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, firms with manager-friendly entrenchment provisions may (i) *select* or (ii) *insulate* inferior managers, leading to poorer firm performance. In effect, entrenchment raises the cost of (i) *hiring* or (ii) *firing* a manager. These hypotheses have several implications for firm performance surrounding forced managerial turnover, which I empirically test in this paper. Under the *Selection Hypothesis*, firms with entrenched managers should exhibit poorer performance both prior to and post turnover, compared to firms with less entrenched managers. Intuitively, the higher cost of hiring associated with entrenchment precludes firms to overcome the self-selection tendency of inferior managers. In contrast, under the *Insulation Hypothesis*, firms with entrenched managers should exhibit poorer performance prior to turnover, and should

[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)).

experience larger performance improvements post turnover, 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.

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, first, the hypothesis that firms with manager-friendly entrenchment provisions select inferior CEOs and find evidence contrary to its second prediction. Specifically, I find that the *narrowly* defined entrenchment index EI (BCF) is *not* significantly negatively associated with operating returns on assets (OROA) in the third year following forced CEO turnover. That is, both entrenched and less entrenched firms appoint equally qualified CEOs. I then proceed with testing the hypothesis that firms with manager-friendly entrenchment provisions insulate inferior CEOs and find strong empirical support for both of its predictions. Specifically, I find that EI is positively associated with large and statistically significant improvements in OROA during the three years following forced CEO turnover; and is negatively associated with pre-turnover OROA. More importantly, and coupled with the evidence that both entrenched and less entrenched firms appoint equally qualified CEOs, I show that these larger performance improvements are the result of improved management, rather than mean reversion from worse pre-turnover performance. Lastly, the positive association between entrenchment and changes in firm performance (and implicitly 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.

[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.

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]

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. Wasserman, Anand and Nohria (2001) argue that CEOs' impact on a firm performance depends on their resources and opportunities. They show that CEO fixed-effects explain more of the variance in firm performance in industries that are concentrated, depend on other industries, and have slower growth rates (proxies for scarce opportunities); and when firms have lower debt levels, and more managerial slack (proxies for resource availability). Lastly, HMP find that firms experiencing managerial succession exhibit an increase of 1.3% in OROA during the three years following forced 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 can have a negative impact on firm performance through the hiring of CEOs (*Selection Hypothesis*). Inferior managers could insure themselves by seeking employment opportunities in firms that have entrenchment provisions in place. If the cost of screening is high enough, these firms end

[3] This assumption underlies the "scapegoat hypothesis" proposed by Gamson and Scotch (1964).

[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.

up with a pool of CEO candidates that are inferior, on average. Consequently, entrenchment will be associated with poor performance prior to and post forced CEO turnover. In addition, entrenchment can decrease the likelihood of firing inferior CEOs (*Insulation Hypothesis*). Entrenched firms come under the scrutiny of potential acquirers only when the expected benefits from changing their top management compensate for the higher cost of takeover. Consequently, entrenchment will be associated with poorer performance prior to forced CEO turnover, and larger performance improvements post forced CEO 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.

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."

[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, 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]

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 share-

[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.

[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.

holdings, 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.

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

[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.

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 governance index (GI) 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 entrenchment index (EI) 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. 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. 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. 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 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.

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

The purpose of the study is to use the context of CEO turnover to evaluate the impact of managerial entrenchment on the relationship between CEOs and firm performance.

The *Selection Hypothesis* posits that firms with manager-friendly entrenchment provisions in place will select inferior CEOs and, consequently, will exhibit poorer pre and post-turnover performance. The *Insulation Hypothesis* posits that firms with manager-friendly provisions in place will insulate inferior CEOs and, consequently, will exhibit poor pre-turnover performance and larger post-turnover performance improvements. To test these hypothesis I estimate the following:

$$OROA(-1)_i = \alpha + \beta \times Entrenchment_i + \gamma \times X_i + \varepsilon_i \quad (1)$$

$$OROA(+3)_i = \alpha + \beta \times Entrenchment_i + \gamma \times X_i + \varepsilon_i \quad (2)$$

$$\Delta OROA(-1,+3)_i = \alpha + \beta \times Entrenchment_i + \gamma \times X_i + \varepsilon_i \quad (3)$$

where $OROA(-1)_i$, $OROA(+3)_i$ and $\Delta OROA(-1,+3)_i$ represent firm i's operating return on assets in the year prior to the turnover year, $t = -1$, the third year after the turnover year, $t = +3$, and the change in firm i's operating return on assets from the year prior, to the third year after the turnover year; $Entrenchment_i$ represents the entrenchment index of firm i (EI or GI); X_i represents a vector of covariates; and ε_i represents the error term.

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.

Lastly, I follow HMP and estimate the following regression as well:

$$\Delta OROA(-1,+3)_i = \alpha + \eta \times Forced_i + \beta \times Entrenchment_i + \gamma \times X_i + \varepsilon_i \qquad (4)$$

where $Forced_i$ represents the dummy variable that codes the turnover type. In contrast to HMP, I estimate a second variant of (4), whereby I interact the succession-type dummy variable with $Entrenchment_i$ and the regressors X_i. Although I do not report these results, I use this approach to argue that (4) 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 $Entrenchment_i$ and 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

Fig. 1 provides an illustration of the paper's main results. It plots mean unadjusted and industry-adjusted performance in the seven years centered on the turnover year for firms with above- and below-median levels of GI and EI. It is apparent that firms that fire entrenched managers perform consistently worse in the pre-turnover years. However, there is no indication of significant performance differences in the third year after turnover. I proceed with analyzing in detail the empirical evidence for the hypotheses of the paper.

