysts' forecast errors. The un-tabulated results indicated that size, proxied by the lagged total assets (ASSETS)[12] is significant in determining analysts' EPS forecasts ($P<.0001$) and forecast errors ($p<.0001$). Next, I test H2 by demarcating the data into two groups

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[11] Hayn (1995) documents that earnings response coefficients tend to reflect book values for firms making losses because management would rather liquidate the business than continue to make losses.

[12] I use lagged total assets instead of market value of equity (MVE) because MVE is likely strongly related to the partitioning variable for my tests of H2, the market index to which a firm belongs. Also, MVE is strongly positively associated (~78%) with total assets such that the results are almost identical when I replace ASSETS with MVE.

by size[13]. As discussed earlier, the partitioning variable is based on the stock market index to which a firm belongs and this information is pulled from Compustat's ExecuComp database. There are four groups namely S&P 500, S&P 400 Midcap, S&P 600 Small Cap, and firms not on any of these indexes. The S&P 500 and S&P 400 Midcap firms are grouped together as large firms, and the S&P 600 and firms not on any of these indexes are grouped together as small firms.

H2 proposes that if analysts incorporate corporate governance measures into their forecasts, they will do so strategically based on firm size such that corporate governance measures are differentially associated with analysts' earnings forecast error depending on firm size. To test H2, I estimate Equation 4 separately for large and small firms.

The interpretation of the coefficients from a regression of absolute EPS forecast error on potential inputs to EPS forecast falls into one of the following groups. First, if the forecaster efficiently incorporated an input variable into his/her forecast, then that variable should either not be associated with forecast errors at all or should be associated with low levels of forecast error. Second, if the forecaster incorporated an input variable inefficiently, that input variable would be positively associated with forecast errors. Third, if the forecaster strategically (i.e. knowingly) ignored an input variable and was correct in doing so, the coefficient on that input variable will be insignificant or negative. Finally, if the forecaster was wrong (i.e. naively) ignored an input variable, the coefficient on the variable would be positive. Therefore, the interpretation of each of the coefficients in testing H2 falls into one of these four categories.

[13] I view firm size as being highly correlated with firm age as young firms tend to be smaller, and older firms, larger.

Test of H2: Small Firms

For all small firms as a group, all the 'traditional' measures of earnings and earnings (e.g. prior income –EPS; growth prospects-MTB) and earning quality (ABSDACC) are significantly associated with forecast error (Table 6). An interesting difference from the result of the full sample test of H1 is that growth (MTB) is positively associated with forecast errors for small firms. This is perhaps due to analysts having a shorter history of financial information on which to base their forecasts for high growth, but smaller, younger firms. None of the managerial power variables is significantly associated with forecast error. The results for the control variables are the same as discussed previously with the exception that prior year's leverage (LEVERAGE) which was insignificant in the full sample, is now positively associated with forecast error, suggesting that it is relatively more difficult to forecast earnings for smaller firms as their leverage increases.

Overall the results suggests that while analysts may not have fully incorporated the information contained in 'traditional' inputs to analysts' forecasts for small firms, they may be correct if they strategically (i.e. knowingly) do not incorporate managerial power measures into their EPS estimates for small firms. Thus it appears that managerial power measures as potential sources of incremental information that could improve analysts' forecasts appear not to hold for small firms.

To triangulate this result, I compare a restricted version of Equation 4 (without the managerial power variables) to an unrestricted version (with the managerial power variables). If the corporate governance variables are not informative to analysts' forecasts accuracy, then these variables should not be significant. Alternatively, if they are significant, their explanatory power should be smaller than that for large firms if managerial power is more important for large than for small firms, and vice versa, otherwise. The F-test of the null that each of the managerial power variables has a coefficient equal to zero cannot be rejected at the

.01 level (see Table 6)[14]. This suggests that managerial power is ***not*** important in explaining analysts' forecast for small firms.

Test of H2: Large Firms

If analysts use prior earnings in their EPS estimates, it is possible that they do not efficiently extract all the information contained therein, hence the positive association with absolute forecast errors (Table 7). The seemingly puzzling negative association between growth and forecast errors in the full sample is apparently due to the effect of large firms in the sample. For large firms, the growth prospects measure (MTB), is negatively associated with forecast errors. This is logical in that large firms tend to be older, and so analysts forecasting for older, high growth firms, have a longer history of earnings on which to base their forecast, helping reduce their EPS forecast errors (the opposite effect on forecast errors of the same variable for small firms).

