Entrenchment and Changes in Performance Following CEO Turnover

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Abstract

In this paper, I investigate whether CEO turnovers – forced, as well as voluntary – are accompanied by changes in firm performance, and whether governance provisions associated with managerial entrenchment affect these performance changes. Using data on CEO turnovers in the 800 largest U.S. companies occurring over the period 1980-2000, I present evidence that firms with entrenched CEOs exhibit significantly poorer performance in the year prior to forced turnover, and experience significantly larger performance improvements during the three years following forced turnover. More importantly, I show that these larger performance improvements are the result of improved management rather than reversion to the mean. This evidence provides strong support for the hypothesis that entrenchment hampers firm performance by protecting inferior CEOs.

Keywords: CEO turnover, firm performance, entrenchment.

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1 Introduction

Does management matter for firm performance? Do external and internal mechanisms associated with managerial monitoring and selection influence this relationship? Research in corporate finance and management has studied extensively these important questions, and there is growing empirical evidence to support affirmative answers to both (see the references reviewed in Section 2). In particular, Huson, Malatesta, and Parrino (2004) (henceforth HMP) show that firms experiencing a CEO succession exhibit an increase in operating returns on assets during the three years following turnover, and that these performance changes are positively related to the extent of institutional ownership and are larger for firms with outsider-dominated boards.

This paper follows this line of research by considering the impact of managerial entrenchment on performance changes surrounding CEO turnover, where managerial entrenchment is defined as a set of governance provisions that restrict shareholder rights and protect against takeovers.[1]

Recent work in corporate governance emphasizes provisions that limit shareholder rights and provide anti-takeover defenses as important factors that influence firm performance. For example, Gompers, Ishii, and Metrick (2003) (henceforth GIM), and Bebchuk, Cohen, and Ferrell (2005) (henceforth BCF) document a negative relationship between various entrenchment indices and Tobin's Q or firm operating performance.

A natural interpretation of these results is that entrenchment weakens the disciplinary force of internal and external monitoring mechanisms. Consequently, entrenchment insulates inferior managers or results in suboptimal managerial behavior, both of which lead to lower firm performance. In effect, entrenchment raises the cost of firing a manager. This interpretation has several implications for the effects of forced managerial turnover, which I empirically test in this paper. First, prior to turnover, firms with entrenched managers should exhibit poorer performance compared to firms with less entrenched managers. And second, following turnover, firms with entrenched managers should exhibit larger improvements in performance compared to firms with less entrenched managers. Intuitively, an entrenched manager gets fired only when performance is so poor that the expected improvement exceeds the higher cost of firing associated with entrenchment.

[1] Factors such as managerial ownership, tenure, or board loyalty, have been proposed in the literature in order to capture managerial entrenchment, and its influence on monitoring mechanisms (Fredrickson, Hambrick, and Baumrin (1988), Boeker (1992), Denis, Denis, and Sarin (1997), Shen and Cannella (2002)).

In this paper, I study a sample of 1,329 CEO turnovers – forced, as well as voluntary – occurring in the 800 largest U.S. firms over the period 1980-2000. I test the hypothesis that entrenchment insulates inferior CEOs, and I find strong empirical support for both of its predictions. Specifically, I find that the *narrowly* defined entrenchment index (BCF) is positively associated with large and statistically significant improvements in operating returns on assets (OROA) during the three years following forced CEO turnover; and is negatively associated with pre-turnover OROA. More importantly, I show that these larger performance improvements are the result of improved management, rather than mean reversion from worse pre-turnover performance. However, the positive association between entrenchment and changes in CEO "quality" is not present in the case of voluntary turnovers.

In addition, and in contrast to HMP, I argue that the relationship between monitoring and post-turnover performance changes should be studied separately for forced and voluntary turnovers: the influence of both prior performance and monitoring on post-turnover performance changes can vary systematically between the two sub-samples. In fact, this approach leads to distinct conclusions from the ones reached by HMP. Specifically, I find that in the case of forced turnovers, neither internal nor external monitoring mechanisms are significantly associated with post-turnover performance changes.

This paper is not the first to investigate the impact of entrenchment on performance changes surrounding forced CEO turnover. In contemporaneous research, Fisman, Khurana, and Rhodes-Kropf (2005) (henceforth FKR) use a different data-set and a different performance measure to get different results from mine. First, they find that post-turnover performance changes are positively related to the *broadly* defined entrenchment index (GIM). However, this result does not account for mean reversion. Moreover, they find that firms with entrenched management do not perform worse prior to turnover. This result, the authors claim, supports the view that entrenchment plays a beneficial role by insulating boards against possibly misguided, agitating shareholders. However, the result is based on comparisons of performance changes rather than levels. My results confirm theirs in that pre-turnover performance changes are not significantly different between entrenched and non-entrenched firms; but performance levels are.

The remainder of the paper is structured as follows. Section 2 reviews theoretical and empirical literature on the determinants of post-turnover performance changes. Section 3 describes the data, and Section 4 presents the empirical results and addresses robustness and endogeneity issues. Section 5 presents a review and discussion of the main results.

2 Theoretical considerations and empirical evidence on the determinants of post-turnover performance changes

Conventionally, researchers assume that firm performance is determined by industry- and firm-specific characteristics, and by managerial talent. In addition, the firm-specific characteristic is assimilated to a random shock, assumed to have zero-mean and to be serially independent; thus, the random component is mean-reverting. However, the managerial component can result in persistent changes in firm performance (HMP). Therefore, in the context of managerial turnover, a more appropriate evaluation of the impact of managers on firm performance involves a review of long-term post-turnover performance changes (Denis and Denis (1995)).

In this section, I review theoretical arguments and empirical evidence on the impact of managers, governance provisions associated with managerial entrenchment, and monitoring mechanisms, on changes in long-term firm performance following managerial turnover.

■ **Does management matter?** From a theoretical perspective, there are two hypotheses regarding the impact of management on organizational performance. The first considers that talent varies across managers.[2] Under this hypothesis, poor performance signals inferior managerial talent. Therefore, on average, turnover is followed by improved performance, resulting both from improved managerial talent and the reversion to the mean of the random component.

Alternatively, one may hypothesize that managerial talent varies little.[3] As a result, the relationship between succession and organizational performance is spurious – poor performance causes both succession and the magnitude of the ensuing performance changes.

Early sociology research on sports teams (Grusky (1963 & 1964), Gamson and Scotch (1964), Eitzen and Yetman (1972), Allen, Panian, and Lotz (1979), Brown (1982)) documented that managerial changes are preceded by declines in team winning percentage and result in improvements. However, controlling for prior team performance, there is modest evidence of a "succession effect." This lends partial support to Gamson and Scotch's (1964) "ritual scapegoating" view of managerial turnover.[4]

[2] Examples are Hambrick and Mason's (1984) Upper Echelons Theory, or the Agency Theory developed in Alchian and Demsetz (1972), Jensen and Meckling (1976), and others.

[3] This assumption underlies the "scapegoat hypothesis" proposed by Gamson and Scotch (1964). See Brandenburger and Polak (1996), and Dezső (2004) for theoretical interpretations of scapegoating.

[4] An early study on business firms is Lieberson and O'Connor (1972). They found that CEO fixed effects add little explanatory power to the variance in firm profitability.

More recent studies of managerial transitions provide evidence supporting the view that top managers, and in particular CEOs, have an influence on various aspects of corporate behavior and performance. Pérez-González (2002) shows that firms where the successor CEO was a member of the firm's controlling family experience significant declines in profitability. Bertrand and Schoar (2003) find that the presence of CEO fixed effects in a regression of OROA on year and firm fixed effects improves the adjusted R^2 by 5%. Similar results are found for the influence of the CEO on investment and financial policy, as well as organizational strategy. Lastly, HMP find that firms experiencing managerial succession exhibit an increase of 0.9% in OROA during the three years following turnover, compared to firms in the same industry *and* with the same pre-turnover performance.

■ **Does entrenchment matter?** A firm's top management can implement a wide array of policies that limit shareholder rights and protect managers from takeover threats. These provisions weaken the disciplinary force of outsider or insider monitors and lead to managerial entrenchment. Under a *detrimental view*, entrenchment results in suboptimal managerial behavior (shirking, empire-building, extraction of private benefits), or it insulates inferior managers. Consequently, firing is associated with poorer performance prior to turnover, and results in larger performance improvements after turnover.

Alternatively, FKR argue that entrenchment enables board members to protect talented, yet "unlucky," CEOs from the pressure of misguided, agitating shareholders.[5] Under this *beneficial view* of entrenchment, firing also results in larger performance improvements, although for a different reason: entrenched boards have time to screen and fire inferior managers; less entrenched boards yield to agitating shareholders and might fire talented mangers of poorly performing firms. However, in entrenched firms, pre-turnover performance is higher than in less entrenched firms, since firing is less noise-dependent.

There exists evidence that certain governance provisions associated with managerial entrenchment affect firm value and stockholder returns. GIM find that firms in the lowest decile of the Governance Index (GI) – firms with the strongest shareholder rights – earned abnormal returns of 8.5% per year during the 1990s. In addition, each one-point increase in GI is associated with a decrease of 2.2% in Tobin's Q. A similar relationship is documented by BCF based on a narrowly defined Entrenchment Index (EI).[6] This evidence supports the proposition that entrenchment is detrimental to firm value.

[5] Other researchers also proposed that entrenchment may be beneficial for shareholders. For example, Bebchuk and Stole (1993) posit that entrenchment allows managers to invest optimally in long-term projects.

[6] GI and EI are defined as, respectively, counts of 24 and 6 anti-takeover provisions (see Section 3).

However, based on a sample of 139 dismissals in the largest U.S. firms over 1980-1996, FKR find that post-turnover performance changes are positively related to entrenchment, that entrenched CEOs are fired less frequently, and that firms with entrenched managers do not perform worse prior to turnover. These findings support their view that entrenchment plays a beneficial role by insulating boards against misguided, agitating shareholders.

■ **Do monitoring mechanisms matter?** In principle, a firm's board of directors has the power to fire, hire, and compensate top managers, and to sanction and monitor major strategic decisions. Board effectiveness in monitoring managers is more likely to be achieved through the appointment of outside directors. Fama and Jensen (1983) posit that "outside directors have incentives to develop reputations as experts in decision control."

However, boards do not function in isolation. Institutional shareholders play an active monitoring role. Demsetz and Lehn (1985) argue that the free-rider problem in monitoring is alleviated in the case of large shareholders, that have greater incentives to monitor, since their benefits exceed the costs (Shleifer and Vishny (1986)). Therefore, the quality of monitoring should be positively associated to institutional shareholdings.

It is unclear however, how effective monitoring works, and what are its expected consequences. On one hand, effective monitoring translates into a timely detection of inferior CEOs, while ineffective monitoring results in dismissal of inferior CEOs only when performance is particularly poor. Consequently, ineffective monitoring is associated with poor performance prior to, and large improvements after CEO removal. On the other hand, effective monitoring translates in a higher ability to select talented managers, and is associated with larger improvements in performance after CEO removal (see HMP).

