# Internet Appendix

For "Internal Corporate Governance, CEO Turnover, and Earnings Management"
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This Appendix reports on supplemental and robustness tests to accompany the results in "Internal Corporate Governance, CEO Turnover, and Earnings Management." Section 1 reports on the distribution of the earnings management variable and the correlations between the test and control variables used in throughout the paper. Section 2 reports the results of tests in which we examine subsamples in which the firm did not subsequently restate earnings or attract SEC sanctions or other investor attention. Section 3 reports on tests in which we include additional control variables. Section 4 reports on tests that use alternate measures of firm performance. Section 5 reports on tests that use alternate measures of earnings management. Section 6 reports on an additional test that seeks to control for possible endogeneity based on propensity score matching. Section 7 reports the results of tests that examine how forced CFO turnover is related to earnings management, and how earnings management relates to the interaction of CEO and CFO turnover. Section 8 reports the results of three subsidiary tests.

Throughout these sensitivity tests, our central finding – that earnings management is related to forced CEO turnover but not to voluntary CEO turnover – persists. In the paper we examine possible explanations of this central result. The result, however, is robust and consistent throughout the data.

## 1. Additional descriptive statistics

Table IA.1 reports the pairwise correlations of the variables used in our empirical tests. Most absolute correlations are lower than 0.25. The correlation between earnings management and the industry-adjusted firm return is 0.08, and the correlation between earnings management and operating return on assets is –0.05. Thus, earnings management, as measured by abnormal accruals, does not appear to be a proxy for firm performance. Earnings management has a relatively high correlation with stock return volatility (0.24), firm size (–0.16), and the market to book ratio (0.18).

In terms of descriptive statistics, the mean and median performance-adjusted absolute discretionary accruals for the sample are 0.076 and 0.050, respectively. The 25th percentile and 75th percentile are 0.021 and 0.109, respectively, while the standard deviation is 0.071. Figure 1 illustrates the extent of earnings management in the years before the CEO's turnover for both the forced and voluntary sub-samples. The CEOs are lined up in event time, with zero being the year of the CEO turnover, and the mean absolute abnormal accruals are calculated across all CEOs who were in office each year before their turnover. The mean abnormal accruals are consistently higher for the ousted CEOs than for CEOs who left voluntarily. Absolute abnormal accruals also show an upward trend in the years immediately preceding the CEO turnover, especially for the dismissed CEOs.

## 2. Additional sub-sample tests

We conducted several tests to investigate whether the results are more prominent in some subsamples than in others. Table IA.2 and Table IA.3 are similar to Tables 4 and 5 in the paper, except that we exclude events in which the firm issued an earnings restatement or faced SEC sanctions before the CEO turnover. Table IA.2 reports estimates of the competing risks Cox hazard regressions and Table IA.3 reports the Tobit regressions for CEO Tenure. The results are virtually identical to those reported in Tables 4 and 5. This indicates that the paper's results are not driven by the subset of cases in which the firm had to restate earnings or was subject to SEC sanctions.

It is possible that CEOs tend to be forced out because they attract unwanted attention from whistle-blowers, investors, or the media. To investigate this possibility, Tables IA.4 and IA.5 further exclude events that are identified in the Dyck, Morse, and Zingales (2010) sample as having been flagged by the press, analysts, investors, or whistleblowers, prior to the CEO turnover. (We thank

Alexander Dyck, Adair Morse, and Luigi Zingales for making these data available.)  Again, the results are similar to those reported in Tables 4 and 5 of the paper.  So even among firms that did not attract public attention or SEC sanctions, or had to restate earnings, aggressive earnings management is associated with an increased likelihood of forced CEO turnover.

**3.  Additional control variables**

We examined whether the effect of earnings management on forced turnover is affected by governance quality, the costs of earnings management to the firm, and the passage of SOX.  Table IA.6 reports results that include the G-index and the interaction of the G-index with earnings management as control variables.  As reported in the paper, the G-index coefficient is not in general statistically significant.  The interaction term is negatively related to the hazard rate in the forced turnover specifications, and is statistically significant at the 10% level in three of the four models.  Because a larger G-index is associated with lower governance quality, this indicates that the probability of being fired for earnings management is lower in poorly governed firms.

Forced turnover can also be related to how earnings management imposes costs on the firm.  We use the market-to-book ratio as a measure of the firm's growth options.  We conjecture that the costs of obscure financial reporting are particularly large for firms with less tangible assets, suggesting that the impact of earnings management on the likelihood of a forced turnover will increase with the market-to-book ratio.  However, the results of this test, which are reported in Table IA.7, are not consistent with this conjecture, as the interaction of earnings management with the market-to-book indicator (the indicator equals one when the market-to-book ratio is in the highest quartile for the year and zero otherwise) is statistically insignificant in all models.

In Table IA.8 we construct an industry's "external need for funds." as follows. Sourcing the data from SDC's New Issues database, we first cumulate the gross proceeds via equity financing, by industry (at the 2-digit SIC level) in each year (starting from 1960). Second, we cumulate the total assets in an industry (again at the 2-digit SIC level) in each year for the firms in the Compustat database. Finally, we cumulate both the gross proceeds and total assets through the years by each industry and create the ratio of cumulative gross proceeds and cumulative assets. This ratio is for each industry and year. The cumulative nature of the ratio adjusts for fluctuating stock market conditions that may positively or adversely affect stock offerings in certain years and normalizing the cumulative gross proceeds by cumulative assets measures the industry's reliance on external financing to fund its assets. For each firm-year depending on the firm's industry, the firm's reliance on external financing is measured and the external financing indicator equals one if the external financing variable is in the highest quartile for the year and zero otherwise. But this variable also is not significantly related to how earnings management triggers forced turnovers.

In Table IA.9 we examine the effect of earnings management before and after passage of SOX. The idea is that we can view SOX as an exogenous increase in governance quality for at least some firms. It makes sense that such an exogenous increase should increase the marginal effect of earnings management on the probability of forced turnover. Using terms from section 2 of the paper, $\partial^2\pi/\partial e\partial g > 0$. The point estimates on the interaction of earnings management with the post-SOX dummy variable in Table IA.9 are largely consistent with this intuition. The interaction term is not significant in any of the models, however.

To test whether operating earnings volatility accounts for our main finding – that forced turnover is associated with earnings management – we conducted tests that include operating earnings volatility as a control variable. As reported in Table IA.10, the main results from the paper remain unchanged.

In Table IA.11 we control for the impact of special items, extraordinary items, and restructuring charges. Given the nature of these items, we split the accruals by sign into income-increasing and income-decreasing (although results are robust without the split). Our finding that the magnitude of earnings management affects the likelihood of forced CEO ouster but the direction in which earnings are managed does not, remains unchanged.

Throughout these tests, the introduction of additional control variables does not significantly alter the point estimates or the p-values of the earnings management variable. The probability and speed of forced turnover is positively related to earnings management.

## 4. Additional controls for, and measures of, firm performance

The paper reports a number of tests that probe whether our results are driven by firm performance. As with previous research, we find that the probability of forced CEO turnover is negatively related to firm performance, especially recent stock price performance. To control for possible non-linearity in the relation between performance and forced turnover, we include squared and cubic terms for the performance variables. The results are in Tables IA.12. Again, the main results are unaffected.

We also examined whether the results are sensitive to the specific measurement of firm performance. We replicated all tests using equal weighted and value weighted market-adjusted firm returns over the 24 month period (rather than 12 months) preceding the CEO turnover. The results are similar to those in the paper. The results are robust to using industry-adjusted firm returns using either the Fama-French 48 industry portfolios or 2-digit SIC codes to form industries, or to using market-adjusted rather than industry-adjusted returns. Including together all three returns (firm, industry, and market) measured over the 12 month period also yields similar results regarding earnings management and forced turnover.

In another robustness test, we explicitly account for the relation between firm performance and earnings. Following Engel, Hayes and Wang (2003), we compute a measure of earnings timeliness as the $R^2$ from a firm-specific reverse regression of annual earnings on contemporaneous stock returns. $R^2$ measures the degree of association between earnings and stock returns. We then estimate the probability of forced CEO turnover after including three additional variables: i) $R^2$, ii) market-adjusted firm return interacted with $R^2$ and iii) ROA interacted with $R^2$. We find results consistent with those reported in Engel et al. (2003); as earnings timeliness captured by $R^2$ increases, an increase in accounting earnings (ROA) reduces the probability of forced CEO turnover. Nevertheless, earnings management continues to be robust in explaining the likelihood of forced CEO turnover.

As another robustness check on measuring firm performance, we use a two-stage regression approach. The first stage regression decomposes firm performance into a systematic component caused by the market and industry performance, and a firm-specific component that arguably reflects CEO ability. In the second stage, we analyze the probability of a forced CEO turnover using the firm-specific component of performance derived from the first stage. The results remain qualitatively unchanged from those in the paper. Abnormal accruals continue to be positively related to the likelihood of forced CEO turnover in all model specifications, including the hazard framework.

Finally, we consider the possibility that earnings manipulation gets managers into trouble primarily when they miss, or otherwise would miss, earnings expectations. Mergenthaler, Rajgopal, and Srinivasan (2009), for example, find that the likelihood of forced CEO turnover increases when a firm misses its analyst consensus quarterly earnings forecast. For each CEO-year, we aggregate the number of quarters the firm missed the median quarterly analyst estimate and relate it to the likelihood of CEO turnover. In untabulated results, we find the likelihood of CEO ouster is positively related to the number of quarters the firm misses the consensus earnings forecast; however, earnings management continues to be robust in explaining the likelihood of forced CEO turnover. In Table IA.13, we also measure the extent of the miss (the difference in actual and consensus earnings forecast) in each quarter and aggregate the misses across the four previous quarters. A positive number for the difference in actual and forecast earnings denotes the firm outperformed analysts' expectations and a negative number denotes the opposite. Consistent with Mergenthaler et al. (2009), the likelihood of forced ouster is positively related to the incidence and the amount by which the firm misses the median forecast. The effect of earnings management on forced turnover, however, remains the same as in previous tests.

## 5. Alternate measures of earnings management

In addition to the robustness tests reported in the paper, we examined the sensitivity of our main finding – that earnings management is related to forced turnover but not to voluntary turnover – to our measures of earnings management. The results are extremely robust to alternative measures.

Our main measure of earnings management is the performance-augmented modified Jones model. One alternate is the modified Jones model without the performance adjustment. A second alternate is the Jones model itself:

$$TA_{j,t} = \varphi_{0,j} + \varphi_{1,j}(1/Assets_{j,t-1}) + \varphi_{2,j}\Delta Rev_{j,t} + \varphi_{3,j}PPE_{j,t} + \upsilon_{j,t}$$

As a third alternate we used the Dechow and Dichev (2002) model, augmented with the fundamental variables from the modified Jones model (see McNichols, 2002), namely, PPE (property, plant and equipment) and change in revenues. The specification of the Dechow-Dichev model is as follows (all variables are normalized by total assets):

$$TCA_{j,t} = \varphi_{0,j} + \varphi_{1,j}(1/Assets_{j,t-1}) + \varphi_{2,j}CFO_{j,t-1} + \varphi_{3,j}CFO_{j,t} + \varphi_{4,j}CFO_{j,t+1} + \varphi_{5,j}\Delta Rev_{j,t} + \varphi_{6,j}PPE_{j,t} + \upsilon_{j,t}$$

Here, $TCA_{j,t} = \Delta CA_{j,t} - \Delta CL_{j,t} - \Delta Cash_{j,t} + \Delta STDEBT_{j,t}$ = total current accruals in year t; $CFO_{j,t} = NIBE_{j,t} - TA_{j,t}$ = firm j's cash flow from operations in year t; $NIBE_{j,t}$ = firm j's net income before extraordinary items (Compustat item 18) in year t; and $TA_{j,t} = \Delta CA_{j,t} - \Delta CL_{j,t} - \Delta Cash_{j,t} + \Delta STDEBT_{j,t} - DEPN_{j,t}$ = firm j's total accruals in year t. Jones, Krishnan and Melendrez (2008) present evidence suggesting that the Dechow and Dichev (2002) model augmented with variables from McNichols (2002) has more explanatory power for detecting fraudulent earnings beyond a simple measure of total accruals.

Hribar and Collins (2002) point out that such events as mergers and acquisitions can create problems for traditional measures of earnings management. As a fourth alternate, we use their measure of discretionary accruals based on data from cash flow statements rather than balance sheets. Total accruals are calculated as the difference between reported earnings before extraordinary items and discontinued operations (Compustat item 123) and operating cash flows from continuing operations (Compustat item 308 less Compustat item 124), divided by lagged total assets.

For illustration, the results of some of these robustness tests are reported in this Appendix. For example, Table IA.14 presents the results using the accruals data from cash flow statements (as in Hribar and Collins, 2002). Table IA.15 reports results in which earnings management equals the magnitude of accruals scaled by the absolute value of the firm's cash flow from operations (Leuz et. al., 2003).

Table IA.16 reports results when the earnings management variable is truncated at the 5% and 95% levels. The results are similar to the main results, indicating that the results are not driven by a few extreme observations in the forced turnover sample. Tables IA.17 and IA.18 present the results for performance-adjusted accruals that subtract the mean (or the median) discretionary accruals for each performance decile.

All of these alternate measures of earnings management yield inferences that are qualitatively the same as those reported in the paper: forced turnover is positively related to earnings management, while voluntary turnover is not. Re-estimating each of these models without an intercept term also has no substantive impact on our inferences.

## 6. Propensity score matching

We also used propensity score matching to evaluate the differences between forced, voluntary, and no-turnover events. We created comparable samples of voluntary turnovers and non-turnovers using propensity scores, and then contrasted these two comparable samples to the sample of forced CEO turnovers.

As the first step in propensity score matching, we estimated a logistic regression predicting whether an event involves a forced or a voluntary turnover. The dependent variable equals 1 if the turnover is forced and 0 otherwise. The explanatory variables used in the matching criteria are all the right hand side variables in Model 2 of Table 4 in the paper, including year and industry indicators but excluding the earnings management variable.

To match the 'treatment' and 'control' samples (forced and voluntary turnovers), we first calculate the propensity scores that are derived from the logistic model. Next, we stratify all CEO turnovers into blocks defined by quantiles (for example, quartiles or deciles) of the propensity score distribution, and perform balancing tests for each variable specified in the logistic regression model as well as for the propensity scores themselves. These balancing tests are based on differences in means t-tests between forced and voluntary turnovers within each block.

If all blocks are well-balanced (i.e., the t-tests are not significant), then the algorithm ends. If a block is not well-balanced, then it can be divided into finer blocks and the process is repeated. In our analysis of the balancing tests, the blocks are all well-balanced, which ensures that even though both groups of CEO turnovers are different in a number of characteristics, they are comparable within the defined blocks. After balancing the blocks, we rank all CEO turnovers in each block (in both the samples) based on their propensity scores. Finally, for each treatment observation, we seek the nearest match from the control sample without replacement by choosing the minimal absolute difference in propensity scores of the treatment and control firms.