4.1 The Selection Hypothesis

The Selection Hypothesis posits that entrenchment will be associated with poor pre and post turnover performance. Table 3 provides details on the magnitude and statistical significance of performance differences associated with various entrenchment measures.[11] Specifically, the table presents comparisons between mean unadjusted and industry-adjusted OROA(-1) and OROA(+3) between firms with entrenched or non-entrenched management, and firms with or without some of the most prevalent provisions in the EI.

[11] The sample 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 (either due to retirement, firing, merger, takeover or bankruptcy). 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.

Firms with a GI or EI above their respective median levels (10 and 2) exhibit pre-turnover unadjusted and industry-adjusted OROA that are approximately 3% and 2% lower compared to firms with below-median GI or EI. For both GI and EI the differences in performance are significant at 5% and 10% levels for unadjusted and industry-adjusted measures. The same pattern emerges when examining performance differences between firms with or without a classified board, golden parachute and poison pill provision. Firms that have these provisions in place perform worse, and the performance differences are large in magnitude, ranging from 0.83% to 2.85% (except for the golden parachute provision, these differences are not statistically significant at conventional levels).

In contrast, performance differences do not seem to persist after turnover. There exist no statistically significant differences in unadjusted or industry-adjusted OROA between firms with GI or EI below or above the median, and firms with or without a classified board, golden parachute and poison pill provision.

This evidence is further reinforced by the results from multi-variate regressions presented in Table 4. Columns 1-3 presents the results for the estimation of

$$OROA(-1)_i = \alpha + \beta \times Entrenchment_i + \gamma \times X_i + \varepsilon_i$$

In fact, column (1) presents the benchmark results without controlling for managerial entrenchment. The only statistically significant explanatory variable is the lagged industry-adjusted OROA, which has a positive coefficient. In columns (2) and (3) I introduce GI and EI as covariates. The entrenchment variables are negatively and significantly associated with pre-turnover performance. The interpretation of the coefficients is as follows: a one-point increase in GI or EI is associated with a decrease in industry-adjusted OROA(-1) of 0.25% and 0.65% respectively. In addition, the magnitude and statistical significance of the lagged industry-adjusted OROA is preserved.

Columns (1a)-(3a) presents the results for the estimation of

$$OROA(+3)_i = \alpha + \beta \times Entrenchment_i + \gamma \times X_i + \varepsilon_i$$

As before, column (1a) presents the benchmark results, while columns (2a) and (3a) introduce GI and EI as covariates. Contrary to the implications of the Selection Hypothesis, entrenchment is not associated with post-turnover performance differences; the coefficients on the entrenchment variables are statistically insignificant at conventional levels. As ex-

pected, lagged industry-adjusted OROA has a strong explanatory power. The coefficients are positive and statistically significant at 1% level. In addition, a puzzling result consistent throughout the three models is that firms that have an outsider-dominated board of directors exhibit poorer post-turnover performance.[12]

Recall that the sample selects against observations where the successor was fired or retired early, and when the company was taken over, merged or entered bankruptcy early in the post-turnover years (see footnote 11). I discuss here the results from the sample selection probit regression, presented in Table 5. I focus on columns (2) and (3), whereby the selection model appropriately characterizes this endogeneity issue. First, post-turnover performance is the strongest determinant of survival. The positive and significant coefficient indicates that a better post-turnover performance increases the likelihood that the successor CEO or the company itself will survive. Of the entrenchment provisions, golden parachute and poison pill provisions play an important role. The presence of a golden parachute provision reduces the chance of survival, possibly indicating that the successor CEO is more likely to let go of his position, when facing a takeover attempt. In contrast, the presence of a poison pill provision increases the likelihood of survival, indicating that the firm is less likely to be taken over. Lastly, the incumbent's tenure increases the likelihood of being selected in the sample. This result can be explained by the fact that the sample is biased against observations where the incumbent's tenure was less the 9 months in the pre-turnover year.

The evidence presented in this sub-section does not support the Selection Hypothesis. Firms that fire entrenched managers do indeed perform poorly, before turnover. However, there is no evidence that these firms perform poorly after turnover. In fact, post-turnover performance converges, indicating that both entrenched and less entrenched firms appoint equally qualified CEOs.

4.2 The Insulation Hypothesis

The alternative interpretation for the negative relationship between entrenchment and performance is that entrenchment provisions insulate inferior CEOs from the disciplining forces of monitors. The Insulation Hypothesis posits that entrenchment will be associated with poor pre-turnover performance, and with larger post-turnover performance improvements.

[12] The test statistics presented in the last row of Table 3 reject the endogeneity issue for some of the models. I have run simple OLS regressions for all models and the results are essentially unchanged.