Researchers documented a strong negative correlation between firm performance and CEO turnover (Coughlan and Schmidt (1985), Warner, Watts, and Wruck (1988), Weisbach (1988), Boeker (1992)). In addition, Weisbach (1988) finds that this negative correlation is stronger for firms with outsider dominated boards. The interpretation was that boards play an important role in monitoring and disciplining managers.[7] Denis et al. (1997) and Huson, Parrino, and Starks (2001), however, found no evidence that the sensitivity of forced turnover to performance is influenced by the presence of an outside blockholder, the extent of institutional shareholding, or the intensity of the takeover market.[8]

[7] However, Jensen and Murphy (1990) argue that the probability of dismissal is too small to effectively represent a disciplining mechanism for managers.

[8] In fact, Denis et al. (1997) find that turnover is more sensitive to stock performance when a firm has a blockholder; yet this finding is not significant at 5% level, or robust to alternative performance measures.

The evidence on the consequences of managerial changes comes mainly from studies of stock market reaction to the turnover announcements.[9] Beyond the studies on sports teams, few researchers have studied the long-term consequences of managerial turnover in firms. Denis and Denis (1995) find that, on average, OROA declines in the three years prior to turnover and increase afterwards. Additionally, in 68% of the cases, forced turnovers are preceded by active monitoring by parties other than the board of directors – blockholders, institutional shareholders, or potential acquirers. HMP study CEO turnovers over 1971-1994 and examine the empirical relation between board composition, institutional shareholdings, firm-related takeover activity, and post-turnover performance changes. They find that performance changes following managerial turnover are positively related to institutional ownership, and are larger for outsider dominated boards. However, they find no significant differences between post-turnover performance changes for forced and voluntary successions. This evidence provides no clear picture about the effectiveness of boards and institutional shareholders as monitors of management.

3 Data[10]

3.1 Sample description

The sample of observations on CEO turnovers is constructed as follows. First, all CEOs with tenure of one year or less are identified using the *Forbes* annual compensation surveys over the period 1980-2000. This provides a list of recently appointed CEOs. The sample excludes observations where the executive change was related to a takeover or merger, observations involving executive changes at subsidiaries of domestic or foreign firms, and observations where the office was held by co-CEOs. Observations where an interim CEO was appointed and replaced within a year are collapsed into a single observation, and the year when the incumbent relinquished his/her position is considered the turnover year.

[9] Weisbach (1988), Lubatkin, Chung, Rogers, and Owers (1989), Friedman and Singh (1989), Khanna and Poulsen (1995), HMP, are but a few of the plethora of event studies focusing on stock market reactions to turnover announcements. See also Furtado and Karan (1990) for an overview.

[10] The 1980-1994 sample of 880 observations was provided by Robert Parrino, at the University of Texas, Austin. After eliminating observations involving subsidiaries, co-CEOs, or interim CEOs, I used 845 of these observations. I added 45 observations mainly for cases in which a turnover was missing for a firm (I identified these turnover events by using the broad media-search capabilities in Factiva). Lastly, I extended the sample with 439 observations covering the period 1995-2000. The final sample contains 1,329 observations. For a detailed description of the construction of the 1980-1994 sample see HMP. Here I describe the more salient features of the data construction process for their sample, and the sources used for the 1995-2000 sample.

Information on the name, age, tenure in office, and tenure with the firm for both the incumbent and the successor was obtained from the *Forbes* surveys and announcements in *The Wall Street Journal*, as well as other newspapers or major news agencies. These announcements were also used to confirm the date when a CEO change was announced.

The reason for each succession was obtained from the announcements in *The Wall Street Journal*, and a thorough review of the business and trade press. Each succession is classified as forced or voluntary. If any of the surveyed articles reported that the CEO was fired, forced from the position, or departed due to policy differences, the succession was classified as forced. Similarly, the succession was tentatively classified as forced if the incumbent was under the age of 60, and the reason for departure reported in the press was not death, poor health, or acceptance of another position (elsewhere or within the firm). Cases when the incumbent CEO was under the age of 60 and the retirement was not announced at least 6 months in advance were also tentatively classified as forced. The cases tentatively classified as forced were further investigated and reclassified as voluntary if the CEO departed for personal or business reasons unrelated to the firm's activities (see Section 4.3 for an alternative definition of forced turnovers).

Successor CEOs are classified as outsiders if their tenure with the firm is less than a year at the time of appointment as CEO. All other successors are classified as insiders.

Data on the composition of the board of directors in the year of turnover (for the 1995-2000 sample) was obtained from the proxy statements immediately preceding the announcement of turnover. All directors who were employees of the firm (either at the time of turnover or before), or had a family relationship with the incumbent CEO were classified as insiders, and outsiders otherwise.

Data on institutional ownership in the quarter immediately preceding the turnover announcement comes from the CDA/Spectrum database.

As an initial measure of entrenchment, I use the index introduced in GIM. This index is derived from surveys conducted by the Investor Responsibility Research Center (IRRC) in 1990, 1993, 1995, 1998, and 2000. The index characterizes the strength of shareholder rights across firms and is based on the count of 24 anti-takeover provisions grouped in five broad anti-takeover categories: delaying a hostile takeover bid, officer protection, voting rights, state laws, and other defenses. The index is computed by adding one for each present defensive provision. Following FKR, I use the values from 1990 for the years prior to 1990, based on the argument that the values of the index are slow moving. For the years between surveys, I use the index from the closest year.

As an alternative measure of entrenchment, I use the index introduced in BCF. This index incorporates six provision (also present in the broader index described above) "that are likely to play a substantial role in the documented correlation between IRRC provisions, in the aggregate, and shareholder value:" classified boards, limits to shareholder amendments of bylaws, supermajority requirements for mergers, supermajority requirements for charter amendments, poison pills, and golden parachutes.

Financial data for the seven-year period centered on the turnover year were obtained from COMPUSTAT. These data are used to calculate accounting returns. Specifically, I use operating return on assets (OROA), defined as operating income before depreciation divided by total assets (COMPUSTAT data item #13 / COMPUSTAT data item #6).

Following HMP, I control for industry effects by subtracting from the firm OROA the median OROA for firms in the primary two-digit historical SIC industry (COMPUSTAT data item #324) in which the firm was active at the time of turnover. The historical SIC code is available only from 1987. For years prior to 1987 I assumed that the historical SIC code is the one from 1987.

Compared to other large-sample studies of CEO turnovers, my data covers a longer time-period. Another distinction of my data is that it includes a larger set of control variables that may impact the change in operating performance. Specifically, I use variables such as successor origin, board composition, and institutional ownership (HMP), GI (FKR), the narrower EI and its main individual components, and incumbent manager's tenure.

A summary of the variables, their definitions, and date sources is provided in Table 1.

Table 2 reports summary statistics for the sample of CEO turnovers occurring over the period 1980–2000. The median age of the outgoing CEO is 63 years, and the median tenure is 7.83 years.[11] 21.52% of the successions are classified as forced, under the procedures employed in this study. The median age of the successor is 53 and the median tenure with the firm is 13.5 years. However, 22.35% of the successors come from outside the firm.[12]

The median firm in the sample has $3.89 billion in annual sales, $5.26 billion in total assets (2000 dollars), and 16.5 thousand employees.

The median fraction of stock held by institutional investors is about 48.5%; in about 78.46% of the firms, institutions own at least 30% of the stock.

[11] The median age and tenure of the outgoing CEO in the forced turnover sub-sample are 55 and 4.42, and 64 and 8.67 in the voluntary turnover sub-sample.

[12] In the forced turnover sub-sample outsiders are appointed in 53.85% of the cases, while in the voluntary turnover sub-sample outsiders are appointed in 13.71% of the cases.

The board of directors of the median firm in the sample consists of 76.92% outside directors. Slightly less than 12% of the firms have insider-dominated boards, that is, boards where the proportion of insiders is larger than 40%.

The median firm has 10 anti-takeover provisions out of the 24 that define the GI, and 2 out of the 6 that define the narrower EI. 56% of the firms have classified boards, 58% adopted golden parachutes and 60% adopted poison pills. The occurrence of the other provisions that form the EI, limits to amend the bylaws or the charter, and supermajority of voting to approve mergers, is less frequent.

3.2 Empirical specification

To evaluate the impact of CEO turnover on performance, I follow HMP and estimate the following benchmark regression:

$$\Delta OROA(-1,+3)_i = \alpha + \beta \times Forced_i + \gamma \times X_i + \varepsilon_i, \tag{1}$$

where $\Delta OROA(-1,+3)_i$ represents firm i's change in operating return on assets from the year prior to the turnover year, $t = -1$, to the third year after the turnover year, $t = +3$; $Forced_i$ represents the dummy variable that codes whether the turnover is forced or voluntary; X_i represents a vector of covariates; and ε_i represents the error term.

Since the focus is on the change in operating performance, I eliminate observations for which the incumbent CEO was in office for less than 9 months in the year prior to the turnover year, and observations for which the successor was in office for less than 9 months in the third year after the turnover year. This procedure introduces a potential selectivity bias in the estimation of the OLS regression because the sample is censored. The characteristics of the firms and/or CEOs that are dropped from the sample could differ systematically from those of the firms and/or CEOs that are selected. Thus, as suggested by HMP, I use the methodology developed by Heckman (1979) to correct for the endogeneity resulting from censoring the sample.

The method consists of estimating a probit model in the first step, whereby the dependent variable equals 1 if the observation is selected and 0 otherwise. This is used to construct the inverse Mill's ratio, which is the used in the second step as a covariate in the OLS regression. Alternatively, the model can be estimated in a single step by using maximum likelihood estimation. This procedure allows me to obtain robust standard errors. The results reported in this paper are based on the latter methodology.

In addition, and in contrast to HMP, I estimate a second variant of (1), whereby I introduce interaction terms between the succession-type dummy variable and the regressors X_i. Although I do not report these results, I use this approach to argue that (1) should be estimated separately for each sub-sample of succession types (evidently, without the succession-type dummy). Consequently, it becomes clear that the effects of the regressors X_i are starkly different in the two succession-type sub-samples, and so are the conclusions to be drawn from this exercise.

4 Empirical results

4.1 Performance changes around turnover events

Fig. 1 provides a first glance at the behavior of operating returns in the seven years centered on the turnover year. It plots the mean unadjusted and industry-adjusted OROA for forced and voluntary turnovers, starting in the third year before and ending in the third year after the turnover year. The magnitude and statistical significance of these changes is further detailed in Table 3.[13] Forced turnovers are preceded by statistically significant declines of 1.98% and 1.63% in unadjusted and industry-adjusted performance, and followed by a statistically significant increase of 1.07% in industry-adjusted performance. Voluntary turnovers are preceded by a statistically significant decline of 0.33%, and followed by a statistically significant increase of 0.97% in industry-adjusted performance.