Compared to the small firms sub-sample, a similarly interesting difference for large firms is that the absolute value of discretionary accruals is associated with smaller forecast errors (the opposite effect for small firms). A potential explanation for the differential effect of earning quality (EQ) on the two types of firms is that larger, older firms are better able to use discretionary accruals to manage EPS toward analysts' consensus forecasts, especially since large firms would have more levers to pull to meet earnings expectations.

However, unlike small firms, all the managerial power variables are positively associated with absolute forecast error. Similar to small firms, the control variables capturing leverage (LEVERAGE), losses (LOSSYR) and size (ASSETS) are positively associated with forecast errors. Like small firms, the

[14] The F-test comparing the two models has numerator degrees of freedom equal to the number of restrictions in the second model (i.e. the model with MP coefficients assumed to be zero), two, and the denominator degrees of freedom equal to the sample size less the number of estimators in the full model, nine (e.g. Hamilton, 1992).

number of forecasts is negatively associated with forecast error, suggesting that as the number of estimates increase analysts tend to get closer to the correct earnings forecast (as discussed earlier). Both measures of managerial power, management's voting power on the board (VOTE) and CEO power (CEOISCHAIR) are positively associated with forecast error. The positive coefficients on the managerial power variables suggest that overly powerful management – is associated with less efficient analysts' forecasts for large firms.

To confirm these results, a restricted model of Equation 4 (with managerial power variables set to zero) is compared against an unrestricted model. The null that each of the managerial power variables has a coefficient equal to zero is rejected at the .01 level.

Collectively, the results for both small and large firm sub-samples suggest that firm size is an important determinant of the informativeness of managerial power to analysts' EPS forecast accuracy, supporting H2. While managerial power is not informative to analysts' forecasts accuracy for small firms, it is for large firms. Particularly, high managerial power is positively associated with higher analysts' forecast errors and vice versa for large firms.

Discussion of Test of H2

In untabulated results, I confirm that none of the managerial power variables are significant as inputs to analysts' one year ahead forecast for small firms but are significant for large firms. In that regression, the dependent variable is one-year-ahead EPS forecasts, while the independent variables are the same as those in Equation 4.

The result for small firms is straightforward. Managerial power measures are largely not informative to analysts' forecast accuracy. However, the result for large firms suggests that managerial power does incrementally help explain analysts' forecast accuracy. In particular though the incremental explanatory power may seem small, a statistical comparison of a model with

managerial power variables and one without them is highly significant, suggesting that the results for large firms are nontrivial. No such strong result was found for small firms.

A potential criticism of this result is that forecast accuracy may not be the sole goal of analysts[15]. For example, it is possible that analysts prefer accuracy of their price forecasts to accuracy of EPS forecasts. To the extent that accuracy of EPS forecasts detracts from accuracy of their share price forecasts, the analysts would rationally discount inaccuracy of his or her EPS forecast in favor of greater accuracy of his or her share price forecast. Still, as an important product of analysts' work, it is not sufficient that analysts' EPS forecasts are influenced by managerial power, but also that the influence is differentially important depending on firm size. Furthermore, since earnings forecasts are typically inputs to stock price forecasts, the joint effects of the two goals on forecast error are not easily separable especially when the more important objective function of the analyst (stock price forecast or EPS forecast accuracy) is unknown *a priori*.

Another potential criticism is that while the forecast errors explained by the managerial power variables may be statistically significant, they are largely not economically significant. To address this, I estimate the proportion of forecast errors that the managerial power variables represent for large firms. The simple average forecast error for large firms is $.16 (average ABSFCERROR in last column of Panel B of Table 3). The sum of the coefficients of the managerial power variables ($.021) for the large firms sub-sample as a percentage of the mean forecast errors is 13%, a nontrivial error margin. This suggests that the contribution of the measures of managerial power to forecast error is economically significant. Further, forecasters can improve their

[15] In their test of how important forecast accuracy might be to analysts, Mikhail et al. (1999) define analysts' performance in terms of not only forecast accuracy, but also, profitability of stock recommendations. This suggests that stock price forecast accuracy might be of equal or greater importance to analysts.

estimates by finding ways to extract more information from the managerial power measures for large firms.

Additional analysis – Potential interactive effect of growth and managerial power

One could argue that a measure of growth prospects can better capture firm maturity than firm size. To address this, I interact the measure of growth prospects, MTB (lagged market-to-book) with the managerial power variables and re-estimate Equation 4 for the small and large firm sub-samples. I use the sub-samples for this additional analysis because MTB is not significant in the combined sample, and because of the different information and agency environments, the interpretations for the coefficients would be different for the two types of firms[16].