In addition to the results on pre-turnover performance discussed above, Table 3 presents overwhelming evidence in support of this hypothesis. Firms that fire entrenched managers exhibit significantly larger performance changes in the three years following turnover. Firms with a GI above the median exhibit increases by 1.58% in unadjusted OROA and 1.94% in industry-adjusted OROA, compared to firms with below-median GI, whereby unadjusted OROA decreases by 0.73%, while industry adjusted OROA increases by 0.55%. The 2.30% difference in unadjusted OROA is significant at the 10%, while the 1.39% difference in industry-adjusted OROA is not significant at conventional levels.

Results are considerably stronger in the case of EI. Firms with an EI above the median exhibit average increases by 1.70% and 2.58% in unadjusted and industry-adjusted OROA, amounting to differences of about 2.5% compared to firms with below-median EI. These differences in performance changes are significant at the 5% level. In addition, firms that had in place golden parachute or poison pill provisions exhibit increases in unadjusted and industry-adjusted performance by about 3% compared to firms that did not have these provisions in place. 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.

The result that entrenchment is associated with poorer pre-turnover performance and with larger post-turnover performance increases is not definitive evidence that entrenchment provisions insulate inferior CEOs: larger post-turnover improvements could be the result of mean reversion from worse pre-turnover performance. To account for this possibility, I use industry-adjusted performance in the pre-turnover year as a control in multivariate regressions. Columns (1b)-(3b) present the results for the estimation of

$$\Delta OROA(-1,+3)_i = \alpha + \beta \times Entrenchment_i + \gamma \times X_i + \varepsilon_i$$

As before, column (1b) presents the benchmark results, while columns (2b) and (3b) introduce GI and EI as covariates. In all models, pre-turnover industry-adjusted OROA exhibits a statistically significant, negative coefficient, a clear indication of mean reversion: poorer pre-turnover performance is associated with larger post-turnover performance improvement. To control for industry effects, I introduce the change in average industry OROA over the years (-1,+3). The coefficient on this variable is positive and statistically significant throughout the models: 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 throughout all models: 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 create an organizational culture or engage in activities that hamper firm performance in a persistent manner, and are not easy to reverse by successors.

The model presented in column (2b) 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 this model without controlling for pre-turnover industry-adjusted OROA, and obtain a small positive coefficient on GI, significant only at 20% level. The purpose of this exercise is to highlight the effect of failing to account for mean reversion.

The model presented in column (2c) splits GI into two sub-indices: EI and (GI – EI). In contrast to (2a), the coefficient on the entrenchment variable EI becomes large and statistically significant: a one-point increase in EI leads to an increase in OROA by 1.24%. In addition, introducing this measure of managerial entrenchment improves the likelihood function of the model by 4.2%.[13]

The positive sign of this coefficient indicates that firms that fire entrenched managers exhibit larger post-turnover performance improvements, even after control for their poorer pre-turnover performance. The working assumption was that only the managerial component of performance has persistent effects. Therefore, this evidence implies that firms that fire entrenched managers exhibit a larger improvement in the managerial quality component. Coupled with the evidence that both entrenched and less entrenched firms appoint equally qualified CEOs, I conclude that entrenched managers that were fired, were, on average, inferior. That is, entrenchment insulates inferior CEOs.

The sample selection probit regressions in columns (1b)-(3b) of Table 5 confirm previous results. The likelihood of being selected in the sample is influenced by post-turnover performance, golden parachute and poison pill provisions, and the incumbent's tenure.

[13] I used the variance inflation factor test to check for multicollinearity; none of the regressors in the models (1b)-(3b) pose problems of this sort. In addition, Table 6 presents correlations between the regressors.

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. 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 7, together with the statistics that test for the significance of the difference between the means across pairs of quintiles. 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.

4.3 Voluntary vs. forced turnovers

Table 8 reproduces columns (3), (3a) and (3b) from Table 4, with EI and (GI – EI) as measures of managerial entrenchment, and replicates these regressions for the sub-sample of voluntary turnovers. In addition, the table also shows results for the pooled regressions that include a dummy variable for the type of turnover.[14]

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 provide rather tenuous support, in particular for the hypothesis that entrenchment insulates inferior managers. The results in Table 8 shows that this concern is not warranted. EI has no statistical significance in the case of voluntary turnovers.

The results in the pooled regression associate larger institutional holdings with larger performance improvements. However, the explanatory power of institutional ownership is significant only for the case of voluntary turnovers. This makes it harder to argue that external monitors play a role in the relationship between forced CEO turnover and subsequent performance improvements. A potential interpretation of this result is one of optimal investor behavior: investors hold larger blocks of shares in firms expected to perform better.

[14] To justify the separate analysis for each sub-sample of turnovers, I introduced interaction terms between the turnover-type dummy and the other regressors. The statistical test of the null hypothesis that the coefficients on the interaction terms are jointly equal to zero is rejected. These results are not reported.

Unreported results provide evidence that firms whereby an outsider was appointed, perform slightly (but insignificantly) worse in the year prior to turnover and exhibit significantly larger improvements in post-turnover performance. Moreover, the coefficient on the dummy variable *Outsider* is consistently significant at 15% level in all models, providing some evidence that outsider successors replace inferior incumbents.