This evidence seems to support the hypothesis that fired managers are not simply scapegoats.[14] However, post-turnover performance improvements may simply be the consequence of mean reversion from poor prior performance. In the next sub-section, I analyze the cross-sectional determinants of these performance changes and use regression analysis to account for the possibility of mean reversion.

[13] The sample based on which the statistics reported in Table 3 are computed is constructed as follows. First, I eliminate all observations for which either the unadjusted or industry-adjusted OROA is outside the interval defined by the mean +/- three times the standard deviation of the respective distribution. This results in a loss of 67 observations. Second, I eliminate all observations for which the incumbent CEO was in office for less than 9 months in the year prior to the turnover year, and observations for which the successor was in office for less than 9 months in the third year after the turnover year. This results in a loss of 300 observations. Lastly, I eliminate observations for which the performance changes cannot be computed due to missing data. The result is an additional loss of 54 observations.

[14] Performance improvements could be the result of increased operating efficiency or better allocation of capital, that is, sales of underperforming assets or units, layoffs, etc. HMP provide evidence of both forces playing a role, especially in the case of forced turnovers.

4.2 Cross-sectional determinants of post-turnover performance changes

Tables 4 (forced turnovers) and 5 (voluntary turnovers) present evidence on how different variables associated with managerial entrenchment, as well as internal and external monitoring, relate to performance changes from the year prior, to the third year after the turnover event, OROA(-1,+3); and prior performance, OROA(-1). Specifically, the tables present comparisons between mean unadjusted and industry-adjusted OROA(-1,+3) and OROA(-1) between firms:

- that exhibit entrenched or non-entrenched management, whereby firms with entrenched management have either the GI or the EI above the median;

- that have a classified board of directors or not;

- that adopted a golden parachute or not;

- that adopted a poison pill or not;

- with the share of institutional ownership above or below the sub-sample median;

- that have an outsider or an insider-dominated board, where an outsider-dominated board is defined as a board with at least 60% outside directors;

- that have a larger or a smaller board compared to the median board size;[15]

- firms where the incumbent CEO's tenure is longer or shorter than the median;[16]

- that appointed outsider as opposed to insider successors.

To provide more systematic evidence on the impact of entrenchment and monitoring characteristics, I use a multivariate regression setup. Specifically I use a full maximum likelihood estimation of a selection model, as described in section 3.2.

Tables 6 report the OLS parts of the estimation.[17] Each model presents three regressions: the first is for the full sample of turnovers, whereby forced turnovers are identified by the dummy variable *Forced*; the next regressions are for voluntary and forced turnovers respectively. To justify the separate regression analysis for each sub-sample of turnovers, I

[15] Yermack (1996) provides empirical evidence on the strong negative effect of board size on firm valuation.

[16] The incumbent CEO's tenure is often viewed as a proxy for managerial entrenchment, or power. It is considered that managers with longer tenures may dominate the board of directors, since most board members are likely to have been appointed during the incumbent's tenure.

[17] For all the models presented, the independent variables used in the probit regressions are: dummies for outsider successor and outsider dominated board, the natural log of board size, the natural log of the incumbent CEO's tenure, fraction of institutional ownership, industry-adjusted OROA in the year *after* turnover, dummies for classified board, golden parachute, poison pill, the difference between the entrenchment index and the sum of the previous three variables, the difference between the governance index and the entrenchment index, firm size, and the birth year of the successor CEO.

Note that the IML is not computed in the full maximum likelihood estimation of the selection model.

introduced interaction terms between the forced turnover dummy and the other regressors, and performed a statistical test of the hypothesis that the coefficients on the interaction terms are jointly equal to zero. The test rejects the null hypothesis that the coefficients on the interaction terms are jointly equal to zero, particularly when entrenchment variables are introduced in the regression. These results are not reported.

The first model presents the benchmark results without entrenchment variables. It includes a dummy variable for forced turnovers (in the first regression), dummy variables for successor type and board type, the natural log of board size, the natural log of the incumbent CEO's tenure, and the fraction of institutional ownership. Controls for change in median industry performance, IOROA(-1,+3), industry-adjusted performance in the pre-turnover year, IOROA(-1), and firm size (the natural log of assets) are also included.

I then proceed by considering various entrenchment characteristics. First I add the GI to the benchmark regression; then I consider EI, and (GI – EI); lastly, given the evidence presented in Table 4, I consider two subsets of EI, that aggregate classified boards, golden parachutes, and poison pills (or just the latter two), as well as these components separately.

I used the variance inflation factor test to check for multicollinearity; none of the variables included in the regression pose problems of this sort. In addition, Table 7 presents correlations between the regressors.

Lastly, I follow HMP in examining potential nonlinear relations between variables. First, I extract residuals from a regression of OROA(-1,+3) on firm size, lagged adjusted performance, and changes in industry OROA. Firms are then ranked by the residuals of performance changes and grouped into quintiles. Finally, I compare across quintiles the distribution of GI, EI, and the dummy variables for classified boards, golden parachutes and poison pills. The results are presented in Table 8, together with the statistics that test for the significance of the difference between the means across pairs of quintiles.

Before proceeding to the analysis, I recapitulate the theoretical considerations regarding the potential factors that affect performance changes.

Firing entrenched CEOs leads to larger performance improvements, either because entrenchment insulated inferior CEOs, or because entrenchment allowed the board the time to evaluate the cause of poor performance - bad luck or poor management (cf. FKR). Under the hypothesis that entrenchment insulates inferior managers - or it increases the "cost of firing" - entrenchment should be associated with poor performance prior to turnover, while under the FKR hypothesis that entrenchments protects boards from misguided shareholders, entrenchment should be associated with stronger performance prior to CEO dismissals.

Under the view that effective monitoring corresponds to a timely detection of inferior managers, outsider-dominated boards and a larger share of institutional ownership – hypothesized to be more effective – should be associated with higher performance in the year prior and smaller improvements over the three years after turnover. Alternatively, if effective board monitoring implies better successor selection, then performance improvements should be higher for outsider dominated boards.

Under the hypothesis that managerial talent is to a large extent invariant, none of these considerations apply; entrenchment, board composition, or institutional ownership, are not expected to be associated with post-turnover performance changes.

I proceed with analyzing the evidence for forced and voluntary turnovers.

■ **Forced turnovers.** Table 4 presents overwhelming evidence in support of the hypothesis whereby entrenchment insulates inferior managers. Firms with entrenched managers exhibit significantly larger performance changes in the three years following managerial turnover. Firms with a GI above the median (10) exhibit increases by 1.58% in unadjusted OROA and 1.94% in industry-adjusted OROA, compared to firms with less entrenched management, whereby unadjusted OROA decreases by 0.73%, while industry adjusted OROA increases by 0.55%. The 2.31% difference in unadjusted OROA is significant at the 10%, while the 1.39% difference in industry-adjusted OROA is not significant at conventional levels (yet it is not entirely negligible from a statistical significance viewpoint).

However, results are considerably stronger in the case of EI.[18] Firms with an EI above the median (2) exhibit average increases by 1.70% and 2.58% in unadjusted and industry-adjusted OROA, amounting to differences of about 2.5% compared to less entrenched firms. These differences in performance changes are significant at the 5% level.

In the next step, I proceed to identify which of the components of EI drive these results. Table 4 reports the results only for the components that exhibit statistically significant associations with performance changes. Firms that had in place golden parachute or poison pill provisions exhibit increases in industry-adjusted performance by more than 3% compared to firms that did not have these provisions in place. In addition, firms with classified boards also exhibit larger increases in performance compared to firms without classified boards; however, only the 2% difference in unadjusted performance changes is statistically significant at conventional levels. As with the case of GI, the 1.26% difference in industry-adjusted performance changes is not entirely insignificant.

[18] As argued in BCF, the components of EI are especially important in fighting battles for the control of the firm.

The evidence, however, is incomplete without investigating performance differences in the year prior to turnover. Table 4 provides evidence that firms with entrenched management perform significantly worse in the year prior to turnover. The differences in unadjusted and industry-adjusted performance between firms with a GI below and above the median are economically large: 3%, and respectively 2.32%. Both differences are significant at the 5% level. This same pattern is exhibited when comparing firms with an EI below and above median: the differences in unadjusted and industry-adjusted performance levels are 3% and 2%. Except for the case of golden parachutes, the results for classified board and poison pills are not statistically significant. However, the differences are large, and in fact, their statistical significance is far from irrelevant.

The result that entrenchment is associated with poorer pre-turnover performance and with larger post-turnover performance increases is, however, not definitive evidence that entrenchment insulates inferior CEOs. An alternative hypothesis may be that, in fact, the larger improvements in post-turnover performance are the result of mean reversion from worse pre-turnover performance. In order to account for this possibility, I use industry-adjusted performance in the pre-turnover year as a control in multivariate regressions.

Multivariate regression results are presented in the third column for each of the models in Table 6. In the benchmark regression that excludes entrenchment variables, the only significant results are: the industry-adjusted OROA in the pre-turnover year, that exhibits a statistically significant (at 1%) negative coefficient, meaning that the worse the pre-turnover performance, the larger the post-turnover improvement; and the change in median industry OROA over the years (-1,+3), that exhibits a statistically significant (at 1%) positive coefficient, meaning that the larger the improvement in average industry performance, the larger the improvement in post-turnover firm performance.

In addition, the coefficient on the variable that captures the incumbent CEO's tenure is statistically significant and negative. This result is robust throughout all models. The result means that the longer the incumbent CEO's tenure, the smaller the post-turnover improvement. The interpretation of this result is ambiguous, given that firms with longer-tenured CEOs also exhibit slightly poorer performance in the year prior to turnover. One possibility could be that long-tenured incumbent CEOs engage in activities that hamper firm performance in a persistent manner, and are not easy to reverse by successors.

The second model introduces GI as a covariate. The coefficient on GI is small and statistically insignificant. In addition, the value of the likelihood function is essentially unchanged compared to the benchmark equation. This result is in contrast to FKR, whereby

they find a statistically significant coefficient on GI in a regression of post-turnover performance changes. However, they do not control for pre-turnover performance to account for mean reversion. In fact, in results not reported here, I replicate the second model without controlling for pre-turnover industry-adjusted OROA, and obtain a small positive coefficient on GI, which is statistically significant only at 20% level. The purpose of this exercise, nevertheless, is to highlight the effect of failing to account for mean reversion.

The third model follows BCF and splits GI into two sub-indices: EI and (GI – EI). The coefficient on EI becomes large and statistically significant at 5% level: a one-point increase in EI leads to an increase in OROA by 1.24%. Model 4 uses (C + GP + PP) as an index that aggregates provisions for classified boards, golden parachutes, and poison pills; model 5 uses (GP + PP); while model 6 uses these three provisions separately. The coefficients on the indices (C + GP + PP) and (GP + PP) are strong and statistically significant at 5% and respectively 1% levels. In particular a one-point increase in these indices leads to increases in OROA by 1.46% and 1.92%. Lastly, the coefficients on PP and GP are significant at 5% and 13% levels. In addition, introducing the entrenchment variables described above improves the likelihood function of the model by 4.3%-5.5%.