In untabulated results the effect of managerial power on analysts' earnings forecast errors for both the small and large firm subsamples are unchanged when the managerial power variables are each interacted with the measure of growth prospects, MTB. Though the MTB main effect remains significant in the small firms subsample, its interaction with the two managerial power variables are each not significant. For the large firms subsample, the main effect of MTB remains insignificant. The results of interaction of the managerial power variables and MTB for the large firms subsample are equally not significant suggesting that growth

[16] For example, it is difficult to forecast earnings for high growth, or young firms (e.g. more variability versus more stable, mature firms), thus there will be a positive association with forecast errors for such firms. However, the MP variables are posited to be not very important for such firms, diminishing the positive association of the interaction with analysts' earnings forecast errors. For low growth firms, MP is hypothesized be more positively related with forecast error, leading to a positive association between the interaction of MTB and the MP variables and analysts' earnings forecast errors. However, low growth also signals maturity, and more stable earnings that are easier to predict, which should result in a negative association of the interaction term with forecast errors.

prospects do not necessarily exacerbate or moderate the effect of managerial power on analysts' earnings forecast errors.

V. SUMMARY AND CONCLUSION

Using corporate governance mechanisms that focus on managerial power, I test whether managerial power measures are more likely to inform the accuracy of analysts EPS estimates for large or small firms. Using tests of variables that are known to influence analysts' earnings forecast accuracy, the results of this research suggest that considering and incorporating managerial power measures are more likely to improve analysts' EPS forecasts for large firms than for small firms. In particular strong managerial power diminishes forecast accuracy for large firms, but does not influence forecast accuracy for small firms.

A potential explanation for this result is the notion that a powerful CEO whose interests are not well-aligned with those of shareholders can exploit that power to help bias analysts forecasts in the direction of his interests. Those interests tend to include earning bonuses, issuing stocks at favorable prices, or exercising options (Richardson, Teoh and Wysocki 2004**)**.

Motivated to win investment banking and trading business for their firms, analysts do not always remove the bias implicit in the information they gather from management (e.g., Michaelly and Womack 1999). Some researchers have also argued that analysts may not fully appreciate the information implicit in the time series properties of discretionary accruals (a measure of earnings management) (e.g., Collins and Kothari 1989; Dechow and Schrand 2004), resulting in larger forecast errors. Theoretically, strong corporate governance mechanisms can help constrain management's ability to manage earnings and misinform analysts about their firms' earnings potential.

Since the CEO is the top management person in the firm, he has the most control over the information relayed to analysts. I therefore focused on the managerial power dimension of corporate governance to assess how constrains thereon or lack of such

constrains might influence analysts' forecast error. Accounting for the differential information environments and agency issues of small and large firms, I find that while managerial power is influential in determining analysts' one year ahead forecast errors for large firms, it is not for small firms.

The result of this research suggests that other corporate governance dimensions may be differentially important in small and large firms, and future research into this possibility may be fruitful. Since the dataset used in this study comes from a broad spectrum of industries (54), I did not attempt to analyze the data by industry. Future research might benefit from further inquiry to test for the importance of managerial power measures to analysts' forecasts in a few industries where managerial power may theoretically be of great or minimal importance. For example, is managerial power differentially important in large and small financial institutions, and how is managerial power related to the recent turmoil in the financial industry? Another potential extension is to evaluate the relative importance of corporate governance in regulated versus unregulated industries. To make such a study more compelling, the industries should be fairly similar. The challenge then, is to find similar industries -- one regulated, the other, not.

REFERENCES

Ball, R. and E. Bartov. 1996. How Naïve is The Stock Market's Use of Earnings Information? *Journal of Accounting and Economics* 21 (3): 319-337.

Beasley, M. S. 1996. An Empirical Analysis of the Relation between the Board of Director Composition and Financial Statement Fraud. *The Accounting Review* 71 (4): 443-465.

Belsley, D. A., E. Kuh, and R. E. Welsch. 1980. Regression Diagnostics: Identifying Influential Observations and Sources of Colinearity. John Wiley and Sons, 1980.

Bradshaw, M. T., Richardson, S. A., and Sloan, R. 2001. Do Analysts and Auditors Use Information in Accruals?

Journal of Accounting Research 39 (1):45–74.