4.4 Robustness

In this section, I examine the robustness of the regression results regarding the impact of entrenchment measures on pre and post-turnover performance and changes in performance for forced turnovers. Table 9 lists the coefficient on GI and EI for all regressions and alternative specifications that 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. I replicated the regression results without eliminating the outliers from the sample; the magnitude and the statistical significance of the coefficients on the entrenchment indices GI and EI are essentially the same.

■ **Time frame for post-turnover performance changes.** In addition, I replicated the regressions considering time frames ranging from 2 to 5 years for post-turnover performance changes. The magnitude and the statistical significance of the coefficients on the entrenchment indices GI and EI 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. When excluding firms in these industries, the coefficient on EI in the pre-turnover performance regression becomes slightly less significant, while the coefficient in the post-turnover performance change regression become larger and significant 1% level.

■ **Definition of forced turnovers.** Successions are classified as forced if any of the articles surveyed reported that the CEO was fired, forced from position or departed for policy differences. Successions are also 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 a similar position, or the retirement was not announced at least 6 months in advance. Cases tentatively classified as forced were further investigated and reclassified if the CEO departed for personal or business reasons 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 and EI are qualitatively similar.

■ **Performance measures.** Lastly, I replicated the regressions in Table 4 using two alternative 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); and

(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.

Using either of these performance measures, the results are qualitatively similar. In all regressions the coefficient on EI becomes slightly less significant, with the exception of pre-turnover performance and OROS, when the coefficient becomes significant at 1% level.

4.5 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 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

Recent work in corporate governance documented a negative relationship between managerial entrenchment – defined as a set of provisions that restrict shareholder rights and provide anti-takeover defenses – and firm performance. 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 two hypotheses that may illuminate the fundamental mechanisms that underlie this result. The first hypothesis states that firms with manager friendly entrenchment provisions *select* inferior CEOs; the second hypothesis states that firms with manager friendly entrenchment provisions *insulate* inferior CEOs.

I find strong empirical support for two predictions following from the *Insulation Hypothesis*. 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) over the three years following forced managerial turnover; and is negatively 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. In contrast, I do not find support for the *Selection Hypothesis*. Regression results show that both entrenched and less entrenched firms appoint equally qualified CEOs.

However, the evidence also shows that the post-turnover performance changes of firms that fire less entrenched CEOs are negligible; hence, these CEOs are scapegoats.[15] In this light, FKR's theory that entrenchment plays a beneficial role finds some support; when less entrenched CEOs are fired, a higher entrenchment level might have been preferable.

[15] Brandenburger and Polak (1996) and Dezso (2005) provide rational theories of scapegoating.

The main result of the paper is that firms with manager friendly entrenchment provisions insulate inferior CEOs. There are three alternative interpretations of what an inferior CEO is. First, an inferior CEO can have inferior managerial abilities (type), as in adverse selection setting; second, an inferior CEO can engage in suboptimal managerial behavior (shirking, empire-building, extraction of private benefits), as in a moral hazard setting; lastly, an inferior CEO can be a CEO whose skills no longer match the firm's needs, as in a setting with changing types. These interpretations are observationally equivalent. An investigation of managerial compensation could shed some light on this issue. Specifically, if the performance-related portion of compensation for both entrenched and less entrenched CEOs is similar, it would be easier to argue that CEOs are differentiated by managerial abilities rather than managerial behavior.

There exists 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.

Lastly, one could argue that the impact of CEOs on firm performance is overstated. In fact, there exists anecdotal evidence that forced CEO turnover is followed by turnover at the top-management level. Therefore, poor pre-turnover performance and the ensuing performance improvements exhibited by entrenched firms should be attributed to the entire top-management team, not only the incumbent and successor CEOs. Future research in the spirit of Bertrand and Schoar (2003) could address this important point.

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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
Industry-adjusted OROA	*OROA(t)*	The OROA adjusted by subtracting median industry OROA, in the year *t*.	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 forced CEO turnovers for firms with above- and below-median levels of the governance and entrenchment indices.