Therefore, firms that fire entrenched managers exhibit larger post-turnover performance improvements, even after controlling for poorer pre-turnover performance. Under the assumption that only the managerial component of performance has persistent effects, this evidence implies that firms that fire entrenched managers exhibit a larger improvement in the managerial component. Under the additional assumption that all firms that fire their managers appoint successors of average quality, the evidence is strongly consistent with the hypothesis that entrenchment insulates inferior CEOs.

Table 8 provides additional evidence, based on the residuals extracted from a regression of OROA(-1,+3) on firm size, lagged industry-adjusted performance, and changes in industry OROA. Top performers, that is, firms that improved the most after forced managerial turnovers, have a median EI of 2.75, compared to 2.04 for middle performers, and 1.78 for bottom performers. In addition, the proportion of firms among the top performers, that have a classified boards (64.3%), golden parachute (75%), or poison pill (89.3%) is higher compared to the same proportions in the groups of middle and bottom performers, and significantly so for the case of poison pill provisions. This evidence further reinforces the conclusion from multivariate regressions.

As further support for the hypothesis that entrenchment insulates inferior CEOs, I plot the mean unadjusted and industry-adjusted performance in the seven years centered on

the turnover year, for firms with GI and EI above and below their respective medians, and for firms with and without golden parachute or poison pill provisions (Figures 2 & 3). It is apparent that firms with entrenched managers perform worse not only in the first year, but also in the second and the third years prior to turnover. While the differences are not as significant as in the year prior to turnover, they are sufficiently large to warrant this conclusion. If the FKR hypothesis that entrenchment insulates boards from misguided shareholders and allows them to make more accurate firing decisions were right, one should not expect large differences in performance between entrenched and less entrenched firms in the second or third year before turnover. If the differences are present, as the evidence suggests, it is hard to argue why boards need three years to evaluate and fire inferior CEOs.

Table 4 and the regression results in Table 6 present no evidence that monitoring mechanisms play a significant role in driving post-turnover performance changes. In fact, firms with insider-dominated boards exhibit large decreases in post-turnover performance, but also better pre-turnover performance. However, given the size of the sample of firms with insider-dominated boards that fire their CEOs, I consider that no conclusion regarding the board's role should be drawn .

Lastly, there is mild evidence that when pre-turnover performance is poor, firms appoint outsider successors; in addition, these firms exhibit larger improvements in post-turnover performance. Moreover, the coefficient on the dummy variable Outsider is consistently significant at 15% level, providing evidence that outsider successors replace inferior incumbents.

■ **Voluntary turnovers.** Voluntary turnovers represent a potentially interesting control group. If entrenchment-related variables exhibit the same impact as in the case of forced turnovers, the results presented above are rather tenuous support for the hypothesis that entrenchment insulates inferior managers.

Table 5 shows that this concern is not warranted. Except for the case of poison pill provisions, whereby firms with the provision in place improve significantly more than firms without the provision, there is no evidence associating entrenchment with differences in pre-turnover performance or post-turnover performance changes. This is further reinforced by the regression results in Table 6, and the comparisons between firms grouped according to residual performance measures in Table 8.

Firms where institutions hold above-median shares of company stock perform better in the year prior to turnover, and also exhibit slightly larger improvements in industry-adjusted performance compared to firms with below-median institutional ownership. This

result is confirmed by the consistently significant positive coefficient on the variable *Institutional Ownership* in the regressions in Table 6. I interpret this as a sign of optimal investor behavior: investors hold larger blocks of shares in firms expected to perform better.

As with the case of forced turnovers, firms with insider dominated boards perform better in the year prior to turnover, and exhibit no significantly different changes in industry-adjusted performance compared to firms with outsider-dominated boards.

Firms whereby an outsider was appointed, perform slightly (but insignificantly) worse in the year prior to turnover, compared to firms where an insider was appointed as successor; however, they exhibit significantly larger improvements in post-turnover performance. Moreover, as with the case of forced turnovers, the coefficient on the dummy variable *Outsider* is consistently significant at 15% level, providing further evidence that outsider successors replace inferior incumbents.

4.3 Robustness

In this section, I examine the robustness of the regression results regarding the impact of entrenchment measures on post-turnover performance changes for forced turnovers. I focus on the effect of outliers, the time period considered for performance changes, industries included in the sample, definition of forced turnovers, and performance measures used.

■ **Outliers.** While eliminating outliers is a legitimate and commonly used procedure, one may nevertheless express concerns about its effect (see footnote 13). I replicated the regression results without eliminating the outliers from the sample, and found that both the magnitude and the statistical significance of the coefficients on the entrenchment indices GI, EI, (C + GP + PP), and (GP + PP) are essentially the same.

■ **Time frame for post-turnover performance changes.** In addition, I replicated the regressions considering various time frames for post-turnover performance changes. Specifically, I considered performance changes going from 2 to 5 years after turnover. The magnitude and the statistical significance of the coefficients on the entrenchment indices GI, EI, (C + GP + PP), and (GP + PP) are essentially the same.

■ **Industries included in the sample.** Financial firms (SIC codes 6000-6999) and firms in regulated industries (SIC codes 4900-4999) are often excluded from empirical studies. Regression results become much stronger after dropping observations involving firms in these industries. The coefficients on EI, (C + GP + PP), and (GP + PP) become significant at 1% level, while the coefficients on GP and PP become significant at 5% level.

■ **Definition of forced turnovers.** Succession events are classified as forced if any of the surveyed articles reported that the CEO was fired, forced from the position, or departed due to policy differences. In addition, a succession is classified as forced if the incumbent was under the age of 60, and the reason for departure reported in the press was not death, poor health, or acceptance of another position (elsewhere or within the firm), or the retirement was not announced at least 6 months in advance. The cases tentatively classified as forced were further investigated and were reclassified as voluntary if the CEO departed for personal or business reasons that were unrelated to the firm's activities.

I further examined the robustness of the results applying a more conservative definition of forced turnovers. Specifically, I reclassified succession events when the incumbent was under the age of 60, and the reason for departure reported in the press was not death, poor health, or acceptance of another position, or when the retirement was not announced at least 6 months in advance, as voluntary, whenever the press articles did not mention poor performance before turnover. The magnitude and statistical significance of the coefficients on GI, EI, (C + GP + PP), and (GP + PP) are qualitatively similar.

■ **Performance measures.** Lastly, I replicated the regressions in Table 6 using three different performance measures:

(a) operating returns on sales (OROS), defined as operating income before depreciation divided by total sales (COMPUSTAT data item #13 / COMPUSTAT data item #12);

(b) operating returns defined as operating income after depreciation divided by the sum of current assets and net property plant and equipment (COMPUSTAT data items #178/(#4 + #8)), as used by FKR; and

(c) a proxy for Tobin's Q (market-to-book), defined as the book value of assets less the book value of common equity plus the market value of common equity, divided by the book value of assets (COMPUSTAT data items (#6 – #60 + #25×#199)/#6).

Using either of these performance measures, the results are qualitatively similar. In the case of OROS, coefficients are significant at the 10% level. Using the FKR measure of return on assets, the coefficient on EI is significant at 5% level, but the coefficients on the sub-indices (C + GP + PP) and (GP + PP) are no longer significant. In the case of Tobin's Q, the statistical significance of the coefficients decreases to 20%. However, this is not surprising, given that Tobin's Q is a forward looking variable. In fact, in results not reported, Tobin's Q increases starting with the year prior to turnover, possibly anticipating it. Lastly, using either of these performance measures, the results on pre-turnover performance are also qualitatively similar.

4.4 Endogeneity

The evidence that, in the case of forced turnovers, entrenchment is negatively associated with pre-turnover OROA and positively associated with post-turnover OROA suggests that entrenchment has a detrimental effect on firms by raising the cost of firing inferior CEOs. However, this association is also consistent with stories where entrenchment is an effect rather than a cause. In this section, I consider two possible explanations for the endogenous determination of the level of entrenchment.

■ **Industry riskiness and entrenchment.** One possible explanation for the endogenous determination of entrenchment levels is that firms in "risky" industries optimally choose higher entrenchment levels. To account for this possibility, I investigate the relationship between entrenchment and risk at the industry-year level, using the entire universe of firms in the IRRC data. I define industry risk in year t as the standard deviation of the series of average industry OROA for the 10 or 5 years ending in t, while entrenchment is simply the average of GI and EI in each industry-year.

In a first exercise, I divide industry-years into high and low entrenchment (relative to the median industry-year entrenchment) and compare the average risk between the two groups. When entrenchment is defined by GI, the difference between risk levels is statistically insignificant. When entrenchment is defined by EI and industry risk is computed using 10 years of prior performance data, the difference is again statistically insignificant. However, when industry risk is computed using only 5 years of prior performance data, the difference is significant at the 10% level; firms in industry-years with EI above median have an average risk of .02540, compared to .02434 for firms in industry-years with EI below the median. The difference of 0.001 is extremely small compared to a change of 0.03669 between the bottom and top quartile of the industry-year risk distribution.

An alternative exercise is to divide industry-years into high and low risk (relative to the median industry-year risk) and compare the average entrenchment level between the two groups. When industry risk is computed using data for 10 years of prior performance, the difference between entrenchment levels is statistically significant at 1% level. Specifically, firms in the low-risk industry-years have an average EI of 2.00422 and an average GI of 8.84783, while firms in the high-risk industry-years have an average EI of 2.11038 and an average GI of 9.09366. The difference of 0.10616 in EI, and 0.24583 in GI are again small relative to the changes of 1.35791 and 2.6583 between the bottom and top quartiles of the EI and GI distributions, respectively.

In summary, while the explanation that firms in "risky" industries choose higher entrenchment levels is not entirely implausible, it is unlikely to be the driving force behind the main result of the paper.

■ **Opportunistic entrenchment.** Secondly, I investigate the possibility that the anti-takeover provisions, and consequently entrenchment levels, are influenced by the CEOs who ended up being fired. In particular, I investigate the changes in EI and GI for all CEOs who were fired after 1993, and were in office for at least 9 months in the second year before the year of firing; CEOs with shorter tenures are unlikely to have a strong voice in imposing anti-takeover provisions, partly because they lack influence over the boards of directors, and partly because most of these provisions require shareholder approval, potentially a lengthier process.

Changes in entrenchment levels are computed as the difference between entrenchment levels at the time of firing and entrenchment levels at the time of appointment (for CEOs appointed after 1990) or entrenchment levels in 1990 (for CEOs appointed before 1990). For this sample of 90 observations, average EI increases from 2.1(6) to 2.1(7), while average GI increases from 9.(4) to 9.(6). Both changes are statistically insignificant at conventional levels.

This exercise provides evidence that CEOs who were fired, either inherited their firms' entrenchment levels, or did not change them over long periods of times before being fired. Consequently, the causality is likely to be from higher entrenchment towards insulating inferior CEOs, rather than from inferior CEOs towards higher entrenchment.