Bradshaw, M. T., Richardson, S. A., and Sloan, R. 2003. Pump and Dump: An Empirical Analysis of the Relation between Corporate Financing Activities and Sell-Side Analyst Research. Working paper, University of Michigan.

Brealey, R. A. and Myers, S. C. 1996. Principles of Corporate Finance, McGraw Hill Companies, Inc.: P67.

Cheng, Q. and T. D. Warfield. Equity incentives and earnings management. *The Accounting Review* Vol. 80(2): 441-476.

Collins, D. W., and S.P. Kothari. 1989. An Analysis of Intertemporal and Cross-sectional Determinants of Earnings response coefficients. *Journal of Accounting and Economics*, Vol. 11 (2/3):143–181.

Damodaran, A. 1994. Damodaran on Valuation: Security Analysis for Investment and Corporate Finance. John Wiley & Sons, Inc.: 98-102.

Dechow, P. M., R. G. Sloan, and A. P. Sweeney. 1995. Determining Earnings Management. *The Accounting Review*, 70 (2):193-225.

Dechow, P. M., R. G. Sloan, and A. P. Sweeney. 1996. Causes and Consequences of Earnings Manipulation: An Analysis of firms Subject to Enforcement Actions by the SEC. *Contemporary Accounting Research*, Vol. 13, (1):1-36.

Dechow, P. M and I. D. Dichev. 2002. The Quality of Accruals and Earnings: The role of accrual estimation errors. *The Accounting Review*, Vol. 77(Supplement):35-69**.**

Dechow, P. M and C. M. Schrand. 2004. Earnings quality. Research Foundation of the CFA Institute: 5-16.

Denis, D. J. and A Sarin. 1999. Ownership and Board Structures in Publicly Traded Corporations. *Journal of Financial Economics* 52:187-223.

Duru, A. and Reeb, D. 2002. International Diversification and Analysts' Forecast Accuracy and Bias. *The Accounting Review* 77(2):415-433.

Easterwood, J. C. and S. R. Nutt. 1999. Inefficiency in Analysts' Earnings Forecasts: Systematic Misreaction or Systematic Optimism? *Journal of Finance*, Vol. LIV, (5): 1777-1797.

Hamilton, L. C. 1992. Regression with Graphics: A Second Course in Applied Statistics. Daxbury Press, Belmont CA: 80-81.

Hart, O. 1995. Corporate Governance: Some Theory and Implications. *The Economic Journal* Vol. 105 (430):678-689.

Hayn, C. 1995. The Information Content of Losses. *Journal of Accounting and Economics* Vol. 20, No.2:125-153.

Holthausen, R. W., D. F. Larcker, and R. G. Sloan. 1995. Annual Bonus Schemes and the Manipulation of Earnings. *Journal of Accounting and Economics*, Vol. 19, (1):29–74.

Kasznik, R. 1999. On the Association between Voluntary Disclosure and Earnings Management, *Journal of Accounting Research* 37, 57-82.

Lang, M. and R. Lundholm. 1993. Cross-sectional Determinants of Analyst Ratings of Corporate Disclosures. *Journal of Accounting Research,* 31 (2):246-271.

Lang, M. H. and R. J. Lundholm. 1996. Corporate Disclosure Policy and Analyst Behavior. *The Accounting Review*, Vol.71 (4):467-492.

Lang, M. H., K.V. Lins, and D. P. Miller. 2003. ADRs, Analysts, and Accuracy: Does Cross Listing in the United States Improve a Firm's Information Environment and Increase Market Value? *Journal of Accounting Research* Vol. 41 (2):317-345.

Larcker, D., S. Richardson, and I. Tuna. 2007. Corporate Governance, Accounting Outcomes, and Organizational Performance. *The Accounting Review* Vol. 82 (4):963-1008.

Michaelly, R. and K. Womack. 1999. Conflict of Interest and the Credibility of Underwriter Analyst Forecasts. *Review of Financial Studies Vol. 12* (1999): 653-686.

Mikhail, M. B., B. R. Walther, and R. H. Willis. 1997. Do Security Analysts Improve Their Performance With

Experience? *Journal of Accounting Research*, Vol. 35:131-157.

Mikhail, M. B., B. R. Walther, and R. H. Willis. 1999. Does forecast accuracy matter to security analysts? *The Accounting Review*, Vol. 74 No. (2): 185-200.

Mikkelson, W.H., M. M. Partcha, and K. Shahb. 1997. Ownership and Operating Performance of Companies That Go Public. *Journal of Financial Economics* Vol 44, (3):281-307.

