Older and Wiser, or Too Old to Govern?*

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Abstract

We examine the implications of boardroom aging at large U.S. public corporations. Our analysis indicates both monitoring deficiencies and advising benefits associated with independent directors aged 65 or above. These elderly independent directors are more likely to miss board meetings and less involved with major board committees. Their presence on corporate boards is associated with higher CEO compensation, poorer financial disclosure quality, lower total payouts, worse acquisition decisions, and a lower CEO turnover-performance sensitivity. On average, a greater representation of aging independent directors on corporate boards is related to lower firm performance, but this relation becomes insignificant or sometimes even positive in situations where firms have more advising needs. Finally, we find that investors react negatively to firm appointments of old independent directors and company policy changes that increase the mandatory retirement age of directors.

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1. Introduction

The board of directors is at the center of the policy debate on corporate governance. While the corporate governance reforms and regulations since early 2000s have largely focused on the improvement of board independence, director age has recently drawn attention from various interested constituencies. According to a recent report issued by Spencer Stuart, an executive search consulting firm, the past decade has witnessed a notable trend towards older boards at U.S. public corporations. Specifically, the average age of independent directors of S&P 500 companies rose to 63.1 in 2014, from 61.7 in 2009 and 60.5 in 2004. Another alarming fact is that 45% of S&P 500 companies' boards now have an average age of 64 or older, compared with 16% of boards a decade ago. As the proportion of elderly directors on corporate boards likely continues to rise, it becomes increasingly important to understand the consequences, if any, of boardroom aging. In this study, we investigate whether the age of corporate directors is related to their ability to perform their monitoring and advising functions and how boardroom aging affects boards' effectiveness in firm decision making and shareholder value creation.

The issues related to director age are nuanced and defy simple formulas. On the one hand, elderly independent directors can be valuable assets to firms because of their experience and availability. Specifically, they likely have accumulated a wealth of business experience and professional connections over the course of long careers. As a result, they may be better equipped to understand the opportunities and challenges faced by firms and leverage their knowledge and resources to advise the management team on important strategic decisions. In fact, this consideration was reportedly behind several companies' decision to keep older directors on boards. For example, Community Bancorp in 2011 raised its director retirement age from 70 to 72, saying it feared "the premature loss of active board members who have valuable knowledge and insight about the company's history, operations and local markets."[1] In 2009, a similar desire to retain key board talent persuaded UAL Corporation to boost its mandatory retirement age from 73 to 75 and Goldman Sachs from 72 to 75.[2] In addition, because older directors

[1] http://articles.chicagotribune.com/2012-04-10/business/ct-biz-0411-retirement-age--20120410_1_retirement-age-board-members-middlefield-board

[2] http://www.wsj.com/articles/SB10001424052748703905404576164791847168546

are likely to have retired from their full-time jobs, they may have less time constraint and greater availability to fulfill the obligations of outside directorships. Although not their focus, Falato et al. (2014) find evidence suggesting that older directors appear to be better at handling the greater demand on their time created by a fellow director's death, possibly because they have more time available to take on increased responsibilities.

On the other hand, there are also reasons to suspect that aging directors can hinder board effectiveness and firm performance. As people get older, both their physical strength and mental acumen gradually decline, which carries several potential consequences for directors. For example, older directors may not have the same vigor and concentration as their younger counterparts to stay engaged with the firms on whose boards they sit and to observe, assess, and advise the management team. They may also have difficulties in keeping pace with the latest industrial advancements and technological innovations, which play an increasingly crucial role in determining firms' long-term success. As their knowledge becomes obsolete, older directors could be slow or even reluctant to adapt to changing environments, delaying firms' response to industry shocks and costing them valuable investment opportunities. In addition, older directors have less future labor market opportunities as they approach the end of their careers in the director labor market. As a result, the expected payoff from future directorships may be insufficient to cover the costs they need to incur to build or maintain a reputation as diligent monitors. Therefore, older directors may have greater incentives to either enjoy the quiet life, or seek to maximize current incomes by accepting additional board seats without expending sufficient efforts on their director duties. Both actions can undermine board effectiveness. Finally, the independence of older directors can be compromised if they have had a long tenure on a firm's board. They may become too close to managers, more sympathetic to the challenges and difficulties that managers face, and hence more lenient as monitors.