5 Discussion and concluding remarks

Management turnover is a ubiquitous phenomenon in organizations. In this paper, I study a sample of 1,329 managerial turnovers – forced, as well as voluntary – occurring in the 800 largest U.S. firms over the period 1980-2000. I test the hypothesis that entrenchment – defined as a set of corporate governance provisions that restrict shareholder rights and provide anti-takeover defenses – insulates inferior managers, .

I find strong empirical support for two predictions following from this hypothesis. Specifically, I find that the *narrowly* defined entrenchment index (BCF), as well as some of its components (classified board, golden parachute, and poison pill provisions) are positively associated with large and statistically significant improvements in operating returns on assets (OROA) over the three years following forced managerial turnover; and are neg-

atively associated with pre-turnover OROA. Moreover, using multivariate regressions, I show that the larger performance improvements are the result of improved management, rather than the result of mean reversion from poorer pre-turnover performance. The results are robust to different time frames for post-turnover performance changes, industries included in the sample, definitions for forced turnovers, as well as different performance measures. In addition, the results are unlikely to be driven by the fact that firms in "risky" industries or firms with inferior managers choose higher entrenchment levels.

The results presented in the paper illuminate a fundamental mechanism that underlies the documented negative correlation between entrenchment and firm profitability (GIM and BCF): entrenchment insulates inferior managers from the disciplining forces of external monitors. In addition, the results provide further proof that the provisions identified by BCF, and particularly classified boards, golden parachutes, and poison pills, represent the driving force behind the negative effect of entrenchment.

However, the evidence also shows that the post-turnover performance changes of firms that fire less entrenched CEOs is insignificant. Hence, one could conclude that less entrenched managers that were fired are probably scapegoats. In this respect, FKR's theory that entrenchment may play a beneficial role finds some support; when less entrenched managers are fired, a higher degree of entrenchment might have been preferable.

Lastly, one could provide an alternative interpretation of the evidence that firms that fire entrenched CEOs improve more compared to firms that fire less entrenched CEOs. Namely, entrenchment provisions offer new managers the opportunity to take actions that benefit the firm in the long-term, since these provisions shield them from investors' or potential acquirers' pressure. In contrast, successors in firms with no such provisions in place are "forced" to deliver results quickly, and thus focus more on the short-term, possibly to the detriment of long-term performance. While this interpretation may be plausible, it nevertheless fails to explain pre-turnover performance differences.

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Table 1: Variable definitions

Variables		Description	Source
Accounting performance			
Operating return on assets	*OROA*	Operating income before depreciation (data item #13) divided by total assets (data item #6)	COMPUSTAT
Operating return on sales	*OROS*	Operating income before depreciation (data item #13) divided by total sales (data item #12)	COMPUSTAT
Operating returns on assets (FKR)	*OROA(FKR)*	Operating income after depreciation (data item #178) divided by the sum of property, plant and equipment and current assets (data item #4 + data item #8)	COMPUSTAT
Tobin's Q (market-to-book)	*Q*	The ratio of a) market value of assets: defined as the sum of the book value of assets (data item #6) and the market value of common stock (data item #60) less the book value of common equity (data item #25 * data item #199); and b) book value of assets (data item #6)	COMPUSTAT
Entrenchment variables			
Governance Index	*GI*	An index that counts the presence of 24 anti-takeover provisions (GIM)	IRRC
Entrenchment Index	*EI*	An index that counts the presence of 6 anti-takeover provisions (BCF)	IRRC
Classified Board	*C*	A dummy variable that takes the value 1 if the firm has a classified/staggered board	IRRC/Proxy
Golden Parachute	*GP*	A dummy variable that takes the value 1 if the firm has a golden parachute	IRRC
Poison Pill	*PP*	A dummy variable that takes the value 1 if the firm has a poison pill	IRRC
Incumbent CEO tenure (ln)	*Incumbent tenure*	The natural log of the incumbent CEO's tenure in office (in years)	Forbes 800 & announcements
Monitoring variables			
Board Composition	*Outside board*	A dummy variable that takes the value 1 if more than 60% of the board's members are outsiders. A board member is considered to be an insider if it is a current or former employee of the firm or if it is a member of the CEO's family.	Proxy statements
Board size (ln)	*Board size*	The natural log of the board's size	Proxy statements
Institutional ownership	*Institutional ownership (%)*	Percentage of the firm's stock owned by institutional investors.	CDA/Spectrum
Succession variables			
Turnover type	*Forced*	A dummy variable that takes the value 1 if the managerial turnover was forced	Announcements
Successor type	*Outsider*	A dummy variable that takes the value 1 if the successor is an outsider. A successor is defined as an outsider if his/her tenure with the firm is less than 1 year.	Forbes 800 & announcements
Control variables			
Change in industry OROA	*IOROA(-1,+3)*	Change in the median OROA for firms in the same 2-digit SIC/historic SIC code (data item #324). Subsidiaries, foreign firms, and firms with total assets less than $10m are dropped.	COMPUSTAT
Lagged industry-adjusted OROA	*OROA(-1)*	The OROA adjusted by subtracting median industry OROA, in the year before turnover	COMPUSTAT
Firm size (ln)	*Firm size*	The natural log of the firm's total assets (data item #6).	COMPUSTAT

Table 2: Summary statistics

The table contains statistics for a sample of 1,329 CEO turnover events during the 1980-2000 period. The dummy variable Forced equals one when the outgoing CEO is forced from office. The dummy variable Outsider equals one if the successor CEO has been employed by the firm for less than a year at the time of appointment. The entrenchment dummy variables Classified, Golden Parachute, Poison Pill, Limits to Amend the Charter, Limits to Amend the Bylaws, and Supermajority Voting for Mergers equal one if the firm has the respective policy in place, the narrowly defined Entrenchment Index (Bebchuk et al. (2004)) is the sum of these dummy variables, while the broader Governance Index (Gompers et al. (2003)) is the sum of 24 anti-takeover provisions that include the above (see the data description section). Sales and Total Assets are restated in 2000 dollars, using the CPI, before statistics are computed.

All turnovers	Mean	Median	Std. dev.	Minimum	Maximum	Observations
Outgoing CEO						
Age (years)	61	63	6.18	34	91	1,329
Tenure (years)	9.48	7.83	6.93	.25	48	1,329
Succession characteristics						
Forced	21.52%					
Successor CEO						
Age (years)	52.52	53	6.25	34	73	1,329
Tenure with the firm at time of appointment as CEO	15	13.5	13.03	0	48	1,214
Outsider	22.35%					1,329
Firm characteristics						
Sales (mil. 2000 dollars)	8,578.90	3,891.18	16,429.68	40.15	192,003.00	1,297
Total assets (mil. 2000 dollars)	14,691.20	5,266.81	31,984.76	269.41	419,818.80	1,306
Employees (thousands)	36.38	16.50	71.51	.135	1244	1,291
Governance characteristics						
Outside directors	74.58%	76.92%	12.86%	0.00%	100.00%	1,323
Outsider dominated boards	88.21%					1,323
Board size	13.18	12	4.21	4	35	1,323
Institutional ownership	46.74%	48.50%	19.73%	0.58%	95.09%	1,328
Institutional ownership > 30%	78.46%					1,328
Governance Index (GI)	9.69	10	2.66	2	16	1,235
Entrenchment Index (EI)	2.10	2	1.32	0	6	1,235
Classified Board (C))	56.06%					1,270
Golden Parachute (GP)	57.81%					1,235
Poison Pill (PP)	60.32%					1,235
Limits to mend bylaws	15.87%					1,235
Limits to amend charter	4.13%					1,235
Supermajority voting for mergers	15.63%					1,235

Fig. 1: Mean unadjusted, and industry-adjusted OROA around CEO turnovers

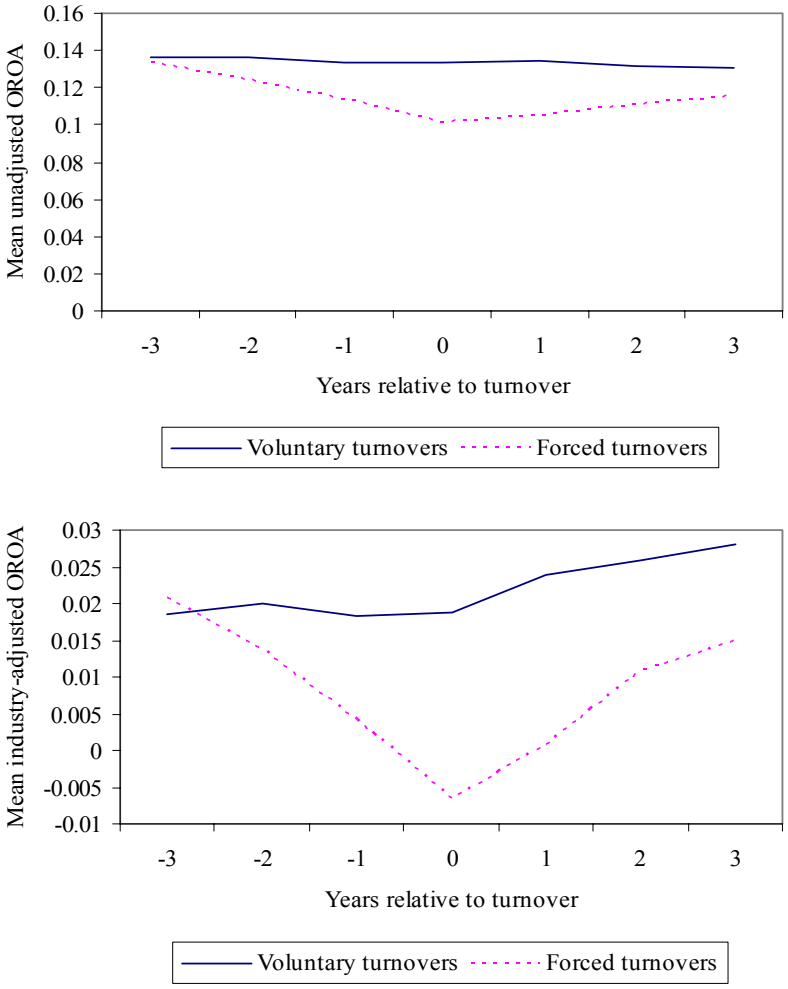

Table 3: Changes in operating returns on assets
The table contains changes in mean unadjusted and industry-adjusted OROA for the periods from the third year prior to the year prior to the turnover year, and from the year prior to the third year after the turnover year. Outliers, observations with missing data, and observations where the incumbent and the successor CEOs held their jobs for less than 9 months in the year prior, and the third year after turnover, are excluded (see footnote 13 for details). Sample sizes and t statistics are reported in parentheses.