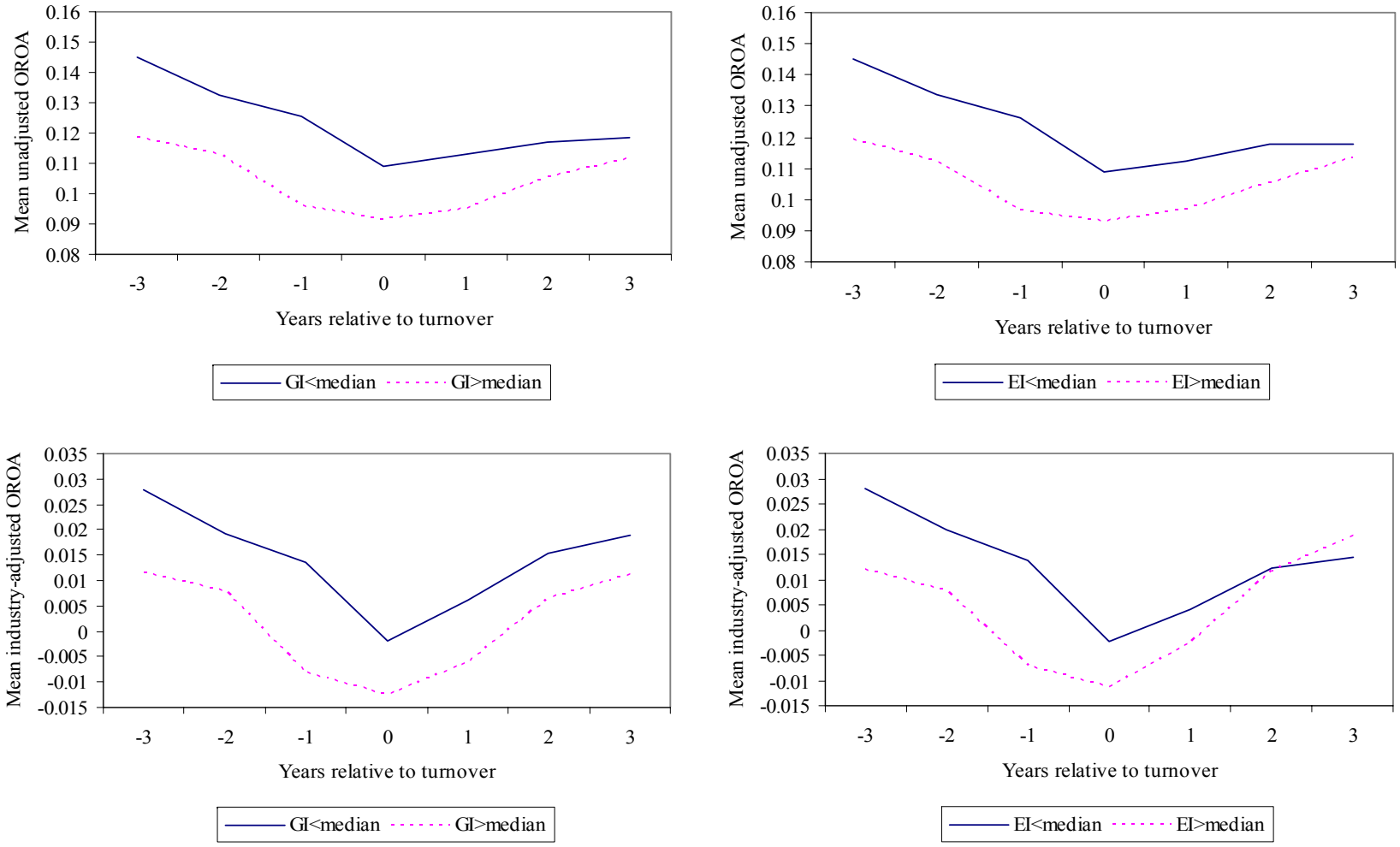

Table 3: Operating returns on assets in the years (-1) and (+3) and changes in operating returns on assets over the period (-1,+3)
The table reports mean unadjusted, and industry-adjusted OROA for the year prior to the turnover year (-1), the third year after the turnover year (+3), as well changes in the mean unadjusted, and industry-adjusted OROA for the period from the year prior, to the third year after the turnover year (-1,+3) for a sample of 135 forced turnovers occurring during the period 1980-2000, differentiated according to various entrenchment measures. 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 11 for details).

Forced turnovers OROA(-1)	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	0.1144	0.0958	-0.0298	0.1257	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	10.4528	-2.2006**	13.9980	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	-0.0081	-0.0215	0.0135	-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	-1.0951	-1.9378*	1.8177	-0.8832	-1.8895*	1.8994	-0.0407	1.1726	1.4354	-0.6024	-2.1285**	2.0704	0.3029	-0.7411	1.1653
OROA(+3)																
Unadjusted																
Sample size	135	51		84	54		81	76		59	82		53	82		53
Mean/Difference	0.1159	0.1116	-0.0068	0.1184	0.1133	-0.0043	0.1176	0.1157	-0.0004	0.1161	0.1164	0.0013	0.1151	0.1195	0.0094	0.1102
t –stat	18.4994	10.7401	-0.5219	15.4757	11.9884	-0.3320	14.0558	13.9481	-0.0278	12.0525	14.4976	0.0993	11.3849	13.6825	0.7297	12.9409
Industry-adjusted																
Sample size	135	51		84	54		81	76		59	82		53	82		53
Mean/Difference	0.0161	0.0113	-0.0077	0.0190	0.0187	0.0043	0.0144	0.0160	-0.0003	0.0162	0.0200	0.0098	0.0101	0.0247	0.0220	0.0027
t-stat	2.8200	1.1739	-0.6486	2.6807	2.0203	0.3642	1.9730	2.0686	-0.0225	1.9038	2.7001	0.8411	1.1241	3.1139	1.9005*	0.3647
OROA(-1,+3)																
Unadjusted																
Sample size	135	51		84	54		81	76		59	82		53	82		53
Mean/Difference	0.0015	0.0158	0.0230	-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*	-0.9761	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

Table 4: Results for the OLS regressions of the sample selection model

The table reports the least squares regression results of the maximum likelihood estimation of the sample selection model. The dependent variables in the least squares regressions are industry-adjusted OROA for the year prior to the turnover year (-1), the third year after the turnover year (+3), as well changes in the mean unadjusted OROA for the period from the year prior, to the third year after the turnover year (-1,+3). The dependent variable in the probit selection regression 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 Inverse Mills Ratio is not reported in the maximum likelihood estimation. The sample excludes outliers (see footnote 11 for details).