Myers, L. 2001. On the Association between Governance and Control Mechanisms and Income-decreasing Earnings Management. Working paper, University of Michigan.

Richardson, S., S. H. Teoh, and P. D. Wysocki. 2004. The Walkdown to Beatable Analyst Forecasts: The Roles of Equity Issuance and Insider Trading Incentives. 2004. *Contemporary Accounting Research*, Vol. 21 (4): 885-924.

Richardson, S., A. I. Tuna, and M. Wu. 2002. Predicting earnings management: The Case of Earnings Restatements. Working Paper, University of Pennsylvania.

Skinner, D. J., and R. G. Sloan. 2002. Earnings Surprises, Growth Expectations, and Stock Returns or Don't Let an Earnings

Torpedo Sink Your Portfolio. *Review of Accounting Studies* Vol. 7, (2/3): 289–312.

Table 1,	
Variable	**Variable Description**
ABSFCERROR	Absolute value of actual EPS - Mean EPS
ACTUAL	Actual EPS
ABSDACC	Absolute Modified Jones Model discretionary accruals
MEANEST	Mean analysts' EPS estimate
NUMEST	Number of analysts' estimates
EPS	One year lagged EPS (accrual income per share + cash flow income per share)*
MTB	Lagged Market to Book (MTB) a measure of growth prospects; Market Value of Equity (MVE) data 25 X data 199, divided by book value of equity, data 216.
ASSSETS	Lagged total assets, Compustat data 6.
MVE[&]	Market value of equity, Compustat data 25 (shares outstanding) X data 199 (year-end stock price).
LEVERAGE	Lagged leverage, data 9 + data 34 divided by MVE
LOSSYR	1 if a firm made a loss in the year, 0 otherwise
*Cash flow income per share is cash flow from operations, data 308 - cash flow from extraordinary items, data 124, divided by common shares outstanding for calculating basic EPS, data 54. Accrual income per share is (data 123 - data 308 -data 124) / data 54. Data 123 is income before extraordinary items taken from the Statement of Cash Flows. This measure uses methods consistent with how cash flow income and accrual income are calculated in Dechow and Dichev (2002). [&] This is not used as a control because it is related to the market index to which a firm belongs.	

Table 2, Panel A: Summary Statistics for Final Sample with Managerial Power (MP) Variables*

	N (firm-years)	25th %ile	Mean	Median	75th %ile	Std Dev	Variable Description
ABSFCERROR	7744	$0.04	$0.22	$0.10	$0.23	$0.44	Absolute value of actual EPS - Mean EPS.
ACTUAL	7744	$0.5	$1.15	$1.03	$1.72	$2.56	Actual EPS
'Traditional' inputs to analysts' forecasts							
MEANEST	7744	$0.57	$1.26	$1.08	$1.77	$1.83	Mean analysts' EPS estimate.
ABSDACC	7744	0.04	0.21	0.09	0.22	0.34	Absolute value of discretionary accruals
EPS	7744	$0.47	$1.22	$1.22	$2.03	$1.85	Lagged earnings per share
MTB	7744	1.64	3.53	2.49	4.03	3.64	Lagged market-to-book ratio
NUMEST	7744	4.64	10.24	8.50	14.17	7.36	Number of analysts' estimates.
Managerial Power (MP) Variables							
CEOISCHAIR	7744	0.00	0.74	1.00	1.00	0.44	1 if the CEO is the chairman, 0 otherwise.
VOTE	7744	0.00	10.82	3.20	12.50	18.11	% of management's voting shares.
Control Variables							
LEVERAGE	7744	3.10%	36.20%	16.26%	39.78%	82%	Lagged leverage
ASSETS	7744	$6.18B	$7.20B	$7.03B	$8.03B	$1.41B	Lagged total assets.
LOSSYR	7744	0.00	0.16	0.00	0.00	0.37	1 if a firm made a loss in the year, 0 otherwise.

* A more detailed description of all variables is in Table 1.