Shareholders have expressed significant concerns about boardroom aging. For example, in 2010 two prominent active investors, Relational Investors LLC and the California State Teachers' Retirement System, together launched a proxy contest at Occidental Petroleum Corp, partly because Occidental

waived its maximum retirement-age rule for two directors.[3] In early 2015, Coca-Cola Company announced the retirement of two longtime directors, James D. Robinson III, 79 years old, and Peter V. Ueberroth, 77. This move came amid pressures from shareholders as the company failed to meet its revenue growth targets and shareholders believed that in order to attract younger consumers, old directors who lack nimbleness in the fast-growing market should step down to make way for younger directors.[4]

To shed light on the potential costs and benefits associated with aging directors, we analyze a sample of S&P 1500 firms over the period of 1998-2014 and investigate how the presence of old independent directors is related to board effectiveness, corporate policies, and firm performance. To begin, we need to decide how to define old independent directors. As pointed out by Jenter and Lewellen (2015), research in labor economics shows that a disproportional fraction of workers retire at the age of 65. This effect cannot be fully explained by monetary incentives, including Social Security benefits or Medicare, but possibly by behavioral reasons related to customs or social norms. Jenter and Lewellen (2015) use the age of 65 as the normal CEO retirement age. Similarly, we define an independent director as "older independent director" (OID) if he or she is at least 65 years old. Alternatively, we also use age 70 as a cutoff and obtain similar results. To measure the extent of boardroom aging, we construct a variable, *65-or-Older directors (%)*, as the fraction of all independent directors who are OIDs. We do not use alternative measures such as the median and average director age, because they do not fully capture directors' age distribution. We focus on independent directors because they are generally tasked with the management oversight responsibility.

Our first analysis is at the individual director level, where we compare the board meeting attendance records and major board committee responsibilities between older and younger directors. Attending boarding meetings and serving on key committees of the board are important channels through which independent directors obtain up-to-date information about a firm's operational and financial conditions and participate in the firm's governance through counseling and monitoring the management team.

[3] http://www.wsj.com/articles/SB10001424127887323551004578441192135940694
[4] http://www.wsj.com/articles/two-coca-cola-directors-to-retire-amid-board-renovation-1424381549

After controlling for other observable director characteristics as well as firm financial and governance variables, we find that OIDs exhibit poorer board attendance records and they are less likely to serve as a member or chair of important board committees. These results suggest that OIDs either are less able or have weaker incentives to fulfill their duties because of their advanced age, and are inconsistent with the notion that OIDs contribute to better corporate governance, although it remains possible that they do so through less formal channels.

We then proceed to examine a multitude of major corporate policies and managerial decision making to speak more directly to whether the presence of OIDs influences the effectiveness of board monitoring. We find a consistent body of evidence pointing to monitoring deficiencies of OIDs. Specifically, as the percentage of OIDs on corporate boards rises, excess CEO compensation increases. Interestingly, this relationship is not driven by equity-based compensation, but by the cash component of CEO pay. A greater presence of OIDs on corporate boards is also associated with lower financial reporting quality, measured either by performance-adjusted abnormal accruals or by the likelihood of intentional financial misrepresentation. We also find that firms with more OIDs display a greater empire building tendency. These firms make acquisitions generating lower shareholder returns, and adopt less generous payout polices, especially when they have more excess cash on their balance sheets. Finally, we find that OIDs are associated with a significantly lower CEO turnover-performance sensitivity, suggesting that OIDs are more lenient or less responsive in disciplining poorly performing managers.

We next assess the impact of OIDs on firm performance. We find that firm performance, measured either by the industry-adjusted return on assets (ROA) or Tobin's Q, is significantly lower when firms have a greater fraction of OIDs on their boards. These results, combined with the earlier findings based on specific corporate decisions, support the conjecture that OIDs suffer from monitoring deficiencies that impair the effectiveness of board oversight of management. Further analysis, however, uncovers interesting heterogeneities in the relation between OIDs and firm performance. Specifically, we find that in contrast to the average negative relation in the full sample, for firms in highly volatile industries or industries affected by import tariff cuts, the relation between OIDs and firm performance is no longer negative and in some specifications, becomes even positive. These patterns are consistent with OIDs

using their experience and resources to help firm better cope with volatile industry conditions and more competitive product markets.

A potential issue that could cloud our inference is the endogeneity problem. Specifically, the presence of OIDs on corporate boards may be determined by the potential supply of and demand for OIDs, which themselves can have direct impacts on the corporate decision outcomes and firm performance. For example, it is possible that firms appointing or retaining more old independent directors have poor corporate governance to begin with or are run by CEOs intent on consuming private benefits and avoiding rigorous board oversight. These firm and managerial attributes could be responsible for the corporate policies and outcomes we observe. We use a number of approaches to address the endogeneity issue. First, we include firm-fixed effects in all firm-level regressions to control for time-invariant firm-specific unobservable factors that may correlate with both the presence of OIDs and our corporate outcome variables. Second, we employ an instrumental variable regression approach where we instrument for the presence of OIDs on a firm's board with a measure capturing the potential supply of old directors in the firm's headquarters state. Knyazeva, Knyazeva, and Masulis (2013) show that the supply of directors in the local labor market has a significant impact on a firm's ability to hire qualified independent directors. Similar to their approach, we compute the number of senior executives and directors aged 65 or above employed by large public firms headquartered in the same state as the company in question, and use it as an instrument for the OID representation on the board. We find that all our firm-level results continue to hold under the two-stage least squares regression framework.