Dependent Variables	Industry-adjusted OROA(-1)			Industry-adjusted OROA(+3)			Unadjusted OROA(-1,+3)		
Independent Variables	(1)	(2)	(3)	(1a)	(2a)	(3a)	(1b)	(2b)	(3b)
Outsider				0.0079	0.0069	0.0073	0.0111	0.0137	0.0151
				(1.49)	(1.22)	(1.28)	(1.14)	(1.26)	(1.45)
Outside board	-0.0132	-0.0100	-0.0108	-0.0154	-0.0156	-0.0150	-0.0036	0.0063	0.0072
	(1.48)	(0.89)	(0.92)	(1.83)*	(1.89)*	(1.81)*	(-0.20)	(0.36)	(0.42)
Board size	-0.0097	-0.0107	-0.0120	-0.0143	-0.0127	-0.0116	0.0095	-0.0070	-0.0008
	(0.90)	(0.76)	(0.85)	(1.32)	(1.06)	(0.98)	(0.59)	(-0.38)	(-0.04)
Incumbent tenure	-0.0081	-0.0105	-0.0106	-0.0007	-0.0007	-0.0011	-0.0199	-0.0216	-0.0199
	(1.17)	(1.48)	(1.48)	(0.16)	(0.15)	(0.22)	(-2.47)**	(-2.62)***	(-2.52)**
Institutional Ownership (%)	0.0016	0.0109	0.0157	0.0152	0.0143	0.0103	0.0126	0.0122	-0.0046
	(0.08)	(0.50)	(0.71)	(1.19)	(1.04)	(0.78)	(0.59)	(0.51)	(-0.20)
Industry-adjusted OROA (-2)	0.7006	0.5945	0.5969						
	(9.94)***	(6.28)***	(6.33)***						
Industry-adjusted OROA (+2)				0.8778	0.8920	0.8814			
				(16.14)***	(16.08)***	(16.15)***			
IOROA (-1,+3)							0.5191	0.5507	0.5895
							(3.31)***	(3.95)***	(4.44)***
Industry-adjusted OROA (-1)							-0.5893	-0.6021	-0.5674
							(-6.85)***	(-6.11)***	(-5.91)***
Governance Index (GI)		-0.0025			0.0005			0.0007	
		(1.66)*			(0.56)			(0.34)	
Entrenchment Index (EI)			-0.0065			0.0039			0.0124
			(1.72)*			(1.25)			(2.43)**
GI – EI			-0.0005			-0.0009			-0.0047
			(0.22)			(0.49)			(-1.56)
Firm size	0.0051	0.0048	0.0036	0.0025	0.0018	0.0027	-0.0012	0.0018	0.0047
	(1.61)	(1.27)	(0.99)	(1.10)	(0.69)	(0.96)	(-0.27)	(0.37)	(0.96)
Intercept	0.0110	0.0446	0.0492	0.0143	0.0136	0.0095	0.0406	0.0444	0.0219
	(0.36)	(1.61)	(1.73)*	(0.64)	(0.56)	(0.39)	(1.11)	(1.06)	(0.55)
N total	224	205	205	211	194	194	211	193	193
N selected	158	147	147	145	136	136	145	135	135
Log pseudo-likelihood	159.01	156.70	157.64	182.41	175.17	176.33	101.99	102.26	106.25
Wald chi^2	215.83***	150.14***	157.52***	334.43***	329.24***	349.82***	71.20***	80.20***	88.75***
Wald test independent equations	0.77	9.04***	8.62***	2.17	2.35	1.21	11.25***	19.61***	18.78***

Table 5: Results for the Probit regression of the sample selection model

The table reports results for the Probit selection regression 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. The dependent variables in the least squares regressions are industry-adjusted OROA for the year prior to the turnover year (-1), the third year after the turnover year (+3), as well changes in the mean unadjusted OROA for the period from the year prior, to the third year after the turnover year (-1,+3) (see Table 5). The sample excludes outliers (see footnote 13 for details).