After obtaining a matched sample of forced and voluntary CEO turnovers, we contrast the earnings management for the two subsamples. The results are reported in Table IA.19. The mean earnings management in the year before forced turnovers is 0.097, compared to 0.084 for voluntary turnovers. Both the parametric t-test and Wilcoxon non-parametric test indicate that the difference is statistically significant.

We repeated the propensity score matching procedure using the right hand side variables in Models 3 and 4 in Table 4 of the paper to create matched samples of forced and voluntary CEO turnovers. The results, also reported in Table IA.19, are similar: earnings management is higher before forced turnovers than before voluntary turnovers.

Finally, we used propensity score matching to compare forced CEO turnovers to no-turnover events. As presented in Table IA.19, earnings management before forced CEO turnovers is significantly higher than that associated with no turnover events. Overall, the results from the propensity score matching tests are consistent with those reported in the paper.

## 7. CFO turnover

We also analyzed the impact of earnings management on CFO turnover. To do so, we identified all CFO turnovers in the ExecuComp database from 1992-2004, and then searched the *Factiva* and *Lexis-Nexis* databases to record the date the turnover was first announced and the reason for the CFO's departure. We exclude turnovers in the Banking, Finance, and Insurance industries, and that result from takeovers, mergers, or spin-offs. This results in a sample of 608 CFO turnovers, of which 245 (40%) are classified as forced. To determine whether the CFO turnover was forced or voluntary, we follow the rules used by Huson, Parrino and Starks (2001).

The results are reported in Table 6 in the paper, and Tables IA.20 – IA.23 of this Appendix. The results for CFO turnovers are very similar to those for CEOs. Like CEO turnovers, the probability of forced CFO turnover is positively related to earnings management, whereas the probability of voluntary CFO turnover is not (this is reported in Table 6 in the paper). A CFO's job tenure also is negatively related to the amount of earnings management during that tenure (Table IA.20).

In Tables IA.21 and IA.22 we address a concern that some firm-years in the CEO tests could be misclassified. For example, a voluntary CEO turnover could mask an actual forced event if the CFO was forced out instead. To address this concern we mark a voluntary CEO turnover as forced if the CFO forceably was replaced in the year before, during, or after CEO turnover. Table IA.21 reports the competing risks hazard regressions and Table IA.22 reports the impact of earnings management on CEO tenure using this coding. As in previous tests, aggressive earnings management increases the likelihood of forced ouster of top executives and shortens their tenure. We also ran similar tests on the sub-sample that excludes earnings restatements, SEC enforcement sanctions, and events in the Dyck et al. (2010) sample, and obtain similar results. Throughout, the results indicate that the results are not significantly contaminated by events in which CFOs possibly were made scapegoats, resulting in a misclassification of a CEO turnover.

The preceding tests do not consider a related misclassification problem. It is possible that the CFO can be forced out and the CEO remain on the job. We might misclassify the firm-year as having no turnover when in fact the CFO was forced out. To examine whether such a possibility is important in our sample, we created a variable, "forced turnover," that equals one when *either* the CEO or CFO is forced out. Table IA.23 reports the results for the logistic regressions using this variable. The results indicate that the likelihood of at least one top executive being forced out is positively related to earnings management. The coefficients are similar to our main tests in sign and magnitude, indicating that are main results are not significantly affected by CFO turnovers.

## 8. Additional tests

Table IA.24 reports on logistic regressions that use data on all CEO turnovers. The dependent variable equals one for forced turnovers, and is zero for voluntary turnovers. The results indicate that earnings management is significantly higher for forced turnovers. Tables IA.25 and IA.26 report results when forced turnovers are limited to category (i) events as explained in section 3 of the paper. These are cases in which it is clear that the CEO was forced out. The results are similar to those reported throughout the paper and Appendix.

We also examine whether our results are influenced by accrual reversals. To do so, we create two dummy variables denoting positive and negative abnormal accruals in the year t-2, and interact these dummies with the two variables that measure the positive and negative abnormal accruals in year t-1. This results in four variables (positive accruals in t-2 and positive in t-1, positive in t-2 and negative in t-1, negative in t-2 and positive in t-1, and negative in t-2 and negative in t-1). The idea is that, if our results are an artifact of accrual reversals, then we would observe significant coefficients only on positive-negative and negative-positive interactions. In table IA.27, however, these interaction terms are not significant, and the primary relation between earnings management and forced turnover remain significant.

Finally, Table IA.28 reports probit regressions for forced CEO turnovers including the two instrumental variables: (i) special items, which is the sum of special items, extraordinary items and restructuring charges; and (ii) operating earnings volatility, computed as the standard deviation of operating earnings (ROA) measured over the five prior years. As observed, operating earnings volatility itself is not significantly related to forced CEO turnover, suggesting that it meets the exclusion restriction. Special items, however, is significantly related to forced turnover in some tests, suggesting that it may not satisfy the exclusion restriction. The significant impact of earnings management on forced turnover, however, remains robust.

## Table IA.1: Correlation matrix

This table reports the pair-wise correlations among the explanatory variables for 1,482 firm-years when CEOs left office during the period 1992-2004, and the 16,797 firm-years when CEOs remained in office at the end of the year. Some variables have data for a subset of firm-years. The correlations for the governance variables denoting independent directors, democracy firms, and dictatorship firms are based on data from 1996-2004. ***, **, and * indicate statistical significance at the 1, 5, and 10% levels, respectively. Variables are defined in Appendix.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) Earnings Management | 1.00 | | | | | | | | | | | | | |
| (2) Industry-adj. Firm Return | 0.08*** | 1.00 | | | | | | | | | | | | |
| (3) Cumulative Industry Return | -0.01 | -0.08*** | 1.00 | | | | | | | | | | | |
| (4) Operating Performance | -0.05*** | 0.06*** | 0.04*** | 1.00 | | | | | | | | | | |
| (5) Sales Growth | 0.00 | 0.02*** | 0.01 | -0.02*** | 1.00 | | | | | | | | | |
| (6) Stock Return Volatility | 0.24*** | 0.31*** | -0.07*** | -0.21*** | 0.05*** | 1.00 | | | | | | | | |
| (7) Market to Book Ratio | 0.18*** | 0.25*** | 0.11*** | 0.00 | 0.02*** | 0.22*** | 1.00 | | | | | | | |
| (8) Firm Size | -0.16*** | -0.13*** | -0.04*** | 0.05*** | -0.02** | -0.32*** | -0.14*** | 1.00 | | | | | | |
| (9) Leverage | -0.03*** | -0.00 | -0.02** | -0.01** | -0.00 | -0.01** | -0.05*** | 0.05*** | 1.00 | | | | | |
| (10) Independent Directors (Normalized) | -0.00 | -0.01 | 0.01 | -0.02** | -0.00 | 0.01 | -0.01 | 0.01 | 0.02*** | 1.00 | | | | |
| (11) CEO Stock Ownership | 0.04*** | 0.03*** | 0.02* | -0.05*** | 0.03*** | 0.07*** | 0.07*** | -0.19*** | -0.01 | 0.07*** | 1.00 | | | |
| (12) CEO-Chairperson Duality | -0.05*** | -0.03*** | 0.01 | 0.03*** | -0.03** | -0.12*** | -0.04*** | 0.22*** | 0.03*** | 0.04*** | 0.06*** | 1.00 | | |
| (13) Democracy Firm (GIM < 6) | 0.00 | -0.00 | 0.00 | 0.00 | -0.00 | 0.03*** | 0.03*** | 0.06*** | -0.00 | 0.01 | 0.09*** | -0.06*** | 1.00 | |
| (14) Dictatorship Firm (GIM> 12) | -0.04*** | -0.03*** | -0.01 | -0.02 | -0.01 | -0.09*** | -0.05*** | 0.16*** | 0.01 | -0.02* | -0.08*** | 0.07*** | -0.05*** | 1.00 |

**Table IA.2: Cox hazard regressions of CEO turnover excluding events with earnings restatements and SEC enforcement sanctions**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Industry indicators are based on 2-digit SIC codes. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (3) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **2.334*** ** | **0.181** | **2.745*** ** | **0.522** | **3.078*** ** | **0.515** | **5.473*** ** | **0.868** |
| **(Performance-Adjusted Absolute** | **(0.009)** | **(0.674)** | **(0.003)** | **(0.228)** | **(0.003)** | **(0.277)** | **(0.000)** | **(0.140)** |
| **Discretionary Accruals)** | | | | | | | | |
| Industry-Adjusted Firm Return | | | -1.391*** | -0.518*** | -1.415*** | -0.546*** | -1.074*** | -0.441*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.301 | -0.209 | -0.323 | -0.143 | 0.403 | -0.260 |
| | | | (0.387) | (0.162) | (0.417) | (0.372) | (0.374) | (0.183) |
| Operating Performance | | | -0.215 | -0.076 | -0.512 | -0.549 | 1.363 | -0.279 |
| | | | (0.362) | (0.559) | (0.338) | (0.130) | (0.178) | (0.640) |
| Sales Growth | | | -0.421 | 0.000 | -0.215 | 0.038* | -0.940** | -0.204 |
| | | | (0.153) | (0.988) | (0.483) | (0.073) | (0.011) | (0.293) |
| Stock Return Volatility | | | 5.917*** | 0.601 | 5.152*** | -0.315 | 5.536*** | -0.759 |
| | | | (0.000) | (0.297) | (0.000) | (0.623) | (0.000) | (0.346) |
| Market-to-book ratio | | | -0.079 | 0.032* | -0.074 | 0.028** | -0.227* | 0.039 |
| | | | (0.185) | (0.094) | (0.300) | (0.045) | (0.053) | (0.204) |
| Firm Size | | | 0.269*** | 0.188*** | 0.208*** | 0.041 | 0.196** | 0.014 |
| | | | (0.000) | (0.000) | (0.001) | (0.232) | (0.016) | (0.750) |
| Leverage | | | 0.021 | 0.017* | -0.016 | 0.005 | -0.041 | 0.155*** |
| | | | (0.155) | (0.070) | (0.504) | (0.961) | (0.168) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.232*** | -0.067*** | -0.297*** | -0.079*** |
| | | | | | (0.000) | (0.000) | (0.001) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.842*** | -0.061 | -0.785*** | -0.075 |
| | | | | | (0.000) | (0.551) | (0.000) | (0.556) |
| % Independent Directors | | | | | | | 0.002 | 0.008** |
| | | | | | | | (0.852) | (0.050) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.343 | -0.022 |
| | | | | | | | (0.341) | (0.893) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.152 | 0.018 |
| | | | | | | | (0.633) | (0.916) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 282 | 1233 | 274 | 1210 | 223 | 999 | 145 | 624 |
| No. of Firm-Years | 19424 | 19424 | 18342 | 18342 | 10310 | 10310 | 6893 | 6893 |
| -2 Log Liklihood | 2445.53 | 10216.01 | 2258.16 | 9909.45 | 1715.87 | 7817.62 | 1023.93 | 4566.80 |

**Table IA.3: Tobit regressions for CEO tenure excluding events with earnings restatements and SEC enforcement sanctions**

Estimates from TOBIT regressions that examine the determinants of CEO job tenure. In models 1 to 4, the sample consists of both forced and voluntary CEO turnovers from 1992-2004. Models 5 and 6 include forced CEO turnovers only. In each regression the dependent variable is the log of CEO tenure in years. Each explanatory variable is measured as its median annual value during the CEO's tenure. Explanatory variables are defined in the Appendix of the paper. The regressions include unreported industry indicators based on 2-digit SIC codes. Two-sided p-values are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| Variable | Log (CEO Tenure in Years) | | | | | |
|---|---|---|---|---|---|---|
| | All Turnovers | | | | Forced Turnovers | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **Earnings Management** | **-3.641*** (0.000)** | **-2.602*** (0.000)** | **-2.898*** (0.000)** | **-1.894** (0.020)** | **-2.576** (0.015)** | **-3.610*** (0.002)** |
| Forced Indicator | | | | -0.071 (0.578) | | |
| Earnings Management *Forced Indicator | | | | -1.825 (0.125) | | |
| Industry-Adjusted Firm Return | | 0.811*** (0.000) | 0.799*** (0.000) | 0.754*** (0.000) | 0.884*** (0.000) | 0.428* (0.061) |
| Cumulative Industry Return | | 0.354* (0.069) | 0.670*** (0.006) | 0.745*** (0.002) | 0.573 (0.114) | 0.090 (0.828) |
| Operating Performance | | 0.549** (0.034) | 0.675 (0.129) | 0.629 (0.154) | 0.133 (0.839) | -0.393 (0.686) |
| Sales Growth | | -0.012 (0.465) | 0.469*** (0.000) | 0.438*** (0.001) | 0.180* (0.077) | 1.358*** (0.002) |
| Stock Return Volatility | | -4.404*** (0.000) | -4.996*** (0.000) | -4.712*** (0.000) | -3.603*** (0.005) | -4.429*** (0.008) |
| Market-to-book ratio | | -0.002 (0.917) | -0.042 (0.160) | -0.046 (0.119) | -0.002 (0.965) | -0.012 (0.879) |
| Firm Size | | -0.165*** (0.000) | -0.174*** (0.000) | -0.167*** (0.000) | -0.120*** (0.003) | -0.160*** (0.008) |
| Leverage | | -0.094 (0.168) | -0.141 (0.282) | -0.158 (0.227) | -0.045 (0.544) | 0.100 (0.781) |
| Percentage of CEO Stock Ownership | | | 0.023*** (0.000) | 0.020*** (0.001) | | 0.067* (0.080) |
| CEO-Chairperson Duality Indicator | | | 0.468*** (0.000) | 0.448*** (0.000) | | 0.452*** (0.003) |
| Independent Directors (Normalized) | | | -0.004** (0.049) | -0.005** (0.032) | | 0.007 (0.416) |
| Democracy Firm (GIM Index < 6) | | | 0.113 (0.267) | 0.108 (0.283) | | 0.334 (0.219) |
| Dictatorship Firm (GIM Index > 12) | | | -0.343*** (0.001) | -0.341*** (0.001) | | -0.313 (0.180) |
| Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of Observations | 1515 | 1492 | 810 | 810 | 279 | 154 |
| - Log Likelihood | 2091.16 | 1931.67 | 975.66 | 970.92 | 337.28 | 161.17 |

## Table IA.4: Cox hazard regressions of CEO turnover excluding events with earnings restatements, SEC enforcement sanctions, and prior media attention