Finally, we conduct two event studies, one on OID appointment announcements and the other on the announcements of company policy changes that increase the mandatory retirement age of outside directors. We find that shareholders react negatively to both types of announcements. Specifically, for OID appointments, the average and median 3-day announcement-period cumulative abnormal returns (CAR) are -0.197% and -0.217%, both significantly different from zero. For retirement policy changes, the mean and median 3-day CAR are -0.62% and -0.685%. Again, both statistics are significantly different from zero.

To our best knowledge, our research represents the first comprehensive study of the costs and

benefits of older directors to firms and their overall impact on firm value and performance. We identify age as an important director characteristic that significantly influences independent directors' ability to fulfill their monitoring and advising role. Many prior studies of corporate boards include director age primarily as a control variable in their analyses, and they usually use the mean age of (independent) directors when doing so. Also, extant evidence on the effect of director age on corporate outcomes is very fragmented and mixed in nature. Faleye (2007) finds that the director age has a negative relation with Tobin's Q, while Fracassi and Tate (2012) find that such relation only exists for firms with poor governance. Cai and Sevilir (2012) find that director age is positively related to acquirer announcement returns. Both Fracassi and Tate (2012) and Khorana et al. (2007) find no effect of director age on merger frequency, while Ahn and Walker (2007) find an inverse relation between director age and the frequency of corporate restructuring by spinoffs.

We differ from prior studies by constructing a measure that more effectively captures the presence of older independent directors on corporate boards, and by examining a broader set of corporate policy and outcome variables. This dual approach allows us to portray a complete picture of the consequences of the growing phenomenon of boardroom aging at large U.S. corporations. As the debate over director age limits continues unabated among news media, activist shareholders and regulators, our findings on the costs and benefits associated with OIDs and their impact on board effectiveness and firm performance, provide timely and important policy implications.

The rest of the paper is organized as follows. Section 2 describes the procedures for sample construction and reports sample summary statistics. Sections 3 examines the differences in board meeting attendance records and key committee involvement between older and younger independent directors. Section 4 examines the effects of old independent directors on various corporate policies and firm performance. Section 5 studies the stock price reactions to announcements of old independent director appointments and director retirement policy changes. Section 6 concludes.

2. Sample Construction

We start with the universe of firms in the Institutional Shareholder Services (ISS, formerly

RiskMetrics) database, which covers firms in the S&P 1500 index. Our 1998-2014 sample period is constrained by the fact that prior to 1998 some important director information such as director shareholdings and the number of major company board seats is largely missing. We merge the ISS sample with the COMPUSTAT and CRSP databases to obtain financial and stock returns data. We remove dual class firms where board monitoring is unlikely to matter given the presence of a controlling shareholder. We also remove observations with incomplete data on key financial or governance variables.

While analyzing the ISS database, we discovered pervasive errors in our key variable, director age, after 2005. What alerted us to these errors is that based on the ISS information, from 2005 to 2006 the median director age rose by three years, but from 2006 to 2007 it did not increase at all. We then found cases in which a director's age was, for example, 63 in 2005, but 66 in 2006 and 66 in 2007. This occurs in more than half of the observations in 2006 and 2007. We further noticed that for directors who entered the database in 2006 or later, the age in the ISS database is often different from that in the firm's proxy statement, with the difference typically ranging between one and three years. We speculate that these errors were caused by changes in ISS's data collection methodology in 2006. We manually checked the director age for a random sample of firms prior to 2006 and did not discover any errors. Because we were not aware of any systematic approach to fixing the errors during the 2006-2014 period, we went back to firms' proxy statements to verify and correct all directors' age information in the ISS database. For directors who entered the ISS database prior to 2006, we used their pre-2006 age information to determine their correct age in later years. All of our analysis is based on corrected director age information.

Table 1 displays the sample frequency distribution by year. The median independent director age increases monotonically during our sample period. The average percentage of independent directors who are 65 or older shows an upward trend, especially since 2003. The percentage of firms whose boards are dominated by old independent directors has also increased notably. By 2014, the median firm has 50% of independent directors who are 65 or older.

We compare the attributes of independent directors at the cutoff of age 65. Table 2 reports the

univariate analysis of independent director attributes. Directors who are 65 or older are more likely to be retired. They are older at their initial appointments. They have longer tenure than directors below age 65 and are less likely to be co-opted, i.e., appointed after the current CEO assumed office. Directors 65 and older have higher share ownership, but are less likely to be blockholders. Older independent directors hold more board seats. Older independent directors are more likely to be a former employee of the firm, but less likely to be a sitting CEO or senior executive of another firm.