Dependent Variables in OLS	Industry-adjusted OROA(-1)			Industry-adjusted OROA(+3)			Unadjusted OROA(-1,+3)		
Independent Variables in Probit	(1)	(2)	(3)	(1a)	(2a)	(3a)	(1b)	(2b)	(3b)
Outsider	0.0567	0.0336	0.0414	0.0690	0.0514	0.0617	0.0866	0.1029	0.0906
	(0.31)	(0.21)	(0.26)	(0.40)	(0.28)	(0.33)	(0.47)	(0.51)	(0.45)
Outside board	0.0679	0.0566	0.0594	0.0185	-0.1019	-0.1027	-0.1567	-0.2359	-0.2565
	(0.21)	(0.20)	(0.20)	(0.07)	(0.38)	(0.38)	(0.47)	(0.72)	(0.77)
Board size	-0.0227	0.3211	0.3471	0.0330	0.3232	0.3332	0.1981	0.4748	0.4117
	(0.07)	(0.91)	(0.97)	(0.09)	(0.85)	(0.88)	(0.56)	(1.25)	(1.08)
Incumbent tenure	0.4786	0.4330	0.4372	0.5224	0.5098	0.5046	0.5110	0.5248	0.5267
	(4.22)***	(3.65)***	(3.69)***	(4.50)***	(4.13)***	(4.05)***	(4.58)***	(4.47)***	(4.45)***
Institutional Ownership (%)	0.1891	0.2107	0.1172	0.3033	0.0681	0.0209	0.0138	-0.5060	-0.3052
	(0.42)	(0.41)	(0.23)	(0.69)	(0.14)	(0.04)	(0.03)	(1.01)	(0.61)
Industry-adjusted OROA (+1)	2.4105	3.5126	3.4820	1.1257	1.3671	1.2510	4.0615	4.9121	4.6922
	(1.12)	(2.72)***	(2.67)***	(0.86)	(0.95)	(0.87)	(1.84)*	(2.78)***	(2.54)**
Classified (C)		-0.0894	-0.0493		0.1811	0.2017		0.1719	0.0981
		(0.43)	(0.24)		(0.95)	(1.01)		(1.01)	(0.55)
Golden parachute (GP)		-0.5056	-0.4767		-0.3147	-0.3013		-0.2708	-0.3512
		(2.20)**	(2.07)**		(1.46)	(1.33)		(1.43)	(1.75)*
Poison Pill (PP)		0.3960	0.4465		0.2100	0.2511		0.5584	0.4468
		(2.02)**	(2.11)**		(0.94)	(1.14)		(2.85)***	(2.23)**
EI – (C + GP + PP)		-0.1735	-0.1379		-0.1577	-0.1299		-0.1071	-0.1901
		(1.31)	(0.97)		(1.08)	(0.90)		(0.81)	(1.33)
GI – EI		-0.0174	-0.0360		-0.0049	-0.0151		-0.0441	-0.0044
		(0.35)	(0.66)		(0.10)	(0.30)		(0.93)	(0.08)
Successor's Birth Year	0.0006	0.0060	0.0067	-0.0007	0.0037	0.0043	0.0084	0.0089	0.0063
	(0.06)	(0.65)	(0.72)	(0.07)	(0.36)	(0.40)	(0.84)	(0.96)	(0.66)
Firm size	-0.0358	-0.1560	-0.1467	-0.0148	-0.0777	-0.0673	-0.0569	-0.0997	-0.1169
	(0.31)	(1.47)	(1.40)	(0.17)	(0.84)	(0.74)	(0.61)	(1.06)	(1.21)
Intercept	-1.1648	-10.9826	-12.4112	0.8985	-7.4603	-8.5702	-16.5050	-17.3587	-12.1891
	(0.06)	(0.61)	(0.69)	(0.05)	(0.36)	(0.41)	(0.84)	(0.96)	(0.66)
N total	224	205	205	211	194	194	211	193	193
N selected	158	147	147	145	136	136	145	135	135
Log pseudo-likelihood	159.01	156.70	157.64	182.41	175.17	176.33	101.99	102.26	106.25
Wald chi^2	215.83***	150.14***	157.52***	334.43***	329.24***	349.82***	71.20***	80.20***	88.75***
Wald test independent equations	0.77	9.04***	8.62***	2.17	2.35	1.21	11.25***	19.61***	18.78***

Table 6: Correlations between regressors

	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

Table 7: Characteristic comparisons for forced and voluntary turnover observations grouped by mean changes in industry-adjusted OROA

	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***

Table 8: Voluntary vs. forced turnovers – results for the OLS regressions of the sample selection model

The table reports the least squares regression results of the maximum likelihood estimation of the sample selection model. The dependent variables in the least squares regressions are industry-adjusted OROA for the year prior to the turnover year (-1), the third year after the turnover year (+3), as well changes in the mean unadjusted OROA for the period from the year prior, to the third year after the turnover year (-1,+3). The dependent variable in the probit selection regression 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 Inverse Mills Ratio is not reported in the maximum likelihood estimation. The sample excludes outliers (see footnote 11 for details).