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Industry indicators are based on 2-digit SIC codes. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (3) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management (Performance-Adjusted Absolute Discretionary Accruals)** | **2.162**** | **0.216** | **2.531***** | **0.552** | **2.868***** | **0.574** | **5.192***** | **0.963** |
| | **(0.017)** | **(0.617)** | **(0.007)** | **(0.202)** | **(0.008)** | **(0.227)** | **(0.000)** | **(0.103)** |
| Industry-Adjusted Firm Return | | | -1.375*** | -0.499*** | -1.398*** | -0.522*** | -1.036*** | -0.410*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.357 | -0.219 | -0.385 | -0.153 | 0.366 | -0.279 |
| | | | (0.320) | (0.147) | (0.352) | (0.346) | (0.440) | (0.160) |
| Operating Performance | | | -0.213 | -0.089 | -0.606 | -0.552 | 0.990 | -0.249 |
| | | | (0.371) | (0.494) | (0.239) | (0.132) | (0.291) | (0.679) |
| Sales Growth | | | -0.395 | 0.000 | -0.191 | 0.041* | -0.899** | -0.196 |
| | | | (0.180) | (0.967) | (0.516) | (0.064) | (0.017) | (0.317) |
| Stock Return Volatility | | | 5.912*** | 0.680 | 5.111*** | -0.214 | 5.408*** | -0.581 |
| | | | (0.000) | (0.239) | (0.000) | (0.740) | (0.000) | (0.473) |
| Market-to-book ratio | | | -0.076 | 0.031 | -0.066 | 0.026* | -0.202* | 0.034 |
| | | | (0.208) | (0.122) | (0.336) | (0.066) | (0.079) | (0.276) |
| Firm Size | | | 0.259*** | 0.195*** | 0.201*** | 0.041 | 0.184** | 0.012 |
| | | | (0.000) | (0.000) | (0.003) | (0.234) | (0.030) | (0.791) |
| Leverage | | | 0.021 | 0.017* | -0.019 | 0.005 | -0.046* | 0.157*** |
| | | | (0.176) | (0.075) | (0.406) | (0.962) | (0.062) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.226*** | -0.071*** | -0.287*** | -0.083*** |
| | | | | | (0.000) | (0.000) | (0.001) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.852*** | -0.050 | -0.783*** | -0.047 |
| | | | | | (0.000) | (0.625) | (0.000) | (0.716) |
| % Independent Directors | | | | | | | 0.002 | 0.008* |
| | | | | | | | (0.840) | (0.054) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.308 | -0.029 |
| | | | | | | | (0.392) | (0.860) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.141 | 0.004 |
| | | | | | | | (0.663) | (0.984) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 275 | 1219 | 267 | 1197 | 216 | 986 | 138 | 613 |
| No. of Firm-Years | 19284 | 19284 | 18212 | 18212 | 10236 | 10236 | 6836 | 6836 |
| -2 Log Liklihood | 2385.64 | 10088.78 | 2205.31 | 9791.56 | 1667.81 | 7702.16 | 981.63 | 4476.53 |

**Table IA.5: Tobit Regressions for CEO Tenure excluding events with earnings restatements, SEC enforcement sanctions, and prior media attention**

Estimates from TOBIT regressions that examine the determinants of CEO job tenure. In models 1 to 4, the sample consists of both forced and voluntary CEO turnovers from 1992-2004. Models 5 and 6 include forced CEO turnovers only. In each regression the dependent variable is the log of CEO tenure in years. Each explanatory variable is measured as its median annual value during the CEO's tenure. Explanatory variables are defined in the Appendix of the paper. The regressions include unreported industry indicators based on 2-digit SIC codes. Two-sided p-values are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| Variable | Log (CEO Tenure in Years) | | | | | |
|---|---|---|---|---|---|---|
| | All Turnovers | | | | Forced Turnovers | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **Earnings Management** | **-3.517*** ** | **-2.458*** ** | **-2.660*** ** | **-1.819** ** | **-2.015* ** | **-2.769** ** |
| | **(0.000)** | **(0.000)** | **(0.000)** | **(0.026)** | **(0.066)** | **(0.021)** |
| Forced Indicator | | | | -0.119 | | |
| | | | | (0.358) | | |
| Earnings Management *Forced Indicator | | | | -1.419 | | |
| | | | | (0.243) | | |
| Industry-Adjusted Firm Return | | 0.805*** | 0.775*** | 0.727*** | 0.904*** | 0.489** |
| | | (0.000) | (0.000) | (0.000) | (0.000) | (0.042) |
| Cumulative Industry Return | | 0.331* | 0.627** | 0.690*** | 0.520 | 0.045 |
| | | (0.091) | (0.010) | (0.005) | (0.160) | (0.916) |
| Operating Performance | | 0.564** | 0.689 | 0.636 | 0.141 | -0.329 |
| | | (0.031) | (0.125) | (0.155) | (0.832) | (0.752) |
| Sales Growth | | -0.011 | 0.469*** | 0.440*** | 0.165 | 1.199*** |
| | | (0.519) | (0.000) | (0.001) | (0.109) | (0.006) |
| Stock Return Volatility | | -4.397*** | -5.050*** | -4.753*** | -3.602*** | -4.347** |
| | | (0.000) | (0.000) | (0.000) | (0.005) | (0.012) |
| Market-to-book ratio | | -0.003 | -0.041 | -0.045 | -0.008 | -0.017 |
| | | (0.842) | (0.167) | (0.129) | (0.871) | (0.830) |
| Firm Size | | -0.166*** | -0.176*** | -0.168*** | -0.117*** | -0.156** |
| | | (0.000) | (0.000) | (0.000) | (0.004) | (0.013) |
| Leverage | | -0.094 | -0.138 | -0.158 | -0.050 | 0.017 |
| | | (0.171) | (0.295) | (0.229) | (0.531) | (0.964) |
| Percentage of CEO Stock Ownership | | | 0.025*** | 0.022*** | | 0.066* |
| | | | (0.000) | (0.000) | | (0.089) |
| CEO-Chairperson Duality Indicator | | | 0.467*** | 0.445*** | | 0.461*** |
| | | | (0.000) | (0.000) | | (0.004) |
| Independent Directors (Normalized) | | | -0.005** | -0.005** | | 0.007 |
| | | | (0.048) | (0.033) | | (0.400) |
| Democracy Firm (GIM Index < 6) | | | 0.104 | 0.100 | | 0.426 |
| | | | (0.311) | (0.327) | | (0.133) |
| Dictatorship Firm (GIM Index > 12) | | | -0.334*** | -0.329*** | | -0.325 |
| | | | (0.001) | (0.001) | | (0.167) |
| Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of Observations | 1493 | 1471 | 792 | 792 | 271 | 147 |
| - Log Likelihood | 2061.85 | 1906.45 | 954.57 | 949.95 | 327.18 | 153.25 |

**Table IA.6: Competing risks hazard regressions relating CEO turnover to earnings management controlling for governance quality**
Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Year dummies and industry indicators based on 2-digit SIC codes are included in the regressions but not reported. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **7.231**** | **-0.631** | **6.978**** | **-0.490** | **9.168***** | **0.062** | **10.538***** | **-1.182** |
| **(Performance-Adjusted Absolute** | **(0.011)** | **(0.702)** | **(0.023)** | **(0.765)** | **(0.004)** | **(0.971)** | **(0.002)** | **(0.519)** |
| **Discretionary Accruals)** | | | | | | | | |
| G--index | 0.061 | 0.048** | 0.065 | 0.039** | 0.077* | 0.039* | 0.044 | 0.023 |
| | (0.119) | (0.011) | (0.108) | (0.045) | (0.082) | (0.068) | (0.458) | (0.501) |
| G-index *EM | -0.499* | 0.072 | -0.452 | 0.089 | -0.591* | 0.041 | -0.697* | 0.222 |
| | (0.086) | (0.674) | (0.151) | (0.601) | (0.067) | (0.818) | (0.053) | (0.246) |
| Industry-Adjusted Firm Return | | | -1.308*** | -0.444*** | -1.334*** | -0.513*** | -1.238*** | -0.468*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | 0.135 | -0.032 | 0.186 | -0.051 | 0.184 | -0.275 |
| | | | (0.701) | (0.851) | (0.634) | (0.779) | (0.643) | (0.140) |
| Operating Performance | | | -0.377 | 0.092 | -0.857 | -0.299 | 0.440 | -0.318 |
| | | | (0.197) | (0.711) | (0.252) | (0.557) | (0.651) | (0.550) |
| Sales Growth | | | -0.785*** | -0.203 | -0.732** | -0.171 | -0.812*** | -0.144 |
| | | | (0.009) | (0.193) | (0.034) | (0.309) | (0.007) | (0.379) |
| Stock Return Volatility | | | 4.875*** | 1.084* | 4.428*** | 0.234 | 4.567*** | -0.161 |
| | | | (0.000) | (0.065) | (0.000) | (0.746) | (0.000) | (0.829) |
| Market-to-book ratio | | | -0.161** | -0.009 | -0.149 | 0.029 | -0.178* | 0.026 |
| | | | (0.030) | (0.731) | (0.119) | (0.337) | (0.058) | (0.131) |
| Firm Size | | | 0.223*** | 0.155*** | 0.230*** | 0.062 | 0.215*** | 0.034 |
| | | | (0.000) | (0.000) | (0.001) | (0.100) | (0.002) | (0.417) |
| Leverage | | | 0.097*** | -0.007 | -0.008 | -0.008 | -0.038 | 0.176*** |
| | | | (0.004) | (0.931) | (0.786) | (0.907) | (0.188) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.209*** | -0.079*** | -0.205*** | -0.081*** |
| | | | | | (0.008) | (0.000) | (0.008) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.876*** | -0.104 | -0.813*** | -0.136 |
| | | | | | (0.000) | (0.370) | (0.000) | (0.270) |
| % Independent Directors | | | | | | | 0.006 | 0.007* |
| | | | | | | | (0.313) | (0.067) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.502 | 0.156 |
| | | | | | | | (0.189) | (0.435) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.106 | -0.119 |
| | | | | | | | (0.778) | (0.577) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 245 | 1023 | 240 | 1014 | 209 | 871 | 178 | 684 |
| No. of Firm-Years | 11118 | 11118 | 10864 | 10864 | 8767 | 8767 | 7221 | 7221 |
| -2 Log Liklihood | 2029.48 | 8113.49 | 1899.63 | 7993.92 | 1567.08 | 6635.54 | 1284.92 | 5056.57 |

**Table IA.7: Competing risks hazard regressions relating CEO turnover to earnings management controlling for growth options**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. The market-to-book indicator =1 if the market-to-book ratio is in the highest quartile for that year. Other explanatory variables are defined in the Appendix of the paper. Year dummies and industry indicators based on 2-digit SIC codes are included in the regressions but not reported. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **2.718***** | **0.416** | **2.423***** | **0.468** | **2.659***** | **0.275** | **4.348***** | **0.701** |
| **(Performance-Adjusted Absolute Discretionary Accruals)** | **(0.002)** | **(0.367)** | **(0.007)** | **(0.307)** | **(0.007)** | **(0.575)** | **(0.000)** | **(0.242)** |
| Market-to-book Indicator | -0.273*** | 0.003 | -0.108 | 0.025 | -0.083 | 0.020* | -0.169 | 0.017 |
| | (0.004) | (0.892) | (0.111) | (0.157) | (0.299) | (0.094) | (0.145) | (0.403) |
| Market-to-book Indicator *EM | -0.541 | -0.865 | 0.610 | -0.071 | 0.211 | 0.533 | -0.058 | 0.575 |
| | (0.723) | (0.248) | (0.681) | (0.923) | (0.899) | (0.474) | (0.978) | (0.522) |
| Industry-Adjusted Firm Return | | | -1.442*** | -0.521*** | -1.476*** | -0.562*** | -1.243*** | -0.472*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.209 | -0.220 | -0.304 | -0.179 | 0.219 | -0.284 |
| | | | (0.492) | (0.127) | (0.389) | (0.247) | (0.581) | (0.128) |
| Operating Performance | | | -0.328 | -0.069 | -0.711 | -0.540 | 0.352 | -0.262 |
| | | | (0.180) | (0.589) | (0.162) | (0.141) | (0.704) | (0.632) |
| Sales Growth | | | -0.314 | 0.000 | -0.291 | 0.040* | -0.814*** | -0.149 |
| | | | (0.196) | (0.963) | (0.306) | (0.062) | (0.007) | (0.363) |
| Stock Return Volatility | | | 5.222*** | 0.889* | 4.703*** | 0.131 | 4.613*** | -0.200 |
| | | | (0.000) | (0.091) | (0.000) | (0.829) | (0.000) | (0.789) |
| Firm Size | | | 0.273*** | 0.189*** | 0.233*** | 0.056* | 0.214*** | 0.039 |
| | | | (0.000) | (0.000) | (0.000) | (0.089) | (0.002) | (0.340) |
| Leverage | | | 0.023* | 0.019** | -0.015 | 0.018 | -0.041 | 0.170*** |
| | | | (0.089) | (0.030) | (0.499) | (0.900) | (0.109) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.192*** | -0.068*** | -0.202*** | -0.082*** |
| | | | | | (0.000) | (0.000) | (0.008) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.864*** | -0.087 | -0.813*** | -0.124 |
| | | | | | (0.000) | (0.379) | (0.000) | (0.309) |
| % Independent Directors | | | | | | | 0.006 | 0.007** |
| | | | | | | | (0.316) | (0.047) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.335 | -0.010 |
| | | | | | | | (0.296) | (0.953) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.235 | 0.081 |
| | | | | | | | (0.430) | (0.612) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 322 | 1306 | 315 | 1288 | 258 | 1071 | 178 | 684 |
| No. of Firm-Years | 19837 | 19837 | 19040 | 19040 | 10769 | 10769 | 7221 | 7221 |
| -2 Log Liklihood | 2787.41 | 10870.99 | 2606.76 | 10614.08 | 2007.09 | 8445.32 | 1286.96 | 5058.32 |