Table 3 presents summary statistics of key financial, governance and outcome variables. All continuous variables are winsorized at their 1st and 99th percentiles to reduce the influence of outliers. Alongside director age, a closely related issue that has also provoked debate is director tenure. Long-serving, entrenched board members may have lost an outside perspective and are less likely to offer fresh insights, although a recent study by Dou et al. (2015) find evidence supporting improved governance by independent directors with extended tenure. One explanation for their result is that these directors on average were appointed prior to the appointment of the current CEO, meaning that they are less likely to be co-opted. Director age and tenure are likely to be correlated. To account for director tenure and isolate the effects of director age, we control for either an independent director's tenure or the percentage of independent directors who have at least 15 years of tenure at a firm,[5] depending on whether the analysis is at the director level or the firm level.

3. Analysis of Board Meeting Attendance and Board Committee Service

In this section, we conduct director-level tests to assess whether old independent directors actively participate in the governance of firms and contribute to more effective boards. Specifically, we compare the board meeting attendance records of older and younger independent directors as well as their frequency of serving on time-consuming committees and taking on committee chair positions.

3.1. Board Meeting Attendance

Board behavior is largely unobservable, but publicly listed firms in the U.S. are required to

[5] Results are robust to using a 10-year cutoff.

disclose a director's board meeting attendance record in their annual proxy filings. The level of disclosure is limited to whether a director attended less than 75% of board meetings during a fiscal year. We obtain the board meeting attendance information from the ISS database for all independent directors. Given its adverse reputational consequences, only 1.4% of independent directors in our sample exhibit this attendance problem.

We estimate a probit regression where the dependent variable, *Attend_less75_pct*, is equal to one if an independent director attended less than 75% of a firm's board meetings in a given year, and zero otherwise. The key explanatory variable is an indicator variable equal to one if a director is 65 or older. We control for a large array of director attributes and firm financial and governance characteristics as well as Fama-Frehcn 48-industry and year fixed effects. Standard errors are heteroscedasticity consistent and adjusted for director level clustering. Table 4 presents the regression results. Model (1) is based on the full sample, while Model (3) is based on the subsample of firms for which information on two additional controls, the number of board meetings each year and the fees paid to directors for attending a board meeting, is available. The coefficient on the 65-or-Older indicator is positive and significant in both regressions. For Model (1), the average marginal effect of 65-or-Older is 0.003. It suggests that the probability of an independent director aged 65 or older missing more than 25% of board meetings is 0.3 percentage points higher than that of an independent director aged below 65. This effect is economically meaningful given that the unconditional probability of a director missing more than 25% of board meetings is only 1.4% in our sample.

In columns (2) and (4), we augment the regression model by controlling for director fixed effects and estimate the regressions in a conditional logit framework. This approach focuses on within-director variations and can sharpen the identification of our analysis. For instance, under these model specifications, the coefficient on the 65-or-Older indicator can be interpreted as capturing the change, if any, in a director's board meeting attendance behavior when he/she crosses the age-65 threshold. However, in the current analysis, implementing this approach comes at the cost of severely reducing the number of observations (by about 90%) that can be used in the regressions. The reason is that due to the binary and relatively coarse nature of firms' disclosure on directors' board meeting attendance

records, only 1.4% of director-firm-year observations are considered as having poor attendance based on missing more than 25% of board meetings. Therefore, within-director variation in board meeting attendance records is even more limited. An overwhelming majority of the independent directors in our sample have never missed more than 25% of board meetings at any firm in any year, so they are automatically excluded from the conditional logit regressions, thereby severely limiting the power of our tests. With this caveat in mind, results in column (2) and (4) show that the coefficient on the 65-or-Older indicator is still positive, but no longer statically significant.

For the director attribute variables, we observe that independent directors who are current CEOs of other firms, have more board seats, or have shorter tenure are significantly more likely to miss board meetings. For the firm-level control variables, we find that directors are more likely to miss board meetings in firms that are smaller, have larger boards, and pay directors lower board meeting attendance fees.

Given the importance of board meetings as a mechanism for outside directors to participate in a firm's governance, our results are indicative of old directors' deficiencies in fulfilling their duties. Absence from board meetings is one important channel through which old independent directors could undermine board effectiveness.

3.2. Board Committee Services

Another measure of a director's contribution of time and energy is his/her involvement with board committees. Therefore, we investigate whether there are any differences between older and younger independent directors with respect to their membership and chairmanship on major committees overseeing matters related to audit, compensation, nominating and governance. Toward that end, we construct two measures at the director-firm-year level. One is a count variable equal to the number of these committees a director serves on at a firm in a year, and the other is a binary variable equal to one if a director chairs at least one of these committees at a firm in a year.

We regress these two variables against a number of director and firm characteristics, with the 65-or-Older indicator as the key explanatory variable. The regression results are reported in Table 5. We

control for industry and year fixed effects in columns (1), (3), (5), and (7), and add director fixed effects in columns (2), (4), (6), and (8) for cleaner identification. Consistent with prior studies (e.g., Masulis and Mobbs (2014)), the coefficient estimates in columns (1) and (3) suggest that independent directors aged 65 or older sit on more committees and are more likely to be a committee chair. When we focus only on the audit and compensation committees, which are generally considered more time consuming, we find that older directors are more likely to serve on both and chair at least one of them (see columns (5) and (7)).