Table 2, Panel B* **Pearson Correlation Coefficients (P-values on second row)**

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1, ABSFCERROR	1	0.006	-0.050	**-0.236**	-0.105	-0.020	-0.093	0.048	0.013	0.030	0.194	0.296
		0.596	<.0001	**<.0001**	<.0001	0.075	<.0001	<.0001	0.269	0.009	<.0001	<.0001
2, ABSDACC		1	-0.040	-0.029	0.010	-0.015	0.084	0.012	-0.027	-0.047	-0.077	0.016
			0.001	0.010	0.383	0.175	<.0001	0.312	0.016	<.0001	<.0001	0.157
3, MEANEST			1	**0.886**	0.075	**0.475**	0.010	0.128	0.007	**0.228**	-0.066	**-0.286**
				<.0001	<.0001	**<.0001**	0.368	<.0001	0.544	**<.0001**	<.0001	**<.0001**
4, ACTUAL				1	0.072	0.366	0.027	0.087	0.003	0.154	-0.072	-0.280
					<.0001	<.0001	0.019	<.0001	0.814	<.0001	<.0001	<.0001
5, NUMEST					1	0.110	**0.299**	0.166	-0.166	**0.612**	-0.111	-0.088
						<.0001	**<.0001**	<.0001	<.0001	**<.0001**	<.0001	<.0001
6, EPS						1	0.043	0.100	-0.004	0.247	-0.146	-0.328
							0.000	<.0001	0.737	<.0001	<.0001	<.0001
7, MTB							1	0.056	0.007	0.060	-0.187	-0.097
								<.0001	0.559	<.0001	<.0001	<.0001
8, CEOISCHAIR								1	-0.138	**0.353**	0.047	-0.035
									<.0001	**<.0001**	<.0001	0.002
9, VOTE									1	-0.152	-0.014	-0.042
										<.0001	0.213	0.000
10, ASSETS										1	0.159	-0.090
											<.0001	<.0001
11, LEVERAGE											1	0.177
												<.0001
12, LOSSYR												1

All variables are defined in Panel A.

Table 3, Panel A. Averages by market index group.

	EX	SM	MD	SP
N (firm-years)	2,302	1,792	1,512	2,138
MEANEST	$1.07	$1.08	$1.31	$1.59
ABSFCERROR	$0.34	$0.20	$0.17	$0.15
ABSDACC	0.18	0.22	0.22	0.23
EPS	$0.80	$1.04	$1.32	$1.76
MTB	3.32	2.54	3.15	4.85
LOSSYR	0.26	0.16	0.12	0.08
CEOISCHAIR	0.72	0.65	0.74	0.82
VOTE	10.40%	13.02%	13.00%	7.91%
NUMEST	9.34	5.38	8.64	16.41
LEVERAGE	50%	32%	30.37%	29%
ASSETS	$6.90B	$6.12B	$7.06B	$8.54B
MVE	$6.83B	$6.26B	$7.356B	$9.11B

All numbers represent 1996-2002 means. EX = firms not traded on the major indexes. SM = firms in the SP Small Cap index. MD = firms in the S&P Mid Cap index. SP = firms in the S&P 500 index.

Table 3, Panel B. Averages by firm size group.

	Small firms	Large firms
N (firm-years)	4,094	3,650
MEANEST	$1.08	$1.47
ABSFCERROR	$0.28	$0.16
ABSDACC	0.20	0.23
EPS	$0.91	$1.58
MTB	2.98	4.14
LOSSYR	0.22	0.10
CEOISCHAIR	0.69	0.79
VOTE	11.54%	10%
NUMEST	7.60	13.19
LEVERAGE	42.2%	29.43%
ASSETS	$6.56B	$7.93B
MVE	$6.58B	$8.38B

All numbers represent 1996-2002 means. Small firms are composed of EX (firms not traded on the major indexes) and SM (firms in the S&P 600 Small Cap index). Large firms are composed of MD (firms in the S&P 400 Mid Cap index) and SP (firms in the S&P 500 index).

$ABSFCERROR_t = |(EPS_t – MEANEST_t)|$ where MEANEST is mean consensus forecast EPS_t is obtained by taking the mean of all forecasts by all analysts for a firm, i, for each year, t. EPS_t is the actual earnings per share realized for firm i, at time t, the year for which an analyst forecasts a firm's earnings. ABSDACC=Jones model absolute discretionary accruals. EPS=Lagged actual earnings per share. MTB=lagged market-to-book ratio. LOSSYR=1 if a loss year, 0 otherwise. CEOISCHAIR=1 if the CEO is also chairman, 0 otherwise. VOTE=management's voting power on the board. . NUMEST=Number of analysts' estimates. LEVERAGE=debt-to-equity ratio. ASSETS=Lagged total assets. MVE=Lagged market value of equity (not used in empirical models).