**Table IA.8: Competing risks hazard regressions relating CEO turnover to earnings management controlling for reliance on external financing**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. The external financing indicator =1 if the external financing variable is in the highest quartile for that year. Other explanatory variables are defined in the Appendix of the paper. Year dummies and industry indicators based on 2-digit SIC codes are included in the regressions but not reported. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **1.609*** | **-0.448** | **2.017*** | **-0.011** | **2.174*** | **0.214** | **3.625***** | **0.721** |
| **(Performance-Adjusted Absolute** | **(0.100)** | **(0.369)** | **(0.050)** | **(0.982)** | **(0.055)** | **(0.691)** | **(0.006)** | **(0.264)** |
| **Discretionary Accruals)** | | | | | | | | |
| External Financing Indicator | 0.487 | -0.109 | 0.553 | -0.072 | 0.330 | 0.043 | -0.373 | 0.224 |
| | (0.145) | (0.449) | (0.106) | (0.623) | (0.399) | (0.791) | (0.530) | (0.381) |
| External Financing Indicator *EM | 1.595 | 2.129** | 1.250 | 1.606* | 1.494 | 0.617 | 3.064 | 0.369 |
| | (0.377) | (0.019) | (0.504) | (0.082) | (0.493) | (0.536) | (0.263) | (0.772) |
| Industry-Adjusted Firm Return | | | -1.450*** | -0.519*** | -1.487*** | -0.558*** | -1.256*** | -0.471*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.213 | -0.223 | -0.312 | -0.178 | 0.214 | -0.281 |
| | | | (0.484) | (0.121) | (0.374) | (0.251) | (0.587) | (0.131) |
| Operating Performance | | | -0.299 | -0.079 | -0.710 | -0.515 | 0.327 | -0.224 |
| | | | (0.178) | (0.531) | (0.163) | (0.159) | (0.721) | (0.677) |
| Sales Growth | | | -0.326 | 0.000 | -0.298 | 0.039* | -0.805*** | -0.148 |
| | | | (0.173) | (0.986) | (0.294) | (0.060) | (0.008) | (0.370) |
| Stock Return Volatility | | | 5.235*** | 0.885* | 4.726*** | 0.146 | 4.635*** | -0.193 |
| | | | (0.000) | (0.093) | (0.000) | (0.810) | (0.000) | (0.796) |
| Market-to-book ratio | | | -0.096* | 0.023 | -0.078 | 0.023** | -0.169* | 0.023 |
| | | | (0.082) | (0.153) | (0.229) | (0.033) | (0.065) | (0.198) |
| Firm Size | | | 0.272*** | 0.188*** | 0.231*** | 0.054* | 0.211*** | 0.038 |
| | | | (0.000) | (0.000) | (0.000) | (0.099) | (0.003) | (0.356) |
| Leverage | | | 0.023* | 0.018** | -0.015 | 0.017 | -0.039 | 0.172*** |
| | | | (0.087) | (0.034) | (0.511) | (0.904) | (0.162) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.192*** | -0.068*** | -0.202*** | -0.082*** |
| | | | | | (0.000) | (0.000) | (0.009) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.860*** | -0.086 | -0.807*** | -0.124 |
| | | | | | (0.000) | (0.383) | (0.000) | (0.309) |
| % Independent Directors | | | | | | | 0.006 | 0.007** |
| | | | | | | | (0.299) | (0.049) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.340 | -0.003 |
| | | | | | | | (0.289) | (0.987) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.236 | 0.077 |
| | | | | | | | (0.427) | (0.629) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 324 | 1313 | 315 | 1288 | 258 | 1071 | 178 | 684 |
| No. of Firm-Years | 20153 | 20153 | 19040 | 19040 | 10769 | 10769 | 7221 | 7221 |
| -2 Log Liklihood | 2825.44 | 10949.19 | 2603.61 | 10614.89 | 2005.90 | 8446.41 | 1286.24 | 5058.02 |

**Table IA.9: Cox hazard regressions of CEO turnover controlling for pre and post-SOX time periods**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Year dummies and industry indicators based on 2-digit SIC codes are included in the regressions but not reported. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (3) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **2.034**** | **0.124** | **2.454***** | **0.475** | **2.475**** | **0.429** | **4.301***** | **0.779** |
| **(Performance-Adjusted Absolute** | **(0.017)** | **(0.774)** | **(0.006)** | **(0.272)** | **(0.014)** | **(0.364)** | **(0.000)** | **(0.190)** |
| **Discretionary Accruals)** | | | | | | | | |
| Post - Sox Indicator | -22.337*** | -21.894*** | -21.008*** | -21.767*** | -21.879*** | -21.170*** | -21.893*** | -21.249*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Earnings Management * | 1.781 | 0.216 | 0.798 | -0.277 | 2.264 | -0.175 | 0.398 | 0.368 |
| Post - Sox Indicator | (0.436) | (0.872) | (0.745) | (0.839) | (0.408) | (0.898) | (0.902) | (0.804) |
| Industry-Adjusted Firm Return | | | -1.443*** | -0.522*** | -1.476*** | -0.558*** | -1.243*** | -0.470*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.214 | -0.220 | -0.300 | -0.177 | 0.220 | -0.284 |
| | | | (0.482) | (0.128) | (0.393) | (0.253) | (0.575) | (0.127) |
| Operating Performance | | | -0.288 | -0.073 | -0.714 | -0.513 | 0.347 | -0.232 |
| | | | (0.199) | (0.566) | (0.161) | (0.162) | (0.707) | (0.666) |
| Sales Growth | | | -0.308 | 0.000 | -0.285 | 0.040* | -0.813*** | -0.146 |
| | | | (0.203) | (0.964) | (0.314) | (0.056) | (0.007) | (0.375) |
| Stock Return Volatility | | | 5.245*** | 0.883* | 4.728*** | 0.140 | 4.613*** | -0.186 |
| | | | (0.000) | (0.094) | (0.000) | (0.818) | (0.000) | (0.803) |
| Market-to-book ratio | | | -0.094* | 0.024 | -0.078 | 0.024** | -0.171* | 0.023 |
| | | | (0.087) | (0.134) | (0.233) | (0.032) | (0.064) | (0.200) |
| Firm Size | | | 0.273*** | 0.189*** | 0.233*** | 0.055* | 0.214*** | 0.039 |
| | | | (0.000) | (0.000) | (0.000) | (0.095) | (0.002) | (0.347) |
| Leverage | | | 0.023* | 0.019** | -0.015 | 0.017 | -0.041 | 0.172*** |
| | | | (0.091) | (0.030) | (0.497) | (0.903) | (0.102) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.192*** | -0.068*** | -0.202*** | -0.082*** |
| | | | | | (0.000) | (0.000) | (0.008) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.866*** | -0.088 | -0.814*** | -0.125 |
| | | | | | (0.000) | (0.373) | (0.000) | (0.305) |
| % Independent Directors | | | | | | | 0.006 | 0.007** |
| | | | | | | | (0.316) | (0.047) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.336 | -0.008 |
| | | | | | | | (0.296) | (0.961) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.235 | 0.076 |
| | | | | | | | (0.429) | (0.631) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 324 | 1313 | 315 | 1288 | 258 | 1071 | 178 | 684 |
| No. of Firm-Years | 20153 | 20153 | 19040 | 19040 | 10769 | 10769 | 7221 | 7221 |
| -2 Log Liklihood | 2828.49 | 10951.94 | 2606.71 | 10616.43 | 2006.81 | 8446.79 | 1286.96 | 5058.48 |

**Table IA.10: Competing risks hazard regressions relating CEO turnover to earnings management controlling for operating volatility**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Industry indicators are based on 2-digit SIC codes. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type. Performance-adjusted absolute discretionary accruals are computed as the absolute value of firm's accruals scaled by the absolute value of firms' cash flow from operations.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **2.087*****| **0.068** | **2.521*****| **0.371** | **2.514***** | **0.305** | **4.333***** | **0.753** |
| **(Performance-Adjusted Absolute Discretionary Accruals)** | **(0.010)** | **(0.871)** | **(0.003)** | **(0.377)** | **(0.008)** | **(0.504)** | **(0.000)** | **(0.183)** |
| Operating Volatility | 0.572* | 0.168 | 1.571 | 0.510 | 1.807 | 1.004 | 0.611 | 0.253 |
| | (0.056) | (0.583) | (0.143) | (0.449) | (0.136) | (0.151) | (0.592) | (0.782) |
| Industry-Adjusted Firm Return | | | -1.438*** | -0.523*** | -1.481*** | -0.562*** | -1.236*** | -0.476*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.177 | -0.239 | -0.257 | -0.188 | 0.237 | -0.294 |
| | | | (0.571) | (0.101) | (0.467) | (0.226) | (0.549) | (0.115) |
| Operating Performance | | | 0.238 | 0.118 | -0.249 | -0.359 | 0.485 | -0.190 |
| | | | (0.544) | (0.669) | (0.631) | (0.313) | (0.604) | (0.723) |
| Sales Growth | | | -0.302 | 0.001 | -0.293 | 0.042* | -0.808*** | -0.149 |
| | | | (0.192) | (0.887) | (0.268) | (0.063) | (0.008) | (0.367) |
| Stock Return Volatility | | | 5.106*** | 0.846 | 4.491*** | 0.016 | 4.575*** | -0.210 |
| | | | (0.000) | (0.114) | (0.000) | (0.980) | (0.000) | (0.781) |
| Market-to-book ratio | | | -0.117* | 0.023 | -0.096 | 0.023** | -0.180* | 0.025 |
| | | | (0.056) | (0.200) | (0.168) | (0.045) | (0.060) | (0.163) |
| Firm Size | | | 0.284*** | 0.191*** | 0.247*** | 0.057* | 0.220*** | 0.035 |
| | | | (0.000) | (0.000) | (0.000) | (0.084) | (0.002) | (0.404) |
| Leverage | | | 0.063 | 0.012 | -0.012 | 0.016 | -0.040 | 0.172*** |
| | | | (0.104) | (0.860) | (0.592) | (0.908) | (0.117) | (0.000) |
| Percentage of CEO Stock ownership | | | | | -0.188*** | -0.068*** | -0.201*** | -0.083*** |
| | | | | | (0.000) | (0.000) | (0.009) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.877*** | -0.087 | -0.815*** | -0.115 |
| | | | | | (0.000) | (0.377) | (0.000) | (0.344) |
| % Independent Directors | | | | | | | 0.006 | 0.007* |
| | | | | | | | (0.322) | (0.081) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.337 | -0.004 |
| | | | | | | | (0.294) | (0.982) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.239 | 0.080 |
| | | | | | | | (0.423) | (0.617) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 316 | 1296 | 309 | 1275 | 256 | 1066 | 178 | 681 |
| No. of Firm-Years | 19938 | 19938 | 18943 | 18943 | 10760 | 10760 | 7217 | 7217 |
| -2 Log Liklihood | 2759.43 | 10794.15 | 2559.16 | 10501.44 | 1990.94 | 8403.50 | 1286.68 | 5035.15 |

**Table IA.11: Competing risks hazard regressions relating CEO turnover to earnings management controlling for the impact of special items, extraordinary items and restructuring charges**

Estimates from the competing risks hazard regressions that examine the determinants of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix. Year dummies and industry indicators based on 2-digit SIC codes are included in the regressions but not reported. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variables are in boldface type.

| Variable | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
|---|---|---|---|---|---|---|---|---|
| | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Income-Increasing Earnings Management** | **1.621*** | **-0.595** | **2.110**** | **-0.114** | **2.727***** | **-0.348** | **4.401***** | **0.187** |
| **(Performance-Adjusted** | **(0.073)** | **(0.237)** | **(0.030)** | **(0.822)** | **(0.009)** | **(0.532)** | **(0.000)** | **(0.776)** |
| **Absolute Positive Abnormal Accruals)** | | | | | | | | |
| **Income-Decreasing Earnings Management** | **2.501***** | **0.789** | **3.031***** | **1.053**** | **2.571**** | **1.197**** | **4.176***** | **1.614**** |
| **(Performance-Adjusted** | **(0.010)** | **(0.114)** | **(0.002)** | **(0.036)** | **(0.023)** | **(0.026)** | **(0.003)** | **(0.018)** |
| **Absolute Negative Abnormal Accruals)** | | | | | | | | |
| Special items, extraordinary items | -5.853*** | -2.198*** | -2.944*** | -1.354** | -2.227** | -1.183* | -2.492* | -0.775 |
| and restructuring charges | (0.000) | (0.000) | (0.003) | (0.027) | (0.046) | (0.075) | (0.061) | (0.364) |
| Industry-Adjusted Firm Return | | | -1.378*** | -0.502*** | -1.444*** | -0.547*** | -1.192*** | -0.468*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.159 | -0.201 | -0.284 | -0.156 | 0.252 | -0.281 |
| | | | (0.608) | (0.168) | (0.427) | (0.321) | (0.530) | (0.136) |
| Operating Performance | | | -0.220 | -0.024 | -0.648 | -0.433 | 0.443 | -0.209 |
| | | | (0.311) | (0.852) | (0.207) | (0.248) | (0.649) | (0.698) |
| Sales Growth | | | -0.250 | 0.001 | -0.264 | 0.041** | -0.786*** | -0.122 |
| | | | (0.281) | (0.862) | (0.356) | (0.028) | (0.009) | (0.438) |
| Stock Return Volatility | | | 4.710*** | 0.610 | 4.183*** | -0.090 | 4.222*** | -0.408 |
| | | | (0.000) | (0.269) | (0.000) | (0.886) | (0.000) | (0.602) |
| Market-to-book ratio | | | -0.092* | 0.024 | -0.076 | 0.023** | -0.175* | 0.023 |
| | | | (0.091) | (0.127) | (0.235) | (0.040) | (0.060) | (0.216) |
| Firm Size | | | 0.272*** | 0.185*** | 0.232*** | 0.051 | 0.215*** | 0.035 |
| | | | (0.000) | (0.000) | (0.000) | (0.119) | (0.002) | (0.389) |
| Leverage | | | 0.023* | 0.019** | -0.021 | 0.013 | -0.046** | 0.157*** |
| | | | (0.099) | (0.039) | (0.322) | (0.373) | (0.032) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.191*** | -0.067*** | -0.203*** | -0.082*** |
| | | | | | (0.000) | (0.000) | (0.008) | (0.000) |
| CEO-Chairperson Duality Indicator | | | | | -0.862*** | -0.088 | -0.820*** | -0.130 |
| | | | | | (0.000) | (0.915) | (0.000) | (0.283) |
| % Independent Directors | | | | | | | 0.006 | 0.008** |
| | | | | | | | (0.295) | (0.043) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.292 | -0.004 |
| | | | | | | | (0.368) | (0.983) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.229 | 0.076 |
| | | | | | | | (0.440) | (0.633) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of Turnovers | 322 | 1310 | 314 | 1286 | 257 | 1070 | 178 | 684 |
| Number of Firm-Years | 20125 | 20125 | 19018 | 19018 | 10759 | 10759 | 7216 | 7216 |
| -Log Likelihood | 2788.11 | 10911.43 | 2592.71 | 10591.90 | 1998.06 | 8432.49 | 1285.00 | 5055.51 |