However, a different picture emerges with the control for director fixed effects. We find that the coefficient on the 65-or-Older indicator is insignificant in column (2) and significantly negative in columns (4), (6), and (8). These results suggest that once directors turns 65, they become less likely to serve on both the audit and compensation committees. They are also less likely to be chairing any committee, especially the more time intensive audit and compensation committees. In terms of economic significance, the average marginal effect of *65-or-Older* in column (8) is -0.048, representing a 20% decrease in the probability of being chair of either the audit or compensation committee, which has an unconditional mean of 0.240 in our sample.

Taken together, the results in Table 5 are most consistent with the following interpretation. Across directors, older independent directors are more likely than younger ones to staff key board committees and to serve as committee chairs, presumably because they are considered more experienced. However, for the same directors, they are less likely to hold committee chair positions or serve on the audit and compensation committees after they are 65 or older. The distinction underlies the importance of controlling for director fixed effects. Given the potentially greater demand upon directors' time and energy from acting as a committee chair and from serving on either the audit or compensation committees, our results suggest that older independent directors tend to avoid these very time-intensive board committee roles, even though they may be generally more experienced directors.

4. Older Independent Directors and Corporate Policies

In this section, we build on the board meeting attendance and committee service analysis by

examining specific corporate decisions in several key areas. Our goal is to shed more light on the potential impact of older independent directors on board effectiveness.

4.1. Analysis of CEO Compensation

We examine whether the presence of old independent directors is related to the level and composition of CEO compensation. Setting CEO pay is one of the most important board decisions. To the extent that ineffective monitoring by old independent directors allows for more self-serving behavior by managers, we expect firms with more old independent directors to pay CEOs more, but have CEO pay less sensitive to shareholder wealth. Core et al. (1999) find a positive effect of the percentage of outside directors 70 or older on CEO total pay and cash pay, but finds no effect on the composition of CEO compensation. Dou et al. (2015) has the average age of independent directors as a control variable in their analysis and find that it is not significantly related to CEO total compensation.

We obtain CEO compensation data from Execucomp. We remove firm-year observations in which CEOs have been in office for less than one year, since the compensation received by these CEOs is for a partial fiscal year. Given that compensation committee members bear more responsibility for setting CEO pay, we further measure old independent directors' presence on the board's compensation committee by *65-or-Older directors (%) - on compensation committee*. It is computed as the number of independent directors 65 or older who are on the compensation committee divided by the total number of compensation committee members.

The regression results are reported in Table 6, where the dependent variable is the level of CEO total compensation (columns 1-3), the percentage of cash in CEO total pay, i.e., cash intensity (columns 4-6), and the percentage of equity in CEO total pay, i.e., equity intensity (columns 7-9). Column 1 shows that firms with more old independent directors on their boards pay CEO more, after controlling for other recognized determinants of CEO pay. Turning to CEO pay structure, we find that CEOs at these firms receive a higher percentage of cash compensation and a lower percentage of equity compensation (see columns 4 and 7). Our inferences remain the same when we focus on compensation committees in columns 2, 5, and 8. Our results are also robust to adding firm fixed effect controls to the regressions

(columns 3, 6, 9). This last evidence is important because it rules out time-invariance firm characteristics as omitted variables driving the relation between older independence directors and CEO compensation policies.[6]

The evidence in this section suggests that old independent directors on the compensation committee yield overcompensated CEOs. They also weaken CEO incentives through a larger weight on cash pay and a smaller weight on equity pay. These results reinforce the notion of poor monitoring by old independent directors.

4.2. Analysis of Earnings Management and Financial Restatements

Another major responsibility of independent directors is to oversee firms' financial disclosure and ensure the integrity of firms' financial reporting process. In this section, we examine whether the presence of old independent directors relates to a firm's propensity to manipulate earnings. Anderson et al. (2004) examine how board characteristics affect accounting report integrity and thus, the cost of debt, and find no evidence that average age of all directors is related to the cost of debt. But Anderson et al. (2004) do not directly test whether director age is associated with earnings management. Dou et al. (2015) use the average age of independent directors as a control variable and find no significant relation to restatements.

To the extent that older independent directors are associated with monitoring deficiencies, we expect their presence leads to less reliable firm financial reporting. Given the importance of the audit committee in overseeing a firm's financial reports, we measure old independent directors' representation on the audit committee by *65-or-Older directors (%) - on audit committee*. It is defined as the number of independent directors 65 or older on the audit committee divided by the total number of committee members.