Table 4-Summary Statistics by Year and Size Group

	Means				25th Percentile				75th Percentile			
	1996-2002		2003-2006		1996-2002		2003-2006		1996-2002		2003-2006	
	small firms	large firms	small firms	large firms	small firms	large firms	small firms	large firms	small firms	large firms	small firms	large firms
N (firm-years)	2,773	2,231	1,321	1,419	2,773	2,231	1,321	1,419	2,773	2,231	1,321	1,419
MEANEST	$1.05	$1.28	$1.14	$1.78	$0.47	$0.59	$0.47	$0.92	$1.59	$1.73	$1.60	$2.21
ABSFCERROR	$0.31	$0.16	$0.22	$0.15	$0.06	$0.03	$0.05	$0.04	$0.34	$0.18	$0.23	$0.17
ABSDACC	0.18	0.20	0.25	0.26	0.04	0.04	0.04	0.05	0.20	0.22	0.21	0.27
EPS	$0.92	$1.56	$0.89	$1.60	$0.25	$0.80	$0.23	$0.79	$1.75	$2.38	$1.69	$2.29
MTB	3.15	4.56	2.62	3.49	1.39	2.07	1.45	1.90	3.37	5.52	2.96	4.17
LOSSYR	0.24	0.11	0.17	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CEOISCHAIR	0.69	0.78	0.71	0.80	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
VOTE	11.87%	10.41%	10.86%	9.41%	1.20%	0%	1.80%	0%	14.60%	11.10%	11.10%	9.30%
NUMEST	7.90	13.43	6.99	12.82	3.33	7.67	2.92	7.17	10.50	18.08	9.50	17.25
LEVERAGE	47%	29.20%	32.06%	29.86%	3.00%	4.13%	1.00%	4.40%	52.26%	33.78%	36.11%	32.29%
ASSETS	$6.60B	$7.82B	$6.48B	$8.10B	$5.74B	$6.90B	$5.82B	$7.28B	$7.22B	$8.63B	$6.95B	$8.81B
MVE	$6.53B	$8.29B	$6.70B	$8.53B	$5.70B	$7.28B	$6.13B	$7.65B	$7.21B	$9.13B	$7.20B	$9.26B

MEANEST=Mean of all analysts' one year ahead forecast for a firm. $ABSFCERROR_t = |(EPS_t - MEANEST_t)|$ where MEANEST is mean consensus forecast EPS_t is obtained by taking the mean of all forecasts by all analysts for a firm, i, for each year, t. EPS_t is the actual earnings per share realized for firm i, at time t, the year for which an analyst forecasts a firm's earnings. ABSDACC=Jones model absolute discretionary accruals. EPS=lagged actual earnings per share. MTB=lagged market-to-book ratio. LOSSYR=1 if a loss year, 0 otherwise. CEOISCHAIR=1 if the CEO is also chairman, 0 otherwise. VOTE=management's voting power on the board. NUMEST=Number of analysts' estimates. LEVERAGE=debt-to-equity ratio. ASSETS=lagged total assets. MVE=lagged market value of equity.

Table 5[&]: Test of H1.	**Both MP Variables**	**With dual CEO role only**	**With officer voting power only**
Variable	**Coefficient t statistic**	**Coefficient t statistic**	**Coefficient t statistic**
INTERCEPT	-0.152 -4.95****	-0.138 *-4.58****	-0.059 *-2.01***
ABSDACC	0.035 2.55**	0.034 2.49**	0.026 1.93**
EPS	0.022 7.84****	0.022 *7.84****	0.021 *7.5****
MTB	-0.001 -0.530	-0.001 -0.420	-0.002 -1.200
LOSSYR	0.343 25.35****	0.342 *25.29****	0.355 *26.14****
CEOISCHAIR	**0.137 8.3******	**0.142 8.92******	
VOTE	**0.001 1.99***		**0.003 *4.97*****
CEO_FIRMSIZE	**-0.054 -10.17******	**-0.056 -11.08******	
VOTE_FIRMSIZE	**0.000 -1.300**		**-0.001 *-4.56*****
LEVERAGE	0.060 9.59****	0.060 9.7****	0.064 10.21****
NUMEST	-0.007 8.05****	-0.007 *-8.31****	-0.007 *-8.45****
ASSETS	0.046 9.46****	0.045 9.31****	0.034 7.31****
N	7,744	7,744	7,744
F Value	116.99****	142.34****	129.68****
Adjusted R-Squared	0.141	0.141	0.13

Significance levels:****=.0001; ***=.001; **=.01; *=.05; @=.10.

[&] The top values are the regression coefficients and the bottom values are t-statistics.