**Table IA.12: Competing risks hazard regressions relating CEO turnover to earnings management (including squared and cubic performance terms)**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Industry indicators are based on 2-digit SIC codes. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | |
|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **2.489***** | **0.458** | **2.628***** | **0.402** | **4.362***** | **0.807** |
| **(Performance-Adjusted Absolute** | **(0.003)** | **(0.272)** | **(0.006)** | **(0.378)** | **(0.000)** | **(0.151)** |
| **Discretionary Accruals)** | | | | | | |
| Industry-Adjusted Firm Return | -1.509*** | -0.523*** | -1.510*** | -0.527*** | -1.089*** | -0.461*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | -0.167 | -0.230 | -0.286 | -0.182 | 0.216 | -0.276 |
| | (0.583) | (0.111) | (0.412) | (0.242) | (0.582) | (0.139) |
| $(\text{Industry-Adjusted Firm Return})^2$ | -0.117 | -0.004 | -0.044 | 0.034 | 0.140 | 0.004 |
| | (0.377) | (0.949) | (0.750) | (0.592) | (0.366) | (0.964) |
| $(\text{Industry-Adjusted Firm Return})^3$ | 0.015 | 0.003 | 0.009 | -0.031 | -0.023 | 0.005 |
| | (0.470) | (0.744) | (0.686) | (0.297) | (0.306) | (0.779) |
| Operating Performance | -2.297*** | -0.402 | -1.485* | -0.025 | 0.443 | -0.815 |
| | (0.002) | (0.244) | (0.075) | (0.946) | (0.687) | (0.227) |
| $(\text{Operating Performance})^2$ | -0.886 | 0.675*** | -0.807 | 0.177 | 1.235 | 0.454 |
| | (0.561) | (0.007) | (0.600) | (0.781) | (0.474) | (0.628) |
| $(\text{Operating Performance})^3$ | 3.393 | 0.082*** | 2.203 | -0.200 | 0.528 | 1.897* |
| | (0.128) | (0.002) | (0.311) | (0.476) | (0.804) | (0.093) |
| Sales Growth | -0.270 | -0.002 | -0.281 | 0.034 | -0.814*** | -0.149 |
| | (0.247) | (0.801) | (0.329) | (0.280) | (0.007) | (0.363) |
| Stock Return Volatility | 4.941*** | 0.713 | 4.558*** | 0.330 | 4.584*** | -0.367 |
| | (0.000) | (0.211) | (0.000) | (0.604) | (0.000) | (0.643) |
| Market-to-book ratio | -0.030 | 0.022 | -0.057 | 0.018 | -0.201* | 0.022 |
| | (0.551) | (0.195) | (0.408) | (0.168) | (0.066) | (0.246) |
| Firm Size | 0.285*** | 0.194*** | 0.229*** | 0.054 | 0.222*** | 0.041 |
| | (0.000) | (0.000) | (0.000) | (0.103) | (0.001) | (0.324) |
| Leverage | 0.020 | 0.018** | -0.021 | 0.025 | -0.033 | 0.165*** |
| | (0.187) | (0.039) | (0.343) | (0.859) | (0.181) | (0.000) |
| Percentage of CEO Stock Ownership | | | -0.192*** | -0.069*** | -0.200*** | -0.082*** |
| | | | (0.000) | (0.000) | (0.008) | (0.000) |
| CEO- Chairperson Duality Indicator | | | -0.852*** | -0.093 | -0.821*** | -0.115 |
| | | | (0.000) | (0.348) | (0.000) | (0.345) |
| % Independent Directors | | | | | 0.006 | 0.008** |
| | | | | | (0.300) | (0.038) |
| Democracy Firm (GIM Index < 6) | | | | | -0.338 | -0.007 |
| | | | | | (0.291) | (0.965) |
| Dictatorship Firm (GIM Index > 12) | | | | | -0.229 | 0.082 |
| | | | | | (0.445) | (0.605) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 315 | 1288 | 258 | 1071 | 178 | 684 |
| No. of Firm-Years | 19040 | 19040 | 10769 | 10769 | 7221 | 7221 |
| -2 Log Liklihood | 2601.19 | 10609.24 | 2005.91 | 8443.06 | 1286.32 | 5057.52 |

**Table IA.13: Competing risks hazard regressions relating CEO turnover to earnings management and analysts' forecast met**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in Appendix B. Year dummies and industry indicators based on 2-digit SIC codes are included in the regressions but not reported. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **2.365***** | **-0.197** | **2.706***** | **0.346** | **3.224***** | **0.243** | **4.368***** | **0.539** |
| **(Performance-Adjusted Absolute** | **(0.008)** | **(0.673)** | **(0.003)** | **(0.466)** | **(0.002)** | **(0.632)** | **(0.000)** | **(0.377)** |
| **Discretionary Accruals)** | | | | | | | | |
| Analysts' median forecast met | -1.101*** | -0.085 | -0.738*** | 0.048 | -0.708*** | 0.006 | -0.686*** | -0.065 |
| (aggregated over past four quarters) | (0.000) | (0.441) | (0.000) | (0.684) | (0.000) | (0.961) | (0.002) | (0.664) |
| Industry-Adjusted Firm Return | | | -0.746*** | -0.164 | -0.902*** | -0.259 | -1.253*** | -0.492*** |
| | | | (0.009) | (0.317) | (0.004) | (0.144) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.546** | -0.347** | -0.480* | -0.327** | 0.104 | -0.352* |
| | | | (0.028) | (0.028) | (0.082) | (0.044) | (0.806) | (0.072) |
| Operating Performance | | | -0.170 | 0.053 | -0.012 | -0.006 | 0.514 | 0.209 |
| | | | (0.526) | (0.767) | (0.986) | (0.990) | (0.652) | (0.718) |
| Sales Growth | | | -0.129 | -0.280** | -0.113 | -0.153 | -0.635** | -0.185 |
| | | | (0.528) | (0.044) | (0.717) | (0.247) | (0.049) | (0.292) |
| Stock Return Volatility | | | 3.438*** | 0.296 | 3.499*** | -0.281 | 2.488*** | -0.798 |
| | | | (0.000) | (0.623) | (0.000) | (0.678) | (0.000) | (0.332) |
| Market-to-book ratio | | | -0.086 | 0.008 | -0.097 | 0.022 | -0.149 | 0.020 |
| | | | (0.110) | (0.700) | (0.162) | (0.160) | (0.130) | (0.376) |
| Firm Size | | | 0.271*** | 0.185*** | 0.219*** | 0.043 | 0.228** | 0.036 |
| | | | (0.000) | (0.000) | (0.001) | (0.228) | (0.003) | (0.418) |
| Leverage | | | 0.051 | 0.019 | -0.023 | 0.012 | -0.044** | 0.181*** |
| | | | (0.248) | (0.836) | (0.247) | (0.933) | (0.034) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.211*** | -0.073*** | -0.214** | -0.083*** |
| | | | | | (0.001) | (0.000) | (0.018) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.832*** | -0.060 | -0.762*** | -0.131 |
| | | | | | (0.000) | (0.579) | (0.000) | (0.315) |
| % Independent Directors | | | | | | | 0.008 | 0.007* |
| | | | | | | | (0.237) | (0.099) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.217 | -0.009 |
| | | | | | | | (0.531) | (0.349) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.349 | 0.155 |
| | | | | | | | (0.309) | (0.349) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 255 | 1058 | 250 | 1049 | 212 | 894 | 151 | 595 |
| No. of Firm-Years | 14144 | 14144 | 13838 | 13838 | 9312 | 9312 | 6548 | 6548 |
| -2 Log Likelihood | 3081.46 | 11036.50 | 2864.83 | 10688.79 | 2281.88 | 8817.78 | 1577.35 | 5779.10 |

**Table IA.14: Competing risks hazard regressions relating CEO turnover to earnings management using accruals data from cash flow statements (Hribar-Collins)**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Industry indicators are based on 2-digit SIC codes. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Performance-adjusted absolute discretionary accruals based on data from cash flow statements are used as a proxy for earnings management. . Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **3.063*****| **-0.624** | **3.095***** | **-0.519** | **2.501**** | **-0.024** | **3.945***** | **0.940** |
| **(Performance-Adjusted Absolute** | **(0.000)** | **(0.247)** | **(0.000)** | **(0.347)** | **(0.014)** | **(0.968)** | **(0.001)** | **(0.179)** |
| **Discretionary Accruals)** | | | | | | | | |
| Industry-Adjusted Firm Return | | | -1.423*** | -0.541*** | -1.453*** | -0.567*** | -1.174*** | -0.470*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.133 | -0.230 | -0.189 | -0.164 | 0.334 | -0.253 |
| | | | (0.660) | (0.110) | (0.583) | (0.287) | (0.384) | (0.169) |
| Operating Performance | | | -0.268 | -0.055 | -0.508 | -0.533 | 0.414 | -0.275 |
| | | | (0.208) | (0.653) | (0.314) | (0.129) | (0.641) | (0.598) |
| Sales Growth | | | -0.347 | 0.000 | -0.335 | 0.040** | -0.756** | -0.131 |
| | | | (0.148) | (0.934) | (0.249) | (0.049) | (0.010) | (0.417) |
| Stock Return Volatility | | | 5.063*** | 1.093** | 4.509*** | 0.262 | 4.365*** | -0.201 |
| | | | (0.000) | (0.036) | (0.000) | (0.663) | (0.000) | (0.786) |
| Market-to-book ratio | | | -0.084 | 0.028* | -0.079 | 0.024** | -0.177** | 0.023 |
| | | | (0.105) | (0.066) | (0.209) | (0.030) | (0.048) | (0.221) |
| Firm Size | | | 0.277*** | 0.177*** | 0.227*** | 0.048 | 0.232*** | 0.033 |
| | | | (0.000) | (0.000) | (0.000) | (0.138) | (0.001) | (0.410) |
| Leverage | | | 0.022* | 0.019** | -0.010 | 0.009 | -0.032 | 0.161*** |
| | | | (0.089) | (0.039) | (0.631) | (0.937) | (0.160) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.188*** | -0.065*** | -0.194*** | -0.080*** |
| | | | | | (0.000) | (0.000) | (0.006) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.892*** | -0.091 | -0.874*** | -0.132 |
| | | | | | (0.000) | (0.354) | (0.000) | (0.274) |
| % Independent Directors | | | | | | | 0.006 | 0.008** |
| | | | | | | | (0.323) | (0.030) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.352 | -0.012 |
| | | | | | | | (0.281) | (0.940) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.218 | 0.079 |
| | | | | | | | (0.454) | (0.617) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 324 | 1324 | 315 | 1288 | 258 | 1071 | 178 | 690 |
| No. of Firm-Years | 17550 | 17550 | 16683 | 16683 | 11003 | 11003 | 7373 | 7373 |
| -2 Log Liklihood | 2856.97 | 11076.83 | 2631.90 | 10741.24 | 2014.77 | 8537.33 | 1293.69 | 5117.74 |

**Table IA.15: Competing risks hazard regressions relating CEO turnover to earnings management using unadjusted accruals scaled by absolute value of firms' cash flow from operations**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Industry indicators are based on 2-digit SIC codes. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type. Performance-adjusted absolute discretionary accruals are computed as the absolute value of firm's accruals scaled by the absolute value of firms' cash flow from operations.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **0.140*****| **0.022** | **0.082***** | **0.019** | **0.051*** | **0.017** | **0.063*** | **0.022** |
| | **(0.000)** | **(0.172)** | **(0.000)** | **(0.253)** | **(0.056)** | **(0.355)** | **(0.064)** | **(0.337)** |
| Industry-Adjusted Firm Return | | | -1.424*** | -0.521*** | -1.465*** | -0.558*** | -1.220*** | -0.466*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.181 | -0.218 | -0.257 | -0.171 | 0.320 | -0.273 |
| | | | (0.551) | (0.131) | (0.460) | (0.271) | (0.413) | (0.142) |
| Operating Performance | | | -0.246 | -0.065 | -0.606 | -0.489 | 0.428 | -0.183 |
| | | | (0.252) | (0.611) | (0.241) | (0.193) | (0.667) | (0.738) |
| Sales Growth | | | -0.259 | 0.000 | -0.249 | 0.041** | -0.718** | -0.131 |
| | | | (0.236) | (0.952) | (0.355) | (0.046) | (0.021) | (0.426) |
| Stock Return Volatility | | | 4.997*** | 0.846 | 4.592*** | 0.120 | 4.538*** | -0.214 |
| | | | (0.000) | (0.111) | (0.000) | (0.843) | (0.000) | (0.775) |
| Market-to-book ratio | | | -0.073 | 0.026* | -0.066 | 0.025** | -0.155* | 0.025 |
| | | | (0.169) | (0.089) | (0.300) | (0.022) | (0.089) | (0.145) |
| Firm Size | | | 0.271*** | 0.189*** | 0.221*** | 0.054* | 0.202*** | 0.035 |
| | | | (0.000) | (0.000) | (0.000) | (0.098) | (0.004) | (0.391) |
| Leverage | | | 0.022 | 0.018** | -0.016 | 0.015 | -0.045** | 0.172*** |
| | | | (0.114) | (0.039) | (0.458) | (0.913) | (0.034) | (0.000) |
| Percentage of CEO Stock ownership | | | | | -0.188*** | -0.068*** | -0.195*** | -0.082*** |
| | | | | | (0.000) | (0.000) | (0.008) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.880*** | -0.088 | -0.816*** | -0.126 |
| | | | | | (0.000) | (0.374) | (0.000) | (0.298) |
| % Independent Directors | | | | | | | 0.006 | 0.007** |
| | | | | | | | (0.362) | (0.049) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.339 | -0.015 |
| | | | | | | | (0.300) | (0.928) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.211 | 0.073 |
| | | | | | | | (0.466) | (0.646) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 322 | 1313 | 314 | 1287 | 257 | 1070 | 177 | 684 |
| No. of Firm-Years | 17191 | 17191 | 16329 | 16329 | 10812 | 10812 | 7248 | 7248 |
| -2 Log Liklihood | 2798.38 | 10957.09 | 2598.42 | 10612.37 | 2001.84 | 8443.17 | 1287.91 | 5062.27 |

**Table IA.16: Competing risks hazard regressions relating CEO turnover to earnings management (truncating earnings management at the 5% and 95% levels)**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Industry indicators are based on 2-digit SIC codes. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type. Performance-adjusted absolute discretionary accruals are truncated at the $5^{th}$ and the $95^{th}$ percentile.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **2.006*** | **0.312** | **2.430**** | **1.034*** | **2.238** | **1.010** | **5.462***** | **1.066** |
| **(Performance-Adjusted Absolute** | **(0.087)** | **(0.589)** | **(0.049)** | **(0.075)** | **(0.109)** | **(0.117)** | **(0.002)** | **(0.190)** |
| **Discretionary Accruals)** | | | | | | | | |
| Industry-Adjusted Firm Return | | | -1.567*** | -0.536*** | -1.679*** | -0.571*** | -1.410*** | -0.455*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.262 | -0.193 | -0.299 | -0.082 | 0.443 | -0.068 |
| | | | (0.466) | (0.252) | (0.468) | (0.651) | (0.361) | (0.757) |
| Operating Performance | | | -0.807 | -0.072 | -0.216 | 0.228 | -0.224 | 0.319 |
| | | | (0.112) | (0.869) | (0.720) | (0.624) | (0.830) | (0.620) |
| Sales Growth | | | -0.770*** | -0.117 | -0.757*** | -0.038 | -0.848** | -0.096 |
| | | | (0.001) | (0.323) | (0.004) | (0.687) | (0.019) | (0.624) |
| Stock Return Volatility | | | 4.980*** | 0.746 | 4.328*** | 0.307 | 3.767*** | -0.644 |
| | | | (0.000) | (0.204) | (0.000) | (0.646) | (0.001) | (0.456) |
| Market-to-book ratio | | | -0.034 | 0.013 | -0.052 | -0.023 | -0.135 | -0.015 |
| | | | (0.501) | (0.704) | (0.459) | (0.407) | (0.208) | (0.725) |
| Firm Size | | | 0.271*** | 0.199*** | 0.216*** | 0.054 | 0.168** | 0.054 |
| | | | (0.000) | (0.000) | (0.001) | (0.117) | (0.034) | (0.225) |
| Leverage | | | 0.022 | 0.017* | -0.013 | 0.012 | -0.043 | 0.221*** |
| | | | (0.126) | (0.066) | (0.558) | (0.927) | (0.131) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.158*** | -0.066*** | -0.164** | -0.073*** |
| | | | | | (0.002) | (0.000) | (0.027) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.845*** | -0.104 | -0.652*** | -0.116 |
| | | | | | (0.000) | (0.328) | (0.003) | (0.403) |
| % Independent Directors | | | | | | | 0.005 | 0.008** |
| | | | | | | | (0.381) | (0.045) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.419 | -0.023 |
| | | | | | | | (0.319) | (0.899) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.188 | 0.109 |
| | | | | | | | (0.555) | (0.524) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 266 | 1173 | 258 | 1152 | 209 | 948 | 129 | 557 |
| No. of Firm-Years | 18138 | 18138 | 17181 | 17181 | 9493 | 9493 | 5969 | 5969 |
| -2 Log Liklihood | 2279.06 | 9655.30 | 2083.80 | 9368.88 | 1589.58 | 7372.07 | 903.26 | 4007.82 |