Period	Voluntary turnovers	Forced turnovers
Unadjusted OROA		
OROA(-3,-1)	-0.0021	-0.0198
	(760, -1.2948)	(144, -4.9968***)
OROA(-1+3)	-0.0033	0.0018
	(763, -1.7494*)	(145, 0.3233)
Industry-adjusted OROA		
OROA(-3,-1)	0.0000	-0.0163
	(760, 0.0228)	(144, -4.2931***)
OROA(-1+3)	0.0097	0.0107
	(763, 5.1795***)	(145, 2.0180**)

Table 4: Changes in operating returns on assets over the period (-1,+3) and operating return on assets in the year (-1) for the sub-sample of forced turnovers
The table reports changes in the mean unadjusted, and industry-adjusted OROA for the period from the year prior, to the third year after the turnover year, as well as OROA for the year prior to the turnover year for a sample of 135 forced turnovers occurring during the period 1980-2000, differentiated according to various entrenchment measures, and 145 observations differentiated according to different monitoring and other variables. Outliers, observations with missing data, and observations where the incumbent and the successor CEOs held their jobs for less than 9 months in the year prior, and the third year after turnover, are excluded (see footnote 13 for details).

Forced turnovers OROA(-1,+3)	Total Sample	> median	Governance Index	≤ median	> median	Entrenchment Index	≤ median	Yes	Classified Board	No	Yes	Golden Parachute	No	Yes	Poison Pill	No
Unadjusted																
Sample size	135	51		84	54		81	76		59	82		53	82		53
Mean/Difference	0.0015	0.0158	0.0231	-0.0073	0.0170	0.0258	-0.0089	0.0103	0.0202	-0.0099	0.0132	0.0298	-0.0167	0.0128	0.0289	-0.0161
t -stat	0.2441	1.6431	-1.8901*	-0.9671	1.8983	-2.1454**	-1.1347	1.2701	-1.6871*	-1.1386	2.1003	-2.4829**	-1.4641	1.5202	-2.4058**	-2.2058
Industry-adjusted																
Sample size	135	51		84	54		81	59		76	82		53	82		53
Mean/Difference	0.0108	0.0194	0.0139	0.0055	0.0258	0.0251	0.0007	0.0163	0.0126	0.0037	0.0238	0.0333	-0.0094	0.0226	0.0303	-0.0076
t-stat	1.9583	2.0791	-1.2281	0.8162	2.8583	-2.2691**	0.1092	1.9837	-1.1384	0.5404	4.1315	-3.0473***	-0.9219	2.9204	-2.7569***	-1.1710
OROA(-1)																
Unadjusted																
Sample size	135	51		84	54		81	76		59	82		53	82		53
Mean/Difference	0.1144	0.0959	-0.0309	0.1268	0.0963	-0.0301	0.1264	0.1054	-0.0205	0.1260	0.1032	-0.0285	0.1317	0.1067	-0.0196	0.1263
t -stat	17.1538	10.5680	2.2697**	14.0065	10.9845	2.2436**	13.6612	13.3370	1.5359	11.1798	13.6467	2.1173**	10.9550	12.5969	1.4383	11.8020
Industry-adjusted																
Sample size	135	51		84	54		81	76		59	82		53	82		53
Mean/Difference	0.0053	-0.0078	-0.0232	0.0154	-0.0071	-0.0208	0.0137	-0.0003	-0.0129	0.0126	-0.0039	-0.0234	0.0196	0.0021	-0.0083	0.0104
t-stat	0.9805	-1.0625	2.0429**	2.0158	-0.8832	1.8895*	1.8994	-0.0407	1.1726	1.4354	-0.6024	2.1285**	2.0704	0.3029	0.7411	1.1653

Forced turnovers OROA(-1,+3)	Total Sample	> median	Institutional share	≤ median	Outside	Board type	Inside	> median	Board size	≤ median	> median	Incumbent tenure	≤ median	Outsider	Successor yype	Insider
Unadjusted																
Sample size	145	72		73	130		15	61		84	72		73	78		67
Mean/Difference	0.0018	0.0046	0.0055	-0.0009	0.0040	0.0206	-0.0167	0.0067	0.0084	-0.0017	-0.0014	-0.0065	0.0051	0.0089	0.0153	-0.0064
t-stat	0.3233	0.5323	-0.4818	-0.1194	0.6822	-1.1034	-0.0053	0.7678	-0.7295	-0.2268	-0.1795	0.5680	0.6166	1.0629	-1.3427	-0.8548
Industry-adjusted																
Sample size	145	72		73	130		15	61		84	72		73	78		67
Mean/Difference	0.0107	0.0117	0.0019	0.0098	0.0110	0.0025	0.0085	0.0132	0.0043	0.0089	0.0072	-0.0071	0.0142	0.0188	0.0174	0.0013
t-stat	2.0180	1.4553	-0.1809	1.3902	2.0087	-0.1423	0.4140	1.6213	-0.4005	1.2653	0.9576	0.6637	1.8791	2.4631	-1.6478	0.1850
OROA(-1)																
Unadjusted																
Sample size	145	72		73	130		15	61		84	72		73	78		67
Mean/Difference	0.1133	0.1196	0.0114	0.1083	0.1101	-0.0301	0.1402	0.0991	-0.0245	0.1236	0.1068	-0.0142	0.1210	0.1076	-0.0123	0.1199
t -stat	16.9760	14.2749	-0.8470	10.3734	15.9593	1.3783	5.9057	9.0330	1.8282*	15.0821	10.7964	1.0595	13.3874	13.0680	0.9215	11.0878
Industry-adjusted																
Sample size	145	72		73	130		15	61		84	72		73	78		67
Mean/Difference	0.0042	0.0109	0.0110	-0.0001	0.0020	-0.0210	0.0229	-0.0005	-0.0081	0.0076	0.0032	-0.0044	0.0075	-0.0009	-0.0109	0.0100
t-stat	0.7679	1.5823	-0.9986	-0.0136	0.3458	1.1812	1.4644	-0.0698	0.7384	1.0119	0.3857	0.3952	1.0073	-0.1328	1.0024	1.1275

Table 5: Changes in operating returns on assets over the period (-1,+3) and operating return on assets in the year (-1) for the sub-sample of voluntary turnovers
The table reports changes in the mean unadjusted, and industry-adjusted OROA for the period from the year prior, to the third year after the turnover year, as well as OROA for the year prior to the turnover year for a sample of 735 voluntary turnovers occurring during the period 1980-2000, differentiated according to various entrenchment measures, and 760/3 observations differentiated according to various monitoring and other variables. Outliers, observations with missing data, and observations where the incumbent and the successor CEOs held their jobs for less than 9 months in the year prior, and the third year after turnover, are excluded (see footnote 13 for details).

Voluntary turnovers OROA(-1,+3)	Total Sample	> median	Governance Index	≤ median	> median	Entrenchment Index	≤ median	Yes	Classified Board	No	Yes	Golden Parachute	No	Yes	Poison Pill	No
Unadjusted																
Sample size	735	323		412	287		448	420		315	416		319	451		284
Mean/Difference	-0.0030	0.0002	0.0056	-0.0055	-0.0034	-0.0007	-0.0027	-0.0015	0.0036	-0.0050	-0.0032	-0.0004	-0.0028	0.0003	0.0084	-0.0082
t-stat	-1.5585	0.0628	-1.4587	-2.0241	-1.2992	0.1754	-1.0217	-0.6301	-0.9246	-1.5490	-1.2331	0.0972	-0.9556	0.1090	-2.1397**	-2.5473
Industry-adjusted																
Sample size	735	323		412	287		448	420		315	416		319	451		284
Mean	0.0102	0.0153	0.0092	0.0062	0.0118	0.0027	0.0092	0.0119	0.0088	0.0031	0.0103	0.0001	0.0102	0.0142	0.0102	0.0039
t-stat	5.2927	5.1991	-2.3657**	2.4410	4.0872	-0.6743	3.5738	4.8324	-1.0182	1.0294	3.8903	-0.0247	3.5968	5.8320	-2.5862***	1.2557
OROA(-1)																
Unadjusted																
Sample size	735	323		412	286		449	420		315	416		319	451		284
Mean/Difference	0.1348	0.1350	0.0000	0.1350	0.1357	0.0010	0.1346	0.1369	0.0048	0.1321	0.1327	-0.0049	0.1376	0.1353	0.0012	0.1341
t -stat	49.4417	33.9625	0.0766	35.9848	30.5029	-0.1865	38.7283	39.5749	-0.8752	30.1178	36.2770	0.8851	33.6371	39.7093	-0.2211	29.5428
Industry-adjusted																
Sample size	735	323		412	286		449	420		315	416		319	451		284
Mean/Difference	0.0189	0.0167	-0.0045	0.0211	0.0214	0.0038	0.0176	0.0207	0.0040	0.0166	0.0179	-0.0025	0.0204	0.0188	-0.0004	0.0192
t-stat	8.8739	5.5536	1.1593	6.9974	6.0808	-0.8624	6.4985	7.4584	-0.9357	4.9809	6.4990	0.5755	6.0364	6.9810	0.0927	5.4721

Voluntary turnovers OROA(-1,+3)	Total Sample	> median	Institutional share	≤ median	Outside	Board type	Inside	> median	Board size	≤ median	> median	Incumbent tenure	≤ median	Outsider	Successor type	Insider
Unadjusted																
Sample size	763	381		381	675		85	336		424	381		382	89		674
Mean/Difference	-0.0033	-0.0036	-0.0007	-0.0029	-0.0017	0.0137	-0.0155	-0.0042	-0.0016	-0.0026	-0.0063	-0.0062	-0.0002	0.0056	0.0100	-0.0044
t-stat	-1.7494	-1.3353	0.1919	-1.1077	-0.8891	-2.3253**	-2.5575	-1.6783	0.4282	-0.9456	-2.4630	1.6614*	-0.0640	0.8596	-1.7259*	-2.2997
Industry-adjusted																
Sample size	763	381		381	675		85	336		424	381		382	89		674
Mean	0.0097	0.0114	0.0035	0.0079	0.0098	0.0008	0.0090	0.0076	-0.0039	0.0114	0.0090	-0.0013	0.0104	0.0186	0.0101	0.0085
t-stat	5.1796	4.2492	-0.9285	2.9962	4.9525	-0.1407	1.5138	3.0346	1.0221	4.1883	3.4163	0.3560	3.9027	2.6977	-1.7320*	4.4576
OROA(-1)																
Unadjusted																
Sample size	763	381		381	675		85	336		424	381		382	89		674
Mean/Difference	0.1336	0.1444	0.0217	0.1226	0.1303	-0.0323	0.1626	0.1275	-0.0115	0.1390	0.1376	0.0073	0.1302	0.1246	-0.0101	0.1348
t -stat	49.2332	39.2352	-4.0371***	31.2769	44.8999	3.7831***	23.2758	28.7615	2.1129**	41.3950	34.4768	-1.3510	35.2188	15.6490	1.2008	46.7135
Industry-adjusted																
Sample size	763	381		381	675		85	336		424	381		382	89		674
Mean/Difference	0.0182	0.0263	0.0165	0.0097	0.0172	-0.0103	0.0274	0.0179	-0.0007	0.0186	0.0234	0.0099	0.0135	0.0145	-0.0042	0.0187
t-stat	8.7042	8.5486	-4.0081***	3.5291	7.7551	1.5445	4.1343	6.0963	0.1545	6.2772	7.5791	-2.3745**	4.7650	2.2205	0.6395	8.4739

Table 6: Regression results

The tables report the least squares parts of the full maximum likelihood estimation of selection models whereby the dependent variable equals 1 if the incumbent and the successor CEOs held their jobs for at least 9 months in the year prior, and the third year after turnover, and zero otherwise. For all models the independent variables used in the probit regressions are: dummies for outside succession and outside board, board size, incumbent tenure, birth year of the successor CEO, institutional ownership (%), industry-adjusted OROA in the year *after* turnover, dummies for classified board (C), golden parachute (GP), and poison pill (PP), EI – (C + GP + PP), GI – EI, and firm size. The dependent variable in the least squares regression is the change in OROA from the year prior, to the third year after turnover (OROA(-1,+3)). The Inverse Mills Ratio is not reported in full maximum likelihood estimation. The sample excludes outliers (see footnote 13 for details).