Dependent Variables	Industry-adjusted OROA(-1)			Industry-adjusted OROA(+3)			Unadjusted OROA(-1,+3)		
Independent Variables	Pooled	Voluntary	Forced	Pooled	Voluntary	Forced	Pooled	Voluntary	Forced
Forced	-0.0041			0.0010			-0.0044		
	(1.07)			(0.26)			(-0.75)		
Outsider				0.0002	-0.0017	0.0073	0.0101	0.0096	0.0151
				(0.06)	(0.38)	(1.28)	(1.90)*	(1.52)	(1.45)
Outside board	-0.0043	-0.0038	-0.0108	-0.0009	0.0027	-0.0150	0.0053	0.0064	0.0072
	(1.26)	(1.04)	(0.92)	(0.27)	(0.73)	(1.81)*	(0.88)	(1.05)	(0.42)
Board size	-0.0022	-0.0010	-0.0120	0.0013	0.0059	-0.0116	0.0054	0.0052	-0.0008
	(0.50)	(0.23)	(0.85)	(0.32)	(1.37)	(0.98)	(0.87)	(0.78)	(-0.04)
Incumbent tenure	0.0005	0.0009	-0.0106	0.0010	0.0023	-0.0011	-0.0057	-0.0034	-0.0199
	(0.20)	(0.46)	(1.48)	(0.63)	(1.45)	(0.22)	(-2.09)**	(-1.20)	(-2.52)**
Institutional Ownership (%)	0.0105	0.0148	0.0157	0.0093	0.0105	0.0103	0.0226	0.0264	-0.0046
	(1.59)	(2.18)**	(0.71)	(1.56)	(1.58)	(0.78)	(2.36)**	(2.60)**	(-0.20)
Industry-adjusted OROA (-2)	0.7970	0.8251	0.5969						
	(25.49)***	(25.58)***	(6.33)***						
Industry-adjusted OROA (+2)				0.9024	0.9072	0.8814			
				(41.42)***	(38.49)***	(16.15)***			
IOROA (-1,+3)							0.4283	0.4068	0.5895
							(6.43)***	(5.60)***	(4.44)***
Industry-adjusted OROA (-1)							-0.4435	-0.4115	-0.5674
							(-11.77)***	(-10.39)***	(-5.91)***
Entrenchment Index (EI)	-0.0005	0.0005	-0.0065	0.0011	0.0005	0.0039	0.0012	-0.0005	0.0124
	(0.53)	(0.58)	(1.72)*	(1.18)	(0.53)	(1.25)	(0.83)	(-0.36)	(2.43)**
GI – EI	-0.0005	-0.0008	-0.0005	-0.0005	-0.0005	-0.0009	-0.0006	-0.0001	-0.0047
	(0.81)	(1.35)	(0.22)	(0.92)	(0.82)	(0.49)	(-0.63)	(-0.10)	(-1.56)
Firm size	-0.0014	-0.0024	0.0036	-0.0013	-0.0020	0.0027	-0.0060	-0.0070	0.0047
	(1.32)	(2.19)**	(0.99)	(1.45)	(2.10)**	(0.96)	(-3.90)***	(-4.56)***	(0.96)
Intercept	0.0272	0.0301	0.0492	0.0101	-0.0011	0.0095	0.0577	0.0577	0.0219
	(1.54)	(1.90)*	(1.73)*	(0.87)	(0.08)	(0.39)	(3.17)***	(2.76)***	(0.55)
N total	1102	897	205	1087	893	194	1,083	890	193
N selected	886	739	147	871	735	136	867	732	135
Log pseudo-likelihood	1284.00	1167.02	157.64	1305.63	1142.57	176.33	925.032	841.52	106.25
Wald chi^2	1164.42***	1078.26***	157.52***	2457.41***	2207.19***	349.82***	234.35***	183.88***	88.75***
Wald test independent equations	0.93	3.72*	8.62***	0.58	0.90	1.21	35.87***	23.33***	18.78***

Table 9: Robustness checks

The table reports the coefficients on GI and EI from the least squares regressions of the maximum likelihood estimation of the sample selection model. The dependent variable in the least squares regressions is the mean unadjusted OROA for the period from the year prior, to the third year after the turnover year (-1,+3) (except when stated otherwise). The dependent variable in the probit selection regression 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 Inverse Mills Ratio is not reported in the maximum likelihood estimation. The sample excludes outliers (see footnote 11 for details).

Independent Variables	GI	EI	GI	EI	GI	EI
Model & Dependent Variable						
Benchmark	-0.0025	-0.0065	0.0005	0.0039	0.0007	0.0124
OROA(-1 ,+3)	(1.66)*	(1.72)*	(0.56)	(1.25)	(0.34)	(2.43)**
Outliers included	-0.0030	-0.0068	0.0015	0.0052	0.0006	0.0124
OROA(-1,+3)	(2.03)**	(1.84)*	(1.46)	(1.53)	(0.27)	(2.13)**
Alternative definition forced turnovers	-0.0033	-0.0080	0.0005	0.0015	0.0009	0.0099
OROA(-1,+3)	(2.07)**	(1.80)*	(0.44)	(0.52)	(0.36)	(1.93)*
Alternative time-frame	--	--	-0.0003	0.0058	-0.0003	0.0100
OROA(-1,+2)			(0.28)	(1.93)*	(0.13)	(2.25)**
Alternative time-frame	--	--	0.0014	0.0019	0.0031	0.0115
OROA(-1,+4)			(1.41)	(0.56)	(1.71)*	(2.57)***
Alternative time-frame	--	--	0.0003	0.0055	0.0022	0.0146
OROA(-1,+5)			(0.12)	(1.47)	(0.74)	(1.88)*
No financial or regulated firms	-0.0040	-0.0071	0.0005	0.0056	-0.0001	0.0190
OROA(-1,+3)	(1.53)	(1.52)	(0.37)	(1.45)	(0.05)	(2.97)***
Alternative performance measures	-0.0023	-0.0112	0.0003	0.0036	0.0015	0.0105
OROS(-1,+3)	(-1.30)	(2.54)***	(0.19)	(0.48)	(0.64)	(1.56)
Alternative performance measure	-0.0042	-0.0077	-0.0003	0.0034	-0.0012	0.0146
OROCA(-1,+3)	(1.61)	(1.34)	(0.17)	(0.70)	(0.39)	(1.94)*