**Table IA.17: Competing risks hazard regressions relating CEO turnover to earnings management (subtracting the mean discretionary accruals for the corresponding performance deciles)**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Industry indicators are based on 2-digit SIC codes. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type. Absolute discretionary accruals are calculated using the modified Jones model with performance adjustment after subtracting the mean discretionary accruals for the corresponding performance deciles.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management (Performance-Adjusted Absolute Discretionary Accruals)** | **2.167*** (0.007)** | **0.102 (0.806)** | **2.483*** (0.003)** | **0.412 (0.323)** | **2.697*** (0.005)** | **0.368 (0.418)** | **4.362*** (0.000)** | **0.786 (0.161)** |
| Industry-Adjusted Firm Return | | | -1.442*** | -0.522*** | -1.476*** | -0.558*** | -1.243*** | -0.470*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.214 | -0.220 | -0.306 | -0.177 | 0.218 | -0.283 |
| | | | (0.482) | (0.127) | (0.384) | (0.254) | (0.579) | (0.129) |
| Operating Performance | | | -0.295 | -0.071 | -0.710 | -0.513 | 0.347 | -0.230 |
| | | | (0.186) | (0.575) | (0.164) | (0.161) | (0.707) | (0.668) |
| Sales Growth | | | -0.310 | 0.000 | -0.291 | 0.040* | -0.816*** | -0.147 |
| | | | (0.202) | (0.959) | (0.307) | (0.055) | (0.007) | (0.372) |
| Stock Return Volatility | | | 5.237*** | 0.892* | 4.712*** | 0.147 | 4.620*** | -0.186 |
| | | | (0.000) | (0.090) | (0.000) | (0.809) | (0.000) | (0.803) |
| Market-to-book ratio | | | -0.094* | 0.024 | -0.078 | 0.024** | -0.171* | 0.023 |
| | | | (0.088) | (0.133) | (0.231) | (0.032) | (0.064) | (0.200) |
| Firm Size | | | 0.273*** | 0.189*** | 0.233*** | 0.054* | 0.214*** | 0.038 |
| | | | (0.000) | (0.000) | (0.000) | (0.096) | (0.002) | (0.350) |
| Leverage | | | 0.023* | 0.019** | -0.015 | 0.017 | -0.041 | 0.172*** |
| | | | (0.088) | (0.030) | (0.495) | (0.903) | (0.106) | (0.000) |
| Percentage of CEO Stock ownership | | | | | -0.192*** | -0.068*** | -0.203*** | -0.082*** |
| | | | | | (0.000) | (0.000) | (0.008) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.864*** | -0.088 | -0.813*** | -0.124 |
| | | | | | (0.000) | (0.374) | (0.000) | (0.308) |
| % Independent Directors | | | | | | | 0.006 | 0.007** |
| | | | | | | | (0.316) | (0.047) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.336 | -0.008 |
| | | | | | | | (0.295) | (0.962) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.236 | 0.077 |
| | | | | | | | (0.429) | (0.630) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 324 | 1313 | 315 | 1288 | 258 | 1071 | 178 | 684 |
| No. of Firm-Years | 20153 | 20153 | 19040 | 19040 | 10769 | 10769 | 7221 | 7221 |
| -2 Log Liklihood | 2828.94 | 10951.98 | 2606.95 | 10616.53 | 2007.13 | 8446.87 | 1286.86 | 5058.62 |

**Table IA.18: Competing risks hazard regressions relating CEO turnover to earnings management (subtracting the median discretionary accruals for the corresponding performance deciles)**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Industry indicators are based on 2-digit SIC codes. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type. Absolute discretionary accruals are calculated using the modified Jones model with performance adjustment after subtracting off the median discretionary accruals for the corresponding performance deciles.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **2.146***** | **0.076** | **2.462***** | **0.389** | **2.693***** | **0.341** | **4.368***** | **0.754** |
| **(Performance-Adjusted Absolute** | **(0.008)** | **(0.854)** | **(0.003)** | **(0.351)** | **(0.005)** | **(0.453)** | **(0.000)** | **(0.179)** |
| **Discretionary Accruals)** | | | | | | | | |
| Industry-Adjusted Firm Return | | | -1.442*** | -0.522*** | -1.476*** | -0.558*** | -1.243*** | -0.470*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.214 | -0.220 | -0.306 | -0.176 | 0.218 | -0.282 |
| | | | (0.481) | (0.128) | (0.384) | (0.255) | (0.580) | (0.129) |
| Operating Performance | | | -0.295 | -0.071 | -0.711 | -0.513 | 0.344 | -0.231 |
| | | | (0.185) | (0.575) | (0.163) | (0.161) | (0.710) | (0.667) |
| Sales Growth | | | -0.310 | 0.000 | -0.291 | 0.040* | -0.817*** | -0.146 |
| | | | (0.203) | (0.958) | (0.307) | (0.054) | (0.007) | (0.373) |
| Stock Return Volatility | | | 5.239*** | 0.894* | 4.716*** | 0.150 | 4.624*** | -0.183 |
| | | | (0.000) | (0.090) | (0.000) | (0.805) | (0.000) | (0.806) |
| Market-to-book ratio | | | -0.094* | 0.024 | -0.078 | 0.024** | -0.171* | 0.023 |
| | | | (0.088) | (0.132) | (0.231) | (0.032) | (0.064) | (0.199) |
| Firm Size | | | 0.273*** | 0.189*** | 0.233*** | 0.054* | 0.214*** | 0.038 |
| | | | (0.000) | (0.000) | (0.000) | (0.096) | (0.002) | (0.352) |
| Leverage | | | 0.023* | 0.019** | -0.015 | 0.017 | -0.041 | 0.172*** |
| | | | (0.087) | (0.030) | (0.495) | (0.903) | (0.107) | (0.000) |
| Percentage of CEO Stock ownership | | | | | -0.192*** | -0.068*** | -0.203*** | -0.082*** |
| | | | | | (0.000) | (0.000) | (0.008) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.863*** | -0.088 | -0.812*** | -0.124 |
| | | | | | (0.000) | (0.374) | (0.000) | (0.309) |
| % Independent Directors | | | | | | | 0.006 | 0.007** |
| | | | | | | | (0.316) | (0.047) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.336 | -0.008 |
| | | | | | | | (0.295) | (0.961) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.236 | 0.077 |
| | | | | | | | (0.428) | (0.630) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 324 | 1313 | 315 | 1288 | 258 | 1071 | 178 | 684 |
| No. of Firm-Years | 20153 | 20153 | 19040 | 19040 | 10769 | 10769 | 7221 | 7221 |
| -2 Log Liklihood | 2829.00 | 10952.00 | 2607.02 | 10616.58 | 2007.14 | 8446.91 | 1286.82 | 5058.69 |

**Table IA.19: Results from Propensity Score Matching Tests**

This table reports means and medians of earnings management for forced CEO turnovers and contrasts them with those pertaining to matched samples of voluntary CEO resignations and no-turnovers. From the clean sample of 1,637 firm-years related to CEO turnover during the period 1992-2004 and the 18,516 firm-years in which CEOs remained in office at the end of the year, matched samples of i) forced and voluntary CEO turnovers, and ii) forced and no turnovers are derived using the propensity score matching. For models 2 through 4 reported throughout the paper, the propensity score matching is undertaken after controlling for the firm- and CEO-specific characteristics on the right hand side (barring the earnings management variable) in a logistic regression framework. A parametric t-test and Wilcoxon test are used to compare forced with voluntary turnovers and no-turnovers of CEOs.

| Earnings Management / Model | Forced vs. Voluntary Turnover of CEOs | | | | Forced vs. No Turnover of CEOs | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean (Median) | | t-test of equality of means p-value | Wilcoxon test p-value | Mean (Median) | | t-test of equality of means p-value | Wilcoxon test p-value |
| | Forced | Voluntary | | | Forced | No Turnover | | |
| Model 2 | 0.097 (0.067) | 0.084 (0.058) | 0.019 | 0.056 | 0.097 (0.067) | 0.089 (0.059) | 0.110 | 0.089 |
| Model 3 | 0.098 (0.067) | 0.086 (0.061) | 0.049 | 0.040 | 0.098 (0.067) | 0.082 (0.051) | 0.014 | 0.012 |
| Model 4 | 0.109 (0.082) | 0.079 (0.045) | 0.000 | 0.000 | 0.109 (0.082) | 0.080 (0.056) | 0.000 | 0.002 |

## Table IA.20: Earnings management and CFO job tenure

Estimates from TOBIT regressions that examine the determinants of CFO job tenure. In models 1 to 4, the sample consists of both forced and voluntary CEO turnovers from 1992-2004. Models 5 and 6 include forced CEO turnovers only. In each regression the dependent variable is the log of CEO tenure in years. Each explanatory variable is measured as its median annual value during the CEO's tenure. Explanatory variables are defined in the Appendix of the paper. The regressions include unreported industry indicators based on 2-digit SIC codes. Two-sided p-values are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| Variable | Log (CFO Tenure in Years) | | | | | |
|---|---|---|---|---|---|---|
| | All Turnovers | | | | Forced Turnovers | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **Earnings Management** | **-1.572*****<br>**(0.000)** | **-1.427*****<br>**(0.005)** | **-0.806***<br>**(0.089)** | **-1.212****<br>**(0.016)** | **-1.594****<br>**(0.030)** | **0.421**<br>**(0.560)** |
| Forced Indicator | | | | -0.040***<br>(0.009) | | |
| Earnings Management *Forced Indicator | | | | 0.886*<br>(0.065) | | |
| Industry-Adjusted Firm Return | | 0.209**<br>(0.033) | 0.262***<br>(0.006) | 0.263***<br>(0.005) | 0.165<br>(0.180) | 0.281**<br>(0.027) |
| Cumulative Industry Return | | 0.345*<br>(0.055) | 0.195<br>(0.250) | 0.190<br>(0.259) | 0.201<br>(0.394) | -0.010<br>(0.963) |
| Operating Performance | | -0.130<br>(0.604) | -0.171<br>(0.553) | -0.191<br>(0.504) | -0.270<br>(0.378) | -0.812**<br>(0.034) |
| Sales Growth | | -0.221**<br>(0.019) | -0.154<br>(0.137) | -0.195*<br>(0.063) | -0.289**<br>(0.012) | -0.300**<br>(0.018) |
| Stock Return Volatility | | 0.382<br>(0.490) | -1.355***<br>(0.008) | -1.364***<br>(0.008) | -0.291<br>(0.686) | -2.577***<br>(0.000) |
| Market-to-book ratio | | -0.007<br>(0.537) | -0.005<br>(0.626) | -0.007<br>(0.545) | -0.000<br>(0.991) | 0.002<br>(0.846) |
| Firm Size | | 0.040**<br>(0.046) | 0.023<br>(0.238) | 0.021<br>(0.283) | 0.056*<br>(0.057) | 0.058**<br>(0.035) |
| Leverage | | -0.012<br>(0.622) | -0.052<br>(0.164) | -0.054<br>(0.143) | -0.015<br>(0.611) | -0.020<br>(0.768) |
| Percentage of CEO Stock Ownership | | | -0.029<br>(0.572) | -0.041<br>(0.429) | | -0.022<br>(0.759) |
| CEO- Chairperson Duality Indicator | | | 0.003<br>(0.440) | 0.004<br>(0.299) | | 0.015**<br>(0.014) |
| % Independent Directors | | | -0.001<br>(0.206) | -0.001<br>(0.153) | | -0.004***<br>(0.005) |
| Democracy Firm (GIM Index < 6) | | | 0.066<br>(0.289) | 0.067<br>(0.277) | | 0.079<br>(0.320) |
| Dictatorship Firm (GIM Index > 12) | | | 0.011<br>(0.884) | -0.002<br>(0.980) | | 0.020<br>(0.885) |
| Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of Observations | 608 | 543 | 302 | 302 | 220 | 125 |
| - Log Likelihood | 654.52 | 579.91 | 236.15 | 231.24 | 270.23 | 90.65 |

**Table IA. 21: Competing risks hazard regressions relating CEO turnover to earnings management (marking CEO turnover as forced if there was forced CFO turnover in the year before, during or after CEO turnover)**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Year dummies and industry indicators based on 2-digit SIC codes are included in the regressions but not reported. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **2.438***** | **-0.046** | **2.723***** | **0.252** | **2.893***** | **0.175** | **3.940***** | **0.784** |
| **(Performance-Adjusted Absolute** | **(0.001)** | **(0.914)** | **(0.000)** | **(0.557)** | **(0.001)** | **(0.707)** | **(0.000)** | **(0.172)** |
| **Discretionary Accruals)** | | | | | | | | |
| Industry-Adjusted Firm Return | | | -1.350*** | -0.500*** | -1.342*** | -0.546*** | -1.247*** | -0.431*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.375 | -0.169 | -0.512* | -0.104 | -0.067 | -0.217 |
| | | | (0.164) | (0.262) | (0.089) | (0.519) | (0.855) | (0.259) |
| Operating Performance | | | -0.217 | -0.082 | -0.505 | -0.581 | 0.199 | -0.204 |
| | | | (0.270) | (0.517) | (0.262) | (0.121) | (0.805) | (0.713) |
| Sales Growth | | | -0.224 | 0.000 | -0.160 | 0.040* | -0.531** | -0.200 |
| | | | (0.217) | (0.974) | (0.353) | (0.086) | (0.029) | (0.276) |
| Stock Return Volatility | | | 4.903*** | 0.819 | 4.100*** | 0.107 | 4.054*** | -0.081 |
| | | | (0.000) | (0.128) | (0.000) | (0.864) | (0.000) | (0.913) |
| Market-to-book ratio | | | -0.078* | 0.026 | -0.062 | 0.026** | -0.135 | 0.024 |
| | | | (0.098) | (0.108) | (0.253) | (0.024) | (0.102) | (0.223) |
| Firm Size | | | 0.239*** | 0.197*** | 0.171*** | 0.065* | 0.160** | 0.050 |
| | | | (0.000) | (0.000) | (0.002) | (0.052) | (0.019) | (0.227) |
| Leverage | | | 0.021 | 0.019** | -0.009 | 0.017 | -0.035 | 0.178*** |
| | | | (0.118) | (0.033) | (0.674) | (0.911) | (0.109) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.120*** | -0.070*** | -0.147*** | -0.083*** |
| | | | | | (0.000) | (0.000) | (0.000) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.715*** | -0.093 | -0.712*** | -0.127 |
| | | | | | (0.000) | (0.358) | (0.000) | (0.302) |
| % Independent Directors | | | | | | | 0.006 | 0.008** |
| | | | | | | | (0.314) | (0.035) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.347 | 0.004 |
| | | | | | | | (0.250) | (0.982) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.214 | 0.081 |
| | | | | | | | (0.444) | (0.616) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 387 | 1250 | 378 | 1225 | 314 | 1015 | 205 | 657 |
| No. of Firm-Years | 20153 | 20153 | 19040 | 19040 | 10769 | 10769 | 7221 | 7221 |
| -2 Log Liklihood | 3361.64 | 10421.84 | 3138.54 | 10091.42 | 2480.48 | 7995.89 | 1499.40 | 4857.45 |