	All	Voluntary	Forced	All	Voluntary	Forced	All	Voluntary	Forced
	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)
Forced	-0.0035			-0.0044			-0.0044		
	(-0.62)			(-0.74)			(-0.75)		
Outsider	0.0093	0.0085	0.0111	0.0102	0.0095	0.0137	0.0101	0.0096	0.0151
	(1.81)*	(1.40)	(1.14)	(1.91)*	(1.52)	(1.26)	(1.90)*	(1.52)	(1.45)
Outside board	0.0039	0.0049	-0.0036	0.0059	0.0062	0.0063	0.0053	0.0064	0.0072
	(0.66)	(0.82)	(-0.20)	(0.98)	(1.03)	(0.36)	(0.88)	(1.05)	(0.42)
Board size	0.0066	0.0049	0.0095	0.0051	0.0052	-0.0070	0.0054	0.0052	-0.0008
	(1.14)	(0.78)	(0.59)	(0.82)	(0.79)	(-0.38)	(0.87)	(0.78)	(-0.04)
Incumbent tenure	-0.0058	-0.0035	-0.0199	-0.0057	-0.0034	-0.0216	-0.0057	-0.0034	-0.0199
	(-2.21)**	(-1.29)	(-2.47)**	(-2.08)**	(-1.21)	(-2.62)***	(-2.09)**	(-1.20)	(-2.52)**
Institutional Ownership (%)	0.0240	0.0267	0.0126	0.0233	0.0264	0.0122	0.0226	0.0264	-0.0046
	(2.75)***	(2.82)***	(0.59)	(2.43)**	(2.61)***	(0.51)	(2.36)**	(2.60)**	(-0.20)
IOROA (-1,+3)	0.4194	0.3984	0.5191	0.4295	0.4065	0.5507	0.4283	0.4068	0.5895
	(6.40)***	(5.62)***	(3.31)***	(6.43)***	(5.59)***	(3.95)***	(6.43)***	(5.60)***	(4.44)***
Industry-adjusted OROA (-1)	-0.4427	-0.4105	-0.5893	-0.4430	-0.4119	-0.6021	-0.4435	-0.4115	-0.5674
	(-12.26)***	(-10.46)***	(-6.85)***	(-11.75)***	(-10.39)***	(-6.11)***	(-11.77)***	(-10.39)***	(-5.91)***
Governance Index (GI)				0.0000	-0.0003	0.0007			
				(-0.01)	(-0.43)	(0.34)			
Entrenchment Index (EI)							0.0012	-0.0005	0.0124
							(0.83)	(-0.36)	(2.43)**
GI – EI							-0.0006	-0.0001	-0.0047
							(-0.63)	(-0.10)	(-1.56)
Firm size	-0.0063	-0.0067	-0.0012	-0.0063	-0.0070	0.0018	-0.0060	-0.0070	0.0047
	(-4.46)***	(-4.55)***	(-0.27)	(-4.10)***	(-4.56)***	(0.37)	(-3.90)***	(-4.56)***	(0.96)
Intercept	0.0554	0.0552	0.0406	0.0576	0.0582	0.0444	0.0577	0.0577	0.0219
	(3.27)***	(2.83)***	(1.11)	(3.15)***	(2.79)***	(1.06)	(3.17)***	(2.76)***	(0.55)
N total	1,145	934	211	1,083	890	193	1,083	890	193
N selected	903	758	145	867	732	135	867	732	135
Log pseudo-likelihood	940.29	854.61	101.99	924.70	841.51	102.26	925.032	841.52	106.25
Wald chi^2	233.38***	181.40***	71.20***	234.60***	183.58***	80.20***	234.35***	183.88***	88.75***
Wald test independent equations	29.15***	22.14***	11.25***	34.69***	23.68***	19.61***	35.87***	23.33***	18.78***

Table 6: Regression results continued

	All	Voluntary	Forced	All	Voluntary	Forced	All	Voluntary	Forced
	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)	OROA (-1,+3)
Forced	-0.0045			-0.0045			-0.0046		
	(-0.77)			(-0.76)			(-0.79)		
Outsider	0.0101	0.0096	0.0153	0.0100	0.0096	0.0154	0.0103	0.0093	0.0155
	(1.91)*	(1.52)	(1.47)	(1.89)*	(1.52)	(1.49)	(1.96)**	(1.49)	(1.45)
Outside board	0.0046	0.0059	0.0062	0.0048	0.0064	0.0048	0.0051	0.0067	0.0049
	(0.75)	(0.96)	(0.37)	(0.79)	(1.04)	(0.29)	(0.84)	(1.11)	(0.29)
Board size	0.0050	0.0049	-0.0010	0.0049	0.0052	-0.0019	0.0049	0.0055	-0.0024
	(0.80)	(0.74)	(-0.06)	(0.76)	(0.76)	(-0.11)	(0.79)	(0.84)	(-0.14)
Incumbent tenure	-0.0055	-0.0033	-0.0192	-0.0056	-0.0034	-0.0189	-0.0056	-0.0036	-0.0192
	(-2.02)**	(-1.19)	(-2.42)**	(-2.06)**	(-1.20)	(-2.41)**	(-2.07)**	(-1.30)	(-2.46)**
Institutional ownership (%)	0.0203	0.0249	-0.0059	0.0214	0.0264	-0.0043	0.0174	0.0218	-0.0033
	(2.09)**	(2.38)**	(-0.26)	(2.20)**	(2.55)**	(-0.19)	(1.83)*	(2.10)**	(-0.15)
IOROA (-1,+3)	0.4296	0.4068	0.5912	0.4306	0.4069	0.6090	0.4293	0.4064	0.6142
	(6.45)***	(5.61)***	(4.50)***	(6.46)***	(5.60)***	(4.68)***	(6.42)***	(5.55)***	(4.76)***
Industry-adjusted OROA (-1)	-0.4403	-0.4099	-0.5615	-0.4414	-0.4114	-0.5577	-0.4388	-0.4091	-0.5601
	(-11.61)***	(-10.30)***	(-5.84)***	(-11.67)***	(-10.39)***	(-5.67)***	(-11.75)***	(-10.44)***	(-5.71)***
Classified Board (C)							0.0028	0.0025	0.0023
							(0.74)	(0.61)	(0.24)
Golden Parachute (GP)							-0.0036	-0.0079	0.0186
							(-0.89)	(-1.95)**	(1.51)
Poison Pill (PP)							0.0095	0.0075	0.0204
							(2.24)**	(1.65)*	(1.97)**
(C + GP + PP)	0.0028	0.0004	0.0146						
	(1.53)	(0.24)	(2.53)**						
(GP + PP)				0.0028	-0.0005	0.0192			
				(1.23)	(-0.21)	(2.75)***			
EI – (C + GP + PP)	-0.0021	-0.0025	0.0073				-0.0024	-0.0031	0.0090
	(-0.76)	(-0.90)	(0.86)				(-0.88)	(-1.11)	(1.07)
EI – (GP + PP)				0.0000	-0.0006	0.0065			
				(0.01)	(-0.26)	(1.00)			
GI – EI	-0.0007	-0.0002	-0.0046	-0.0006	-0.0001	-0.0042	-0.0009	-0.0005	-0.0042
	(-0.72)	(-0.18)	(-1.53)	(-0.64)	(-0.10)	(-1.40)	(-0.93)	(-0.50)	(-1.37)
Firm size	-0.0058	-0.0059	0.0047	-0.0059	-0.0070	0.0047	-0.0060	-0.0073	0.0047
	(-3.78)***	(-4.43)***	(0.95)	(-3.75)***	(-4.51)***	(0.96)	(-3.85)***	(-4.70)***	(1.00)
Intercept	0.0575	0.0579	0.0199	0.0579	0.0577	0.0192	0.0612	0.0627	0.0205
	(3.15)***	(2.77)***	(0.50)	(3.17)***	(2.75)***	(0.48)	(3.32)***	(2.99)***	(0.50)
N total	1,083	890	193	1,083	890	193	1,083	890	193
N selected	867	732	135	867	732	135	867	732	135
Log pseudo-likelihood	926.03	841.81	106.50	925.53	841.52	107.20	928.13	844.73	107.31
Wald chi^2	235.16***	184.90***	88.79***	235.62***	183.92***	94.40***	239.20***	188.13***	100.76***
Wald test independent equations	33.06***	22.04***	18.32***	35.57***	23.30***	18.58***	27.86***	18.12***	19.53***

Table 7: Correlations between regressors for forced and voluntary turnovers

Forced Turnovers	Ind.-adj. OROA (-1,+3)	Ind.-adj. OROA(-1)	Outsider	Outside board	Board size	Institutional ownership %	Tenure of incumbent CEO	Governance Index (GI)	Entrenchm. Index (EI)	Classified Board (C)	Golden Parachute (GP)	Poison Pill (PP)	Firm size
Ind.-adj. OROA(-1,+3)	1.0000												
Ind.-adj. OROA(-1)	-0.4814***	1.0000											
Outsider	0.1365	-0.0835	1.0000										
Outside board	0.0119	-0.0983	0.0486	1.0000									
Board size	0.0260	-0.0829	-0.0273	0.2033**	1.0000								
Institutional ownership %	-0.0887	0.2683***	-0.1210	0.0217	-0.1714**	1.0000							
Tenure of incumbent CEO	-0.1045	-0.0107	0.0443	0.0312	0.1726**	-0.0498	1.0000						
Governance Index (GI)	0.0995	-0.1996**	0.0054	-0.0014	0.0796	0.0548	0.0259	1.0000					
Entrenchment Index (EI)	0.2543***	-0.1429*	-0.0342	-0.0611	-0.1590*	0.1856**	-0.0516	0.6822***	1.0000				
Classified Board (C)	0.1049	-0.1068	-0.0412	-0.0574	-0.1342	0.1975**	-0.0386	0.4753***	0.6336***	1.0000			
Golden Parachute (GP)	0.2555***	-0.1815**	0.0930	0.0251	-0.1371	0.0255	-0.1256	0.2776***	0.4999***	0.0868	1.0000		
Poison Pill (PP)	0.2325***	-0.0641	-0.1508*	0.0251	-0.0031	0.1910**	-0.0399	0.4275***	0.6582***	0.2091**	0.3166***	1.0000	
Firm size	-0.0154	-0.0065	-0.0448	0.1186	0.5155***	0.0204	0.1623*	-0.0611	-0.2703***	-0.1704**	-0.1420	-0.1695**	1.0000