The dependent variable is ABSFCERROR t= |(Actual EPS_t – Mean Consensus Forecast EPS_t) | and is explained in detail in Equation 2. ABSDACC=Jones model absolute discretionary accruals. EPS=Lagged earnings per share. MTB=lagged market-to-book ratio. LOSSYR=1 if a loss year, 0 otherwise. CEOISCHAIR=1 if the CEO is also chairman, 0 otherwise. VOTE=management's voting power on the board. CEO_FIRMSIZE=Interaction of CEOISCHAIR and lagged total assets (ASSETS). VOTE_FIRMSIZE=Interaction of VOTE and FIRMSIZE. LEVERAGE=debt-to-equity ratio. NUMEST=Number of analysts' estimates.

Table 6[&]: Test of H2-small firms.	**With MP Variables**	**Without MP Variables**
Variable	**Coefficient t-statistic**	**Coefficient t-statistic**
IINTERCEPT	-0.369 -7.12****	-0.360 -7.06****
ABSDACC	0.094 4.09****	0.094 4.08****
EPSH	0.011 2.41*	0.011 2.41**
MTB	0.004 1.71@	0.004 1.81@
LOSSYR	0.400 20.16****	0.399 20.15****
NUMEST	-0.014 -8.23****	-0.014 -8.45****
LEVERAGE	0.050 5.46****	0.050 5.47****
ASSETS	0.091 10.34****	0.091 10.52****
CEOISCHAIR	**0.006** **0.38**	
VOTE	**0.000** **0.92**	
N	4,094	4,094
F Value	79****	102****
Adjusted R-Squared	0.148	0.148
F^{H}_{n-K} (compares the two models)[#]	0.50	

[&]The top values are the regression coefficicents while the numbers beneath them are the t-statistics. Significance levels:****=.0001; ***=.001; **=.01; *=.05; @=.10.
This F value tests the null hypothesis that the two corporate governance coefficients are each equal to zero. The test statistic cannot be rejected at the .01 level. H=number of restrictions (2), n is the sample size, and K is the number of estimators in the full model (9) (Hamilton 1992).

The dependent variable is ABSFCERROR t= |(Actual EPS_t – Mean Consensus Forecast EPS_t) | and is explained in detail in Equation 2. ABSDACC=Jones model absolute discretionary accruals. EPS=Lagged earnings per share. MTB=lagged market-to-book ratio. LOSSYR=1 if a loss year, 0 otherwise. NUMEST=Number of analysts' estimates. LEVERAGE=debt-to-equity ratio. ASSETS=lagged total assets. CEOISCHAIR=1 if the CEO is also chairman, 0 otherwise. VOTE=management's voting power on the board.

Table 7[&]: Test of H2-large firms.

Variable	With G Variables Coefficient t-statistic	Without CG Variables Coefficient t-statistic
IINTERCEPT	-0.031 -0.940	-0.006 -0.190
ABSDACC	-0.026 -1.99*	-0.027 -2.04*
EPS	0.030 11.14****	0.030 11.23****
MTB	-0.004 -3.33***	-0.004 -3.28**
LOSSYR	0.218 13.4****	0.216 13.29****
LEVERAGE	0.053 7.21****	0.053 7.12****
NUMEST	-0.003 -3.65***	-0.003 -4.05****
ASSETS	0.018 3.8****	0.018 3.91****
CEOISCHAIR	**0.020** **1.77**[@]	
VOTE	**0.001** **2.91****	
N	3,650	3,650
F Value	50.37	63.12
Adjusted R-Squared	0.109	0.107
F^{H}_{n-K} (compares the two models)[#]	5.25**	

The top values are the regression coefficicents while the numbers beneath them are the t-statistics. Significance levels:****=.0001; ***=.001; **=.01; *=.05; @=.10.

This F value tests the null hypothesis that the two corporate governance coefficients are each equal to zero. The test statistic is rejected at the .01 level. H=number of restrictions (2), n is the sample size, and K is the number of estimators in the full model (9).

The dependent variable is ABSFCERROR t= |(Actual EPS_t – Mean Consensus Forecast EPS_t) | and is explained in detail in Equation 2. ABSDACC=Jones model absolute discretionary accruals. EPS=Lagged earnings per share. MTB=lagged market-to-book ratio. LOSSYR=1 if a loss year, 0 otherwise. LEVERAGE=debt-to-equity ratio. NUMEST=Number of analysts' estimates. ASSETS=lagged total assets. CEOISCHAIR=1 if the CEO is also chairman, 0 otherwise. VOTE=management's voting power on the board.