**Table IA.22: Earnings management and CEO job tenure (marking CEO turnover as forced if there was forced CFO turnover in the year before, during or after CEO turnover)**

Estimates from TOBIT regressions that examine the determinants of CEO job tenure. In models 1 to 4, the sample consists of both forced and voluntary CEO turnovers from 1992-2004. Models 5 and 6 include forced CEO turnovers only. In each regression the dependent variable is the log of CEO tenure in years. Each explanatory variable is measured as its median annual value during the CEO's tenure. Explanatory variables are defined in the Appendix of the paper. The regressions include unreported industry indicators based on 2-digit SIC codes. Two-sided p-values are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| Variable | Log (CEO Tenure in Years) | | | | | |
|---|---|---|---|---|---|---|
| | All Turnovers | | | | Forced Turnovers | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **Earnings Management** | **-3.870*** ** | **-2.683*** ** | **-2.925*** ** | **-1.982** ** | **-3.181*** ** | **-3.882*** ** |
| | **(0.000)** | **(0.000)** | **(0.000)** | **(0.011)** | **(0.001)** | **(0.000)** |
| Forced Indicator | | | | -0.023 | | |
| | | | | (0.836) | | |
| Earnings Management *Forced Indicator | | | | -1.798* | | |
| | | | | (0.094) | | |
| Industry-Adjusted Firm Return | | 0.838*** | 0.807*** | 0.771*** | 0.794*** | 0.543*** |
| | | (0.000) | (0.000) | (0.000) | (0.000) | (0.005) |
| Cumulative Industry Return | | 0.448** | 0.733*** | 0.757*** | 0.540* | 0.512 |
| | | (0.010) | (0.001) | (0.000) | (0.075) | (0.135) |
| Operating Performance | | 0.469* | 0.422 | 0.359 | 0.247 | -0.072 |
| | | (0.059) | (0.291) | (0.367) | (0.650) | (0.922) |
| Sales Growth | | -0.017 | 0.458*** | 0.434*** | 0.195** | 1.455*** |
| | | (0.274) | (0.000) | (0.000) | (0.041) | (0.000) |
| Stock Return Volatility | | -4.513*** | -5.019*** | -4.812*** | -3.985*** | -3.654*** |
| | | (0.000) | (0.000) | (0.000) | (0.000) | (0.005) |
| Market-to-book ratio | | 0.005 | -0.026 | -0.025 | 0.020 | -0.080* |
| | | (0.761) | (0.297) | (0.315) | (0.470) | (0.051) |
| Firm Size | | -0.164*** | -0.180*** | -0.174*** | -0.156*** | -0.191*** |
| | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Leverage | | -0.036 | -0.059 | -0.060 | -0.048 | -0.123 |
| | | (0.319) | (0.236) | (0.225) | (0.538) | (0.680) |
| Percentage of CEO Stock Ownership | | | 0.024*** | 0.022*** | | 0.013 |
| | | | (0.000) | (0.000) | | (0.473) |
| CEO-Chairperson Duality Indicator | | | 0.476*** | 0.464*** | | 0.490*** |
| | | | (0.000) | (0.000) | | (0.000) |
| Independent Directors (Normalized) | | | -0.005** | -0.005** | | 0.002 |
| | | | (0.031) | (0.023) | | (0.715) |
| Democracy Firm (GIM Index < 6) | | | 0.083 | 0.082 | | 0.244 |
| | | | (0.402) | (0.407) | | (0.234) |
| Dictatorship Firm (GIM Index > 12) | | | -0.258*** | -0.258*** | | -0.218 |
| | | | (0.007) | (0.007) | | (0.263) |
| Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of Observations | 1637 | 1603 | 862 | 862 | 378 | 205 |
| - Log Likelihood | 2260.94 | 2083.90 | 1103.89 | 1099.73 | 473.48 | 234.58 |

**Table IA.23: Logistic regressions relating CEO & CFO turnovers to earnings management**
Estimates from logistic regressions that examine the likelihood of forced CEO and CFO turnovers. The dependent variable in all four models takes a value of 1 if the CEO or CFO turnover is classified as forced, and zero otherwise. If there are CFO and CEO forced turnovers in subsequent years, then the second turnover is deleted from the sample. Explanatory variables are defined in the Appendix of the paper. Intercept is included in the regressions and reported. Two-sided p-values are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| Variable | (1) Turnover Outcome Forced=1 | (2) Turnover Outcome Forced=1 | (3) Turnover Outcome Forced=1 | (4) Turnover Outcome Forced=1 |
|---|---|---|---|---|
| **Earnings Management (Performance-Adjusted Absolute Discretionary Accruals)** | **2.866*** (0.000)** | **2.265*** (0.001)** | **1.327* (0.054)** | **2.266*** (0.004)** |
| Industry-Adjusted Firm Return | | -1.538*** | -1.405*** | -1.299*** |
| | | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | -0.060 | -0.090 | -0.018 |
| | | (0.766) | (0.662) | (0.941) |
| Operating Performance | | 0.047 | -0.133 | -0.955* |
| | | (0.828) | (0.670) | (0.097) |
| Sales Growth | | -0.256* | -0.192* | -0.317 |
| | | (0.071) | (0.054) | (0.105) |
| Stock Return Volatility | | 6.078*** | 4.912*** | 4.502*** |
| | | (0.000) | (0.000) | (0.000) |
| Market-to-book ratio | | 0.059*** | 0.047*** | 0.065*** |
| | | (0.000) | (0.004) | (0.002) |
| Firm Size | | 0.243*** | 0.075** | 0.104** |
| | | (0.000) | (0.050) | (0.024) |
| Leverage | | 0.017 | 0.066 | 0.044 |
| | | (0.125) | (0.187) | (0.521) |
| Percentage of CEO Stock Ownership | | | -0.046*** | -0.066*** |
| | | | (0.002) | (0.002) |
| CEO- Chairperson Duality Indicator | | | -0.107 | -0.024 |
| | | | (0.334) | (0.859) |
| % Independent Directors | | | | -0.003 |
| | | | | (0.642) |
| Democracy Firm (GIM Index < 6) | | | | 0.177 |
| | | | | (0.398) |
| Dictatorship Firm (GIM Index > 12) | | | | -0.251 |
| | | | | (0.286) |
| Intercept | -3.990*** | -6.544*** | -4.577*** | -4.815*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Number of Forced Turnovers | 462 | 439 | 375 | 252 |
| Number of Firm-Years | 20140 | 19010 | 10746 | 7366 |
| - Log Likelihood | 2189.97 | 1903.62 | 1512.45 | 1014.81 |

## Table IA.24: Logistic regressions relating earnings management to forced versus voluntary CEO turnovers

Estimates from logistic regressions that examine the likelihood of forced vs. voluntary CEO turnovers. The dependent variable in all four models takes a value of 0 if the turnover is classified as voluntary, and, 1 if the turnover is classified as forced. Explanatory variables are defined in the Appendix of the paper. Intercept, year dummies, and industry indicators based on 2-digit SIC codes are included in the regressions but not reported. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | (2) Turnover Outcome | (3) Turnover Outcome | (4) Turnover Outcome |
|---|---|---|---|---|
| Variable | Forced | Forced | Forced | Forced |
| **Earnings Management (Performance-Adjusted Absolute Discretionary Accruals)** | **2.204**** | **2.420**** | **2.217*** | **3.526**** |
| | **(0.024)** | **(0.021)** | **(0.069)** | **(0.011)** |
| Industry-Adjusted Firm Return | | -1.055*** | -0.994*** | -0.847*** |
| | | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | -0.141 | -0.192 | 0.281 |
| | | (0.674) | (0.600) | (0.499) |
| Operating Performance | | -0.716 | -0.380 | 0.868 |
| | | (0.131) | (0.547) | (0.541) |
| Sales Growth | | -0.203 | -0.251 | -0.512* |
| | | (0.189) | (0.201) | (0.086) |
| Stock Return Volatility | | 6.024*** | 5.502*** | 6.550*** |
| | | (0.000) | (0.000) | (0.000) |
| Market-to-book ratio | | -0.080* | -0.099* | -0.180* |
| | | (0.067) | (0.081) | (0.089) |
| Firm Size | | 0.145*** | 0.170*** | 0.218*** |
| | | (0.004) | (0.007) | (0.005) |
| Leverage | | -0.002 | -0.008 | -0.366 |
| | | (0.913) | (0.788) | (0.292) |
| Percentage of CEO Stock Ownership | | | -0.103** | -0.099* |
| | | | (0.019) | (0.090) |
| CEO- Chairperson Duality Indicator | | | -0.876*** | -0.799*** |
| | | | (0.000) | (0.000) |
| % Independent Directors | | | | 0.000 |
| | | | | (0.977) |
| Democracy Firm (GIM Index < 6) | | | | -0.408 |
| | | | | (0.346) |
| Dictatorship Firm (GIM Index > 12) | | | | 0.048 |
| | | | | (0.884) |
| Industry Indicators | Yes | Yes | Yes | Yes |
| Number of Forced Turnovers | 324 | 315 | 258 | 178 |
| Number of Turnovers | 1637 | 1603 | 1329 | 862 |
| Pseudo $R^2$ | 0.06 | 0.13 | 0.16 | 0.17 |

**Table IA.25: Competing risks hazard regressions relating CEO turnover to earnings management for the criterion (i) forced sample**
Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Year dummies and industry indicators based on 2-digit SIC codes are included in the regressions but not reported. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management (Performance-Adjusted Absolute Discretionary Accruals)** | **7.137*** (0.000)** | **0.336 (0.374)** | **7.398*** (0.000)** | **0.618 (0.104)** | **7.463*** (0.002)** | **0.597 (0.151)** | **9.199*** (0.003)** | **1.258** (0.014)** |
| Industry-Adjusted Firm Return | | | -1.904*** (0.000) | -0.698*** (0.000) | -1.966*** (0.000) | -0.731*** (0.000) | -1.780*** (0.000) | -0.633*** (0.000) |
| Cumulative Industry Return | | | 1.657*** (0.008) | -0.293** (0.027) | 1.566* (0.052) | -0.270* (0.058) | 1.563* (0.067) | -0.252 (0.142) |
| Operating Performance | | | 0.141 (0.683) | -0.101 (0.411) | 0.786 (0.641) | -0.679** (0.021) | 7.048** (0.031) | -0.348 (0.468) |
| Sales Growth | | | -0.257 (0.402) | -0.004 (0.825) | -0.181 (0.677) | 0.014 (0.581) | -0.443 (0.400) | -0.282* (0.073) |
| Stock Return Volatility | | | 6.379*** (0.000) | 2.037*** (0.000) | 5.690*** (0.007) | 1.122** (0.030) | 5.405** (0.016) | 1.009 (0.105) |
| Market-to-book ratio | | | 0.037 (0.121) | 0.007 (0.705) | 0.017 (0.696) | 0.014 (0.259) | -0.323 (0.262) | 0.009 (0.679) |
| Firm Size | | | 0.430*** (0.000) | 0.198*** (0.000) | 0.403*** (0.006) | 0.080*** (0.009) | 0.530*** (0.004) | 0.057 (0.128) |
| Leverage | | | 0.024 (0.552) | 0.019*** (0.006) | -0.033 (0.310) | 0.015 (0.877) | -0.049* (0.067) | 0.136*** (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.133 (0.118) | -0.079*** (0.000) | -0.124 (0.259) | -0.094*** (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.775** (0.026) | -0.246*** (0.006) | -1.029** (0.017) | -0.256** (0.019) |
| % Independent Directors | | | | | | | 0.023* (0.062) | 0.007** (0.032) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.436 (0.649) | -0.088 (0.566) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -1.429 (0.202) | 0.057 (0.696) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 63 | 1574 | 60 | 1543 | 47 | 1282 | 31 | 831 |
| No. of Firm-Years | 20153 | 20153 | 19040 | 19040 | 10769 | 10769 | 7221 | 7221 |
| -2 Log Liklihood | 521.64 | 13280.66 | 453.21 | 12826.28 | 328.15 | 10184.81 | 189.78 | 6199.27 |

## Table IA.26: Earnings management and CEO job tenure for the criterion (i) forced sample

Estimates from TOBIT regressions that examine the determinants of CEO job tenure. In models 1 to 4, the sample consists of both forced and voluntary CEO turnovers from 1992-2004. Models 5 and 6 include forced CEO turnovers only. In each regression the dependent variable is the log of CEO tenure in years. Each explanatory variable is measured as its median annual value during the CEO's tenure. Explanatory variables are defined in the Appendix of the paper. Models 1 through 4 include unreported industry indicators based on 2-digit SIC codes. Two-sided p-values are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| Variable | Log (CEO Tenure in Years) | | | | | |
|---|---|---|---|---|---|---|
| | All Turnovers | | | | Forced Turnovers | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **Earnings Management** | **-3.870***<br>(0.000)** | **-2.683***<br>(0.000)** | **-2.925***<br>(0.000)** | **-2.694***<br>(0.000)** | **-0.539<br>(0.766)** | **-3.831**<br>(0.029)** |
| Forced Indicator | | | | -0.042<br>(0.867) | | |
| Earnings Management *Forced Indicator | | | | -1.698<br>(0.395) | | |
| Industry-Adjusted Firm Return | | 0.838***<br>(0.000) | 0.807***<br>(0.000) | 0.798***<br>(0.000) | 1.401***<br>(0.001) | 0.463<br>(0.321) |
| Cumulative Industry Return | | 0.448**<br>(0.010) | 0.733***<br>(0.001) | 0.751***<br>(0.000) | 1.001<br>(0.165) | 0.064<br>(0.927) |
| Operating Performance | | 0.469*<br>(0.059) | 0.422<br>(0.291) | 0.457<br>(0.252) | -1.672<br>(0.167) | -0.557<br>(0.753) |
| Sales Growth | | -0.017<br>(0.274) | 0.458***<br>(0.000) | 0.461***<br>(0.000) | 0.013<br>(0.973) | 1.761<br>(0.114) |
| Stock Return Volatility | | -4.513***<br>(0.000) | -5.019***<br>(0.000) | -5.034***<br>(0.000) | -5.554**<br>(0.021) | -8.240**<br>(0.016) |
| Market-to-book ratio | | 0.005<br>(0.761) | -0.026<br>(0.297) | -0.027<br>(0.272) | -0.128<br>(0.142) | -0.026<br>(0.868) |
| Firm Size | | -0.164***<br>(0.000) | -0.180***<br>(0.000) | -0.177***<br>(0.000) | -0.048<br>(0.459) | -0.048<br>(0.597) |
| Leverage | | -0.036<br>(0.319) | -0.059<br>(0.236) | -0.061<br>(0.222) | -0.095<br>(0.815) | 0.478<br>(0.579) |
| Percentage of CEO Stock Ownership | | | 0.024***<br>(0.000) | 0.024***<br>(0.000) | | 0.080<br>(0.112) |
| CEO-Chairperson Duality Indicator | | | 0.476***<br>(0.000) | 0.474***<br>(0.000) | | 0.620**<br>(0.019) |
| Independent Directors (Normalized) | | | -0.005**<br>(0.031) | -0.005**<br>(0.028) | | -0.003<br>(0.741) |
| Democracy Firm (GIM Index < 6) | | | 0.083<br>(0.402) | 0.085<br>(0.389) | | 0.645<br>(0.166) |
| Dictatorship Firm (GIM Index > 12) | | | -0.258***<br>(0.007) | -0.259***<br>(0.007) | | 0.334<br>(0.464) |
| Industry Indicators | Yes | Yes | Yes | Yes | No | No |
| Number of Observations | 1637 | 1603 | 862 | 862 | 61 | 32 |
| - Log Likelihood | 2260.94 | 2083.90 | 1103.89 | 1102.61 | 71.32 | 25.84 |