Voluntary Turnovers	Ind.-adj. OROA (-1,+3)	Ind.-adj. OROA(-1)	Outsider	Outside board	Board size	Institutional ownership %	Tenure of incumbent CEO	Governance Index (GI)	Entrenchm. Index (EI)	Classified Board (C)	Golden Parachute (GP)	Poison Pill (PP)	Firm size
Ind.-adj. OROA(-1,+3)	1.0000												
Ind.-adj. OROA(-1)	-0.3171***	1.0000											
Outsider	0.0627*	-0.0232	1.0000										
Outside board	0.0051	-0.0560	0.0773**	1.0000									
Board size	-0.0300	-0.0884**	-0.1438***	0.0107	1.0000								
Institutional ownership %	0.0312	0.1804***	0.0140	-0.0355	-0.1427***	1.0000							
Tenure of incumbent CEO	-0.0108	0.0668*	-0.0847**	-0.0714**	-0.0283	0.0084	1.0000						
Governance Index (GI)	0.0693*	-0.0368	-0.0180	0.0259	0.0411	0.1932***	0.0386	1.0000					
Entrenchment Index (EI)	0.0367	0.0096	0.0499	0.0956***	-0.0388	0.1651***	0.0278	0.7443***	1.0000				
Classified Board (C)	0.0386	0.0369	-0.0060	0.0550	-0.0618*	0.1399***	0.0492	0.5172***	0.6560***	1.0000			
Golden Parachute (GP)	0.0009	-0.0213	0.0455	0.1389***	-0.0220	0.0934**	-0.0310	0.4248***	0.6131***	0.1569***	1.0000		
Poison Pill (PP)	0.0951***	-0.0034	0.0455	0.0802**	0.0037	0.2647***	0.0357	0.5779***	0.6682***	0.2670***	0.3988***	1.0000	
Firm size	-0.0762**	-0.1852***	-0.1067***	0.0964***	0.4248***	0.0523	-0.0486	-0.1399***	-0.1989***	-0.0900**	-0.2104***	-0.1186***	1.0000

Table 7: Correlations between regressors continued

Forced turnovers	Classified Board (C)	Golden Parachute (GP)	Poison Pill (PP)	C + GP + PP	EI – (C + GP + PP)	GP + PP	EI – (GP + PP)	GI – EI
Classified Board (C)	1.0000							
Golden Parachute (GP)	0.0868	1.0000						
Poison Pill (PP)	0.2091**	0.3166***	1.0000					
C + GP + PP	0.6350***	0.6801***	0.7403***	1.0000				
EI – (C + GP + PP)	0.2426***	-0.1026	0.1196	0.1275	1.0000			
GP + PP	0.1823**	0.8114***	0.8114***	0.8753***	0.0105	1.0000		
EI – (GP + PP)	0.7345***	-0.0228	0.2018**	0.4479***	0.8365***	0.1103	1.0000	
GI – EI	0.2218***	0.0466	0.1424*	0.2006**	0.1966**	0.1165	0.2628***	1.0000

Voluntary turnovers	Classified Board (C)	Golden Parachute (GP)	Poison Pill (PP)	C + GP + PP	EI – (C + GP + PP)	GP + PP	EI – (GP + PP)	GI – EI
Classified Board (C)	1.0000							
Golden Parachute (GP)	0.1569***	1.0000						
Poison Pill (PP)	0.2670***	0.3988***	1.0000					
C + GP + PP	0.6622***	0.7233***	0.7697***	1.0000				
EI – (C + GP + PP)	0.2975***	0.0960***	0.1370***	0.2464***	1.0000			
GP + PP	0.2528***	0.8395***	0.8331***	0.8924***	0.1391***	1.0000		
EI – (GP + PP)	0.7583***	0.1526***	0.2418***	0.5359***	0.8480***	0.2353***	1.0000	
GI – EI	0.2705***	0.1650***	0.3419***	0.3601***	0.1336***	0.3021***	0.2414***	1.0000

Table 8: Characteristic comparisons for forced and voluntary turnover observations grouped by mean changes in industry-adjusted OROA

Forced turnovers	Residuals	Governance Index (GI)	Entrenchment Index (EI)	Classified Board (C)	Golden Parachute (GP)	Poison Pill (PP)	C + GP + PP	GP + PP
Quintile 1	-0.0641	9.5185	1.7778	0.5185	0.4815	0.5556	1.5556	1.0370
	29	27	27	27	27	27	27	27
Quintiles 2-4	-0.0036	9.7125	2.0375	0.5500	0.6000	0.5250	1.6750	1.1250
	87	80	80	80	80	80	80	80
Quintile 5	0.0748	9.8571	2.7500	0.6429	0.7500	0.8929	2.2857	1.6429
	29	28	28	28	28	28	28	28
t statistics for								
(Q-1) - (Q 2-4)	-13.4374***	-0.3321	-0.9526	-0.2813	-1.0713	0.2727	-0.5238	-0.4996
(Q 2-4) - (Q 5)	-12.1232***	-0.2514	-2.7448***	-0.8501	-1.4224	-3.6259***	-2.9339***	-3.1564***
(Q 1) - (Q 5)	-11.4627***	-0.5520	-2.8646***	-0.9248	-2.0930**	-2.9781***	-2.7765***	-2.9185***

Voluntary turnovers	Residuals	Governance Index (GI)	Entrenchment Index (EI)	Classified Board (C)	Golden Parachute (GP)	Poison Pill (PP)	C + GP + PP	GP + PP
Quintile 1	-0.0584	10.0067	2.1141	0.5302	0.5839	0.6040	1.7181	1.1879
	153	149	149	149	149	149	149	149
Quintiles 2-4	-0.0018	9.7488	2.1129	0.5853	0.5783	0.5945	1.7581	1.1728
	458	434	434	434	434	434	434	434
Quintile 5	0.0642	10.0592	2.0789	0.5724	0.5132	0.6776	1.7632	1.1908
	152	152	152	152	152	152	152	152
t statistics for								
(Q-1) - (Q 2-4)	-30.5635***	1.0003	0.0091	-1.1709	0.1183	0.2048	-0.3918	0.1911
(Q 2-4) - (Q 5)	-34.9505***	-1.2150	0.2679	0.2767	1.3937	-1.8162*	-0.0506	-0.2318
(Q 1) - (Q 5)	-36.1563***	-0.1773	0.2316	-0.7337	1.2319	-1.3306	-0.3790	-0.0309

Fig. 2: Mean unadjusted and industry-adjusted OROA around forced CEO turnovers for firms with above- and below-median levels of the governance and entrenchment indices.

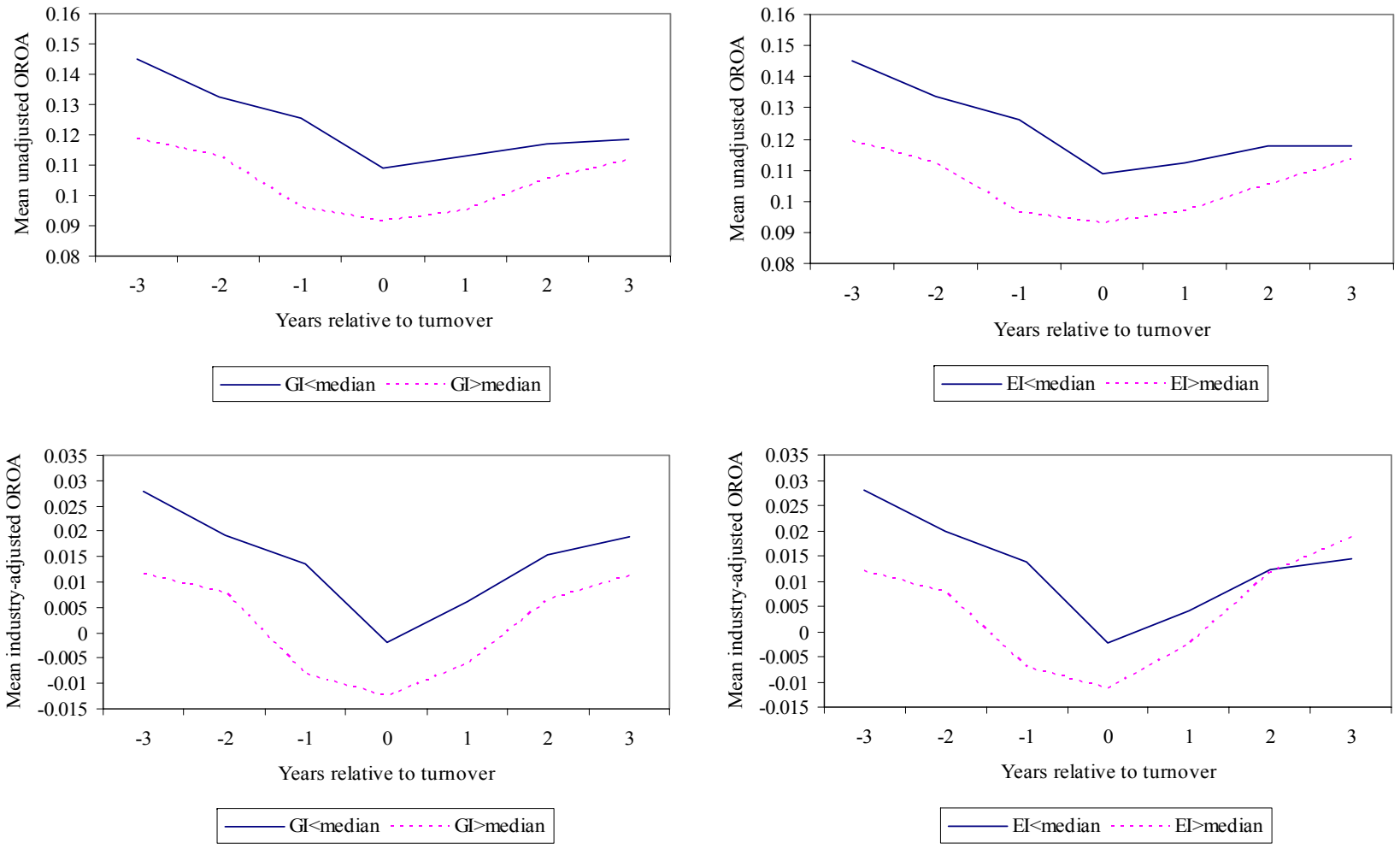

Fig. 3: Mean unadjusted and industry-adjusted OROA around forced CEO turnovers for firms with and without golden parachutes and poison pills.