Our first measure of financial reporting quality is the performance-adjusted discretionary accruals

[6] We also use the Black-Scholes delta of CEO compensation as an alternative pay-performance sensitivity measure. Following Core and Guay (2002), delta is defined as the change in the value of the CEO's total portfolio of stocks and options for a 1% change in stock price. We find that the percentage of older independent directors on a firm's board and compensation committee is associated with lower delta.

developed by Kothari et al. (2005). A firm's discretionary accruals are defined as the difference between its total accruals and the fitted normal accruals derived from a modified Jones model (Jones, 1991). We also infer earnings manipulation from observing "extreme" outcomes in which the manipulation requires future restatement. Our restatement sample is obtained from the Audit Analytics (AA) restatements database. The AA database covers all SEC registrants who have disclosed a financial statement restatement in electronic filings. AA defines a restatement as a revision of a previously filed financial statement that is a result of an error, fraud or GAAP principle misapplication. The database excludes revisions due to changes in accounting principles such as adoption of SFAS 123R and changes in presentation as a result of mergers/acquisitions. From the database, we identify the beginning date and end date of a misreported period. If multiple filings correct the same underlying misstatement, they are considered as a single restatement observation.

Restatements can be classified into irregularities (intentional misreporting) and accounting errors (unintentional misstatements). We follow Hennes et al. (2008) in identifying irregularities. Hennes et al. (2008) classify a restatement as an irregularity if it satisfies one of three criteria: (i) variants of the words ''irregularity'' or ''fraud'' were explicitly used in restatement announcements or relevant filings in the four years around the restatement; (ii) the misstatements led to a SEC or DOJ investigation; and (iii) independent investigations were launched by boards of directors of the restating firms.

We regress the two measures of financial reporting quality against the presence of older independent directors and present the results in Table 7. We find that firms with a higher percentage of older independent directors on their boards or audit committees are associated with significantly higher levels of discretionary accruals and a higher likelihood of both financial restatements and restatements caused by accounting irregularities. These results continue to hold when firm fixed effects are included in the regressions. The average marginal effect of *65-or-Older directors (%) - on audit committee* in Model (8) is 0.021, suggesting that a one standard-deviation increase in older independent director representation on the audit committee is associated with a 0.625 percentage point rise in the probability of intentional misreporting. This figure is economically meaningful given that our sample's unconditional probability of intentional misreporting is only 4%.

Overall, our findings in this section suggest that the integrity of a firm's financial reporting is undermined as representation of older independent directors on the firm's board and audit committee rises. They serve as further evidence that older independent directors are associated with lax monitoring, which allows managers to engage in more aggressive earnings manipulations.

4.3. Analysis of Corporate Payouts

In this section, we examine a firm's payout policy. When firms have exhausted their investment opportunities, they should return the excess cash to shareholders in the forms of dividends and stock repurchases. However, the distribution of free cash flows to shareholders reduces the resources under a CEO's control. Self-interested CEOs prefer to retain control over this excess cash, which provides them with ready ammunition to pursue pet projects or empire building acquisitions (Jensen (1993) and Harford (1999)). We hypothesize that firms with more old independent directors are less likely to pay out free cash flows to shrink the empire, which many CEOs are likely to oppose.

To test this prediction, we estimate regressions of firms' repurchases, dividends, and total payouts, all scaled by earnings before interest and tax (EBIT). Table 8 reports coefficient estimates. We find that the coefficient on *65-or-Older directors (%)* is negative and statistically significant for dividends, repurchases, and the total payouts (columns 1, 4, and 7), suggesting that firms with a greater presence of older independent directors are associated with lower payouts to shareholders. The associations with older independent directors holds even with the inclusion of firm fixed effects (columns 2, 5, and 8).

We further examine whether older independent directors are linked to lower payouts at firms that have accumulated excess cash. We use Harford's (1999) measure of excess cash, which is defined as the deviation of the firm's ratio of cash and short-term investments to total assets from its predicted value from a cash management model. We include excess cash and its interaction with older director representation as additional explanatory variables in the payout regressions. Columns 3, 6, and 9 of Table 8 show that excess cash has a significantly positive coefficient, except in the dividend model, while the interaction term has a significantly negative coefficient. These results suggest that on average firms with more excess cash tend to pay out more to shareholders, primarily through stock repurchases,

but a greater presence of older independent directors is associated with a lower sensitivity of payouts to excess cash. It appears that older independent directors are associated with larger payout reductions, especially at firms with more excess cash.[7] This evidence suggests that older independent directors are less effective at removing excess liquidity from the hands of managers and reining in empire building activities, a prime example of which is acquisitions, the subject of our investigation in the next section.

4.4. Analysis of Corporate Acquisition Decisions

We assess whether the presence of older independent directors is related to firm acquisition performance. Acquisitions can boost shareholder returns by combining two firms with valuable synergies. However, as many studies find, a nontrivial proportion of acquisitions are value-destroying and appear to be manifestations of agency problems, such as managerial empire building and CEO overconfidence (e.g., Masulis et al., 2007; Malmendier and Tate, 2008). We hypothesize that the monitoring deficiency of older independent directors contributes to more shareholder value reducing acquisitions.

Data on mergers and acquisitions are from the Securities Data Corporation's (SDC) Mergers and Acquisitions Database. We obtain 3,367 acquisitions made by our sample firms during our sample period. For each acquisition, we require that (i) the deal is completed, (ii) the disclosed deal value is more than $1 million and represents at least 1% of the acquirer's equity market capitalization, as measured on the 11th trading day prior to the announcement date, (iii) the acquirer controls less than 50% of target shares prior to transaction and owns 100% of target shares afterwards, and (iv) the acquirer has financial data available from COMPUSTAT, governance data available from ISS for the year prior to the acquisition announcement, and stock return data available from CRSP for the period from the 210th trading day prior to deal announcement to the 2nd trading day after the deal announcement. We measure a firm's acquisition performance by its stock's cumulative abnormal return (CAR) over the 5-day window (-2, 2), where day 0 is the announcement date from the SDC. We estimate

[7] We find qualitatively similar results when interacting 65-or-Older directors (%) with free cash flows. Free cash flows is measured as operating cash flows minus dividends and capital expenditures.

the coefficients of a standard one-factor market model using daily stock returns over the period (-210, -11) and the CRSP value-weighted return as the market return.

We estimate acquirer CAR regressions against the presence of older independent directors, while controlling for firm financial and governance variables and deal characteristics that prior literature finds to be empirically important. The regression results are presented in Table 9. We find that the coefficient on *65-or-Older directors (%)* is negative and statistically significant, irrespective of the set of control variables included in the model. In economic terms, a one-standard-deviation increase in *65-or-Older directors (%)* lowers acquirer returns by 0.4%, which is quite substantial considering the miniscule mean and median acquirer CAR values. In contrast to Dou et al. (2015), who use the average age of independent directors as a control variable and find no significant relation to acquirer returns, our results indicate that a greater representation of older independent directors at the acquirer is associated with acquisitions generating lower returns to acquiring shareholders. This evidence casts more doubts on the ability and incentives of older independent directors to perform their monitoring role.

4.5. Analysis of CEO Turnover Decisions

CEO retention is another major board decision that reflects monitoring effectiveness. A board's ability and readiness to stay informed of managerial decision making and replace managers if necessary provides powerful incentives ex ante for CEOs to act in the best interests of shareholders. We examine whether the presence of older independent directors affects boards' responsiveness in disciplining poorly performing managers.

We obtain data on CEO turnovers during the period of 1998 to 2007 from Jenter and Kanaan (2015). Merging these data with our sample yields a total of 309 forced CEO turnovers, which translate into a 2.4% unconditional probability of forced CEO turnover in a given firm-year. We estimate a probit model where the dependent variable is equal to one if a firm experiences a forced CEO turnover in a given year and zero otherwise. There are two key explanatory variables. One is firm performance, and the other is an interaction term between firm performance and *65-or-Older directors (%)*. We use a firm's industry-adjusted return on assets (ROA) over the previous fiscal year as our primary performance

measure. As an alternative, we also use a firm's market-adjusted stock returns over the previous fiscal year and obtain similar results.[8] We control for a number of other corporate governance variables as well as the terms of their interaction with firm performance. In addition, we control for firm fixed effects in some model specifications to zero in on within-firm time series variation. This approach, however, removes observations associated with firms with no forced CEO departures during our entire sample period, substantially reducing the sample size.

Table 10 presents the regression results. The coefficient on the standalone firm performance measure is always negative, and is significant in two out of the four model specifications. More importantly, the coefficient on the interaction between firm performance and *65-or-Older directors (%)* is always positive and statistically significant. These results indicate that the CEO turnover-performance sensitivity is weaker for firms with a higher percentage of older independent directors on boards. To assess the economic impact of the relation, we calculate the implied probabilities of forced CEO departure derived from our regression coefficient estimates. Specifically, we calculate the change in the implied probability of CEO forced turnover when firm performance changes from the 25th percentile to the 75th percentile (the interquartile range). Using model (1) as an example, when all the independent directors on a firm's board are aged below 65, i.e., *65-or-Older directors (%)* is equal to zero, the change in the implied probability of forced CEO turnover is 0.015. When all the independent directors are aged 65 or above, i.e., *65-or-Older directors (%)* is equal to one, the change in the implied probability of CEO forced turnover is 0.007, only about half as large as in the previous case. Overall, the evidence from this section is consistent with the notion that older independent directors fail to actively discipline underperforming CEOs and thus, they facilitate managerial entrenchment and encourage the extraction of greater private benefits.

4.6. Analysis of Firm Performance

4.6.1. The Average Relation

[8] Stock returns incorporate investors' belief about the probability of future CEO turnovers and thus may introduce a look-ahead bias (Weisbach (1988)).

The collective results up to this point portray a consistent picture that older independent directors provide inadequate management oversight that contributes to poorer managerial incentive and more agency problems. In this section, we examine how the presence of old independent directors is related to overall firm performance. Our prediction, based on the evidence observed from specific corporate policies, is that on average firm performance is negatively related to the proportion of older independent directors on boards. We test this prediction by estimating regressions of firm performance, which we measure by a firm's industry-adjusted ROA and Tobin's Q.

Panel A of Table 11 presents the regression results. The associations between *65-or-Older directors (%)* and the two performance measures are negative and statistically significant, even when we control for firm fixed effects in some specifications. To interpret the coefficients in economic terms, we take mode (1) and (3) as an example. All else equal, a one-standard-deviation increase in *65-or-Older directors (%)* leads to a 0.005 decline in the industry-adjusted ROA and a 0.051 decline in Tobin's Q. With respect to other governance variables, we find that firms with a larger number of total directors are associated with firm underperformance. Busy independent directors also appear to contribute negatively to firm performance. Finally, we find an inverse U-shaped relation between director ownership level and firm performance.

4.6.2. Cross-Sectional Variation

Next we go beyond the negative average effect documented above and explore potential heterogeneities in the relation between firm performance and the presence of older independent directors on corporate boards. In particular, we investigate the possibility that firms may benefit from the presence of older independent directors in certain situations. To the extent that older directors are more experienced and can provide more seasoned opinions and advice to management, they may be able to make positive contributions to firms that are in greater needs for board advising. We identify firms in two scenarios that fit this profile; specifically, firms in industries affected by significant import tariff reductions and firms operating in highly volatile industries.

Industries affected by import tariff cuts

We exploit import tariff cuts as a quasi-natural experiment that substantially heightens the product market competition for our sample firms. Import tariff cuts lower the cost of foreign rivals entering U.S. product markets, and as a result, increase the competitive pressure on U.S. firms. The experience and advice from older independent directors may be especially valuable to firms as they adapt to a different and more challenging industry landscape.

We use the U.S. import tariff data compiled by Feenstra (1996), Feenstra, Romalis, and Schott (2002), and Schott (2010).[9] The tariff data are only available for manufacturing industries from 1998 to 2005 in our sample period. For each three-digit SIC code industry and each year, we compute the tariff rate as the duties collected by U.S. Customs divided by the custom value of imports. Similar to prior studies, e.g., Fresard (2010) and Valta (2012), we define a tariff cut in terms of the deviations of the yearly changes in industry tariffs from their median level. Specifically, a tariff cut occurs in an industry-year when the industry experiences a negative tariff change and the change is two times larger than the industry's median change. We exclude tariff cuts that are followed by equivalently large increases in tariffs over the subsequent two years. We construct an indicator *Tariff Cut*, which is equal to one if a firm's industry experiences a tariff cut in a particular year and zero otherwise. We repeat the firm performance regressions with the inclusion of *Tariff Cut* and its interaction term with *Older-than-64 directors (%)*. The results are presented in Panel B of Table 11.

The coefficient on *Tariff Cut* is negative and statistically significant for both *Industry-adj ROA* and *Tobin's Q*, indicating that increased product market competition deteriorates firm performance. More importantly, the interaction term between *Older-than-64 directors (%)* and *Tariff Cut* is positive and statistically significant for both firm performance measures, suggesting that the presence of old independent directors is beneficial when firms face higher product market competition. The result is consistent with the notion that the experiences of old independent directors enable them to cope with unexpected changes in the firms' competition environment. The results are qualitative similar if we define a tariff cut in alternative ways, such as using three times the median change as the cutoff, using

[9] The tariff data are available at http://faculty.som.yale.edu/peterschott/sub_international.htm.

two (or three) times the median reduction as the cutoff and using four-digit SIC code industries.

Highly volatile industries

Firms in highly volatile industries have to contend with unpredictable operating environments, and decision making is made more difficult by uncertain growth prospects and rapidly changing industry landscapes. Therefore, management at these firms may welcome inputs and advice from the boards. With their extensive experience, old independent directors could be valuable to firms in this situation.

For each industry, we compute the industry-level volatility as the average standard deviation of annual stock returns for all firms in the industry. Then we sort all industries by their volatility. We construct an indicator *High Volatility Industry*, which is equal to one if a firm's industry volatility is above the 75th percentile of all industries and zero otherwise. We repeat the firm performance regressions with the inclusion of *High Volatility Industry* and its interaction term with *Older-than-64 directors (%)*. The results are presented in Panel C of Table 11. Note that in regressions with firm fixed effects, the indicator *High Volatility Industry* is absorbed as it is constant for an industry. The interaction term between *Older-than-64 directors (%)* and *High Volatility Industry* is positive and statistically significant, suggesting that old independent directors contribute positively to performance for firms in highly volatile industries.

In sum, our analysis in this section uncover interesting cross-sectional variations in the relation between older independent directors and firm performance. While the presence of older independent directors on corporate boards has negative implications for the average firm because of their monitoring deficiencies, it