**Table IA.27: Competing risks hazard regressions relating CEO turnover to earnings management (controlling for accrual reversals)**

Estimates from competing risks hazard regressions that examine the likelihood of forced and voluntary CEO turnovers. The Cox Proportional Hazard model is estimated with a CEO's time-to-turnover measured as the number of years the CEO is in office. Time-to-turnover for CEOs in office as on December 31, 2004 is right censored. A positive coefficient indicates that the covariate increases the hazard and shortens the expected time to CEO turnover; negative coefficients imply a longer time to turnover. Explanatory variables are defined in the Appendix of the paper. Year dummies and industry indicators based on 2-digit SIC codes are included in the regressions but not reported. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| | (1) Turnover Outcome | | (2) Turnover Outcome | | (3) Turnover Outcome | | (4) Turnover Outcome | |
|---|---|---|---|---|---|---|---|---|
| Variable | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary | Forced | Voluntary |
| **Earnings Management** | **2.424**** | **-0.230** | **2.715***** | **-0.082** | **2.611**** | **0.063** | **4.847***** | **0.553** |
| **(Performance-Adjusted Absolute Discretionary Accruals)** | **(0.012)** | **(0.652)** | **(0.006)** | **(0.872)** | **(0.023)** | **(0.907)** | **(0.000)** | **(0.403)** |
| EM when positive discretionary accruals at t-1 | -0.843 | 0.628 | -0.683 | 0.912 | -0.354 | 0.609 | -1.617 | 0.465 |
| and negative discretionary accruals at t-2 | (0.433) | (0.319) | (0.539) | (0.144) | (0.770) | (0.359) | (0.200) | (0.552) |
| EM when negative discretionary accruals at t-1 | 0.001 | 1.106 | -0.262 | 0.977 | 0.025 | 0.647 | -0.448 | 0.377 |
| and positive discretionary accruals at t-2 | (0.999) | (0.101) | (0.832) | (0.156) | (0.985) | (0.383) | (0.776) | (0.681) |
| Industry-Adjusted Firm Return | | | -1.491*** | -0.524*** | -1.535*** | -0.556*** | -1.295*** | -0.478*** |
| | | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cumulative Industry Return | | | -0.076 | -0.289* | -0.221 | -0.227 | 0.289 | -0.318* |
| | | | (0.808) | (0.053) | (0.550) | (0.154) | (0.470) | (0.092) |
| Operating Performance | | | -0.183 | -0.014 | -0.378 | -0.431 | 0.529 | -0.247 |
| | | | (0.418) | (0.917) | (0.478) | (0.264) | (0.586) | (0.651) |
| Sales Growth | | | -0.511* | 0.000 | -0.621** | 0.041* | -0.830*** | -0.160 |
| | | | (0.058) | (0.979) | (0.011) | (0.078) | (0.009) | (0.349) |
| Stock Return Volatility | | | 5.276*** | 0.737 | 4.725*** | -0.028 | 4.672*** | -0.266 |
| | | | (0.000) | (0.172) | (0.000) | (0.965) | (0.000) | (0.726) |
| Market-to-book ratio | | | -0.076 | 0.029* | -0.056 | 0.026** | -0.187* | 0.030* |
| | | | (0.167) | (0.063) | (0.377) | (0.020) | (0.060) | (0.064) |
| Firm Size | | | 0.260*** | 0.165*** | 0.210*** | 0.035 | 0.211*** | 0.018 |
| | | | (0.000) | (0.000) | (0.000) | (0.291) | (0.004) | (0.671) |
| Leverage | | | 0.024* | 0.015 | -0.007 | -0.018 | -0.042 | 0.143*** |
| | | | (0.061) | (0.254) | (0.764) | (0.595) | (0.117) | (0.000) |
| Percentage of CEO Stock Ownership | | | | | -0.187*** | -0.069*** | -0.200*** | -0.084*** |
| | | | | | (0.000) | (0.000) | (0.008) | (0.000) |
| CEO- Chairperson Duality Indicator | | | | | -0.835*** | -0.073 | -0.774*** | -0.098 |
| | | | | | (0.000) | (0.465) | (0.000) | (0.423) |
| % Independent Directors | | | | | | | 0.007 | 0.007* |
| | | | | | | | (0.260) | (0.060) |
| Democracy Firm (GIM Index < 6) | | | | | | | -0.304 | -0.044 |
| | | | | | | | (0.348) | (0.791) |
| Dictatorship Firm (GIM Index > 12) | | | | | | | -0.184 | 0.071 |
| | | | | | | | (0.539) | (0.662) |
| Year and Industry Indicators | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Turnovers | 308 | 1251 | 300 | 1233 | 246 | 1026 | 173 | 657 |
| No. of Firm-Years | 19222 | 19222 | 18514 | 18514 | 10550 | 10550 | 7103 | 7103 |
| -2 Log Liklihood | 2678.35 | 10392.34 | 2471.94 | 10147.99 | 1906.34 | 8080.09 | 1243.24 | 4854.18 |

**Table IA.28: Probit regressions relating special and extraordinary items (including restructuring charges), and operating volatility to forced CEO turnovers**

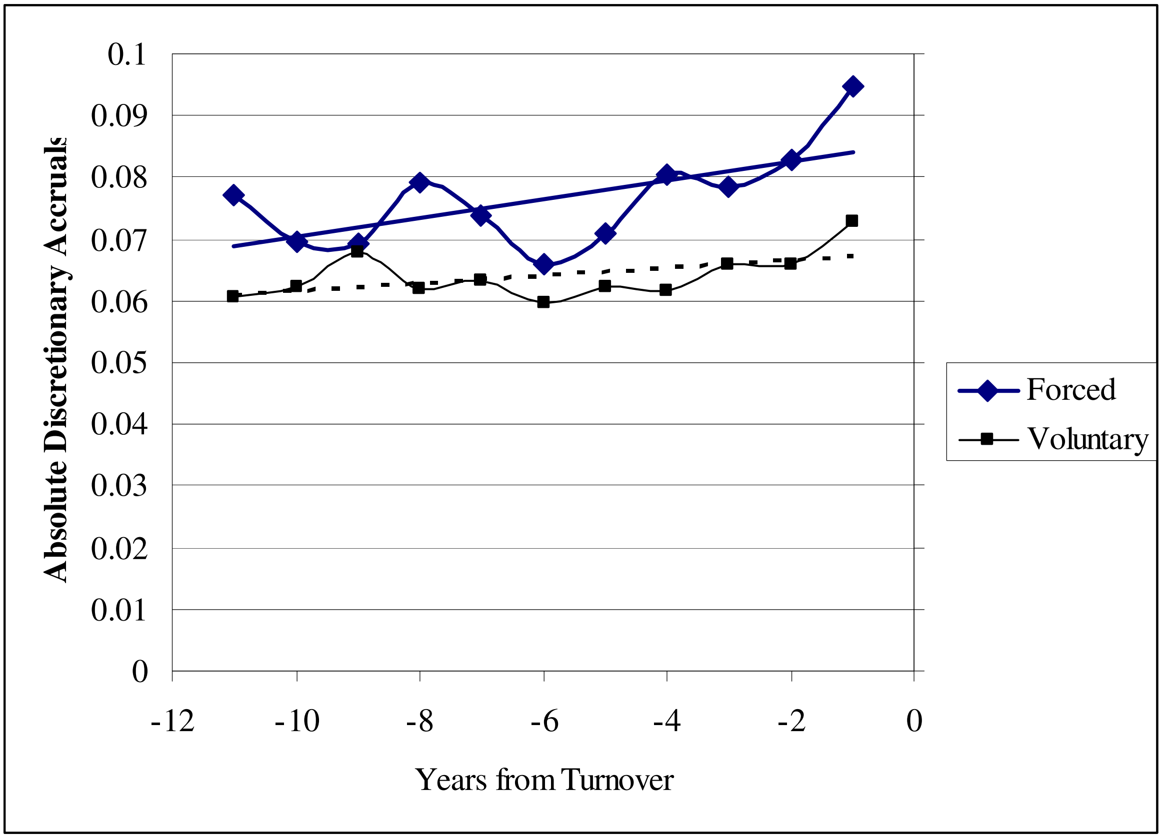
Estimates from probit regressions where the dependent variable takes a value of 1 if the turnover is classified as forced, and zero otherwise. Explanatory variables are defined in the Appendix of the paper. Intercept, year dummies, and industry indicators based on 2-digit SIC codes are included in the regressions but not reported. Two-sided p-values, adjusted for firm-CEO clustering, are in parentheses beneath the coefficient estimates. Coefficients and p-values for the earnings management variable are in boldface type.

| Variable | (1) Turnover Outcome | (2) Turnover Outcome | (3) Turnover Outcome | (4) Turnover Outcome | (5) Turnover Outcome | (6) Turnover Outcome |
|---|---|---|---|---|---|---|
| **Earnings Management (Performance-Adjusted Absolute Discretionary Accruals)** | **1.820***<br>(0.000)** | **1.873***<br>(0.000)** | **1.935***<br>(0.000)** | **1.941***<br>(0.000)** | **1.880***<br>(0.000)** | **1.889***<br>(0.000)** |
| Special items, extraordinary items and restructuring Charges | -0.965<br>(0.122) | -1.280*<br>(0.051) | | | -0.993<br>(0.114) | -1.278*<br>(0.052) |
| Operating Earnings Volatility | | | -0.885<br>(0.270) | -0.300<br>(0.672) | -0.967<br>(0.247) | -0.316<br>(0.669) |
| Industry-Adjusted Firm Return | -0.716***<br>(0.000) | -0.635***<br>(0.000) | -0.740***<br>(0.000) | -0.655***<br>(0.000) | -0.728***<br>(0.000) | -0.638***<br>(0.000) |
| Cumulative Industry Return | 0.193<br>(0.148) | 0.133<br>(0.451) | 0.154<br>(0.255) | 0.120<br>(0.503) | 0.181<br>(0.187) | 0.132<br>(0.463) |
| Operating Performance | 0.267<br>(0.508) | 0.039<br>(0.923) | 0.050<br>(0.904) | -0.073<br>(0.859) | 0.110<br>(0.799) | -0.011<br>(0.979) |
| Sales Growth | -0.315***<br>(0.006) | -0.287**<br>(0.014) | -0.346***<br>(0.003) | -0.305**<br>(0.010) | -0.319***<br>(0.006) | -0.288**<br>(0.014) |
| Stock Return Volatility | 2.909***<br>(0.000) | 2.429***<br>(0.000) | 3.097***<br>(0.000) | 2.590***<br>(0.000) | 2.991***<br>(0.000) | 2.455***<br>(0.000) |
| Market-to-book ratio | -0.068*<br>(0.058) | -0.071*<br>(0.057) | -0.058<br>(0.115) | -0.070*<br>(0.074) | -0.058<br>(0.113) | -0.069*<br>(0.076) |
| Firm Size | 0.094***<br>(0.000) | 0.100***<br>(0.000) | 0.087***<br>(0.001) | 0.099***<br>(0.001) | 0.087***<br>(0.001) | 0.098***<br>(0.001) |
| Leverage | -0.012<br>(0.481) | -0.018<br>(0.108) | -0.010<br>(0.639) | -0.016<br>(0.245) | -0.013<br>(0.408) | -0.019<br>(0.105) |
| Percentage of CEO Stock Ownership | -0.044**<br>(0.025) | -0.045**<br>(0.014) | -0.044**<br>(0.026) | -0.045**<br>(0.014) | -0.044**<br>(0.027) | -0.045**<br>(0.015) |
| CEO- Chairperson Duality Indicator | -0.151**<br>(0.035) | -0.192**<br>(0.013) | -0.151**<br>(0.035) | -0.189**<br>(0.014) | -0.150**<br>(0.037) | -0.191**<br>(0.013) |
| % Independent Directors | 0.001<br>(0.818) | 0.001<br>(0.756) | 0.001<br>(0.770) | 0.001<br>(0.713) | 0.001<br>(0.765) | 0.001<br>(0.707) |
| Democracy Firm (GIM Index < 6) | -0.046<br>(0.737) | -0.074<br>(0.601) | -0.056<br>(0.684) | -0.090<br>(0.527) | -0.046<br>(0.737) | -0.074<br>(0.598) |
| Dictatorship Firm (GIM Index > 12) | -0.082<br>(0.483) | -0.094<br>(0.446) | -0.086<br>(0.465) | -0.097<br>(0.436) | -0.087<br>(0.461) | -0.095<br>(0.443) |
| Year and Industry Indicators | No | Yes | No | Yes | No | Yes |
| No. of Turnovers | 178 | 178 | 178 | 178 | 178 | 178 |
| No. of Firm-Years | 7216 | 5589 | 7217 | 5589 | 7212 | 5585 |
| -2 Log Liklihood | 727.03 | 665.73 | 727.85 | 667.52 | 726.27 | 665.46 |

**Figure 1:**

**Earnings management in the years before CEO turnovers**

The smaller black squares represent our measure of earnings management (absolute abnormal discretionary accruals divided by assets) in the eleven years before CEO turnovers that are classified as voluntary. The accompanying dotted line shows the linear fit to these data. The upper diamond-shaped points represent our measure of earnings management in the eleven years before CEO turnovers that are classified as forced. The accompanying solid line shows the linear fit to these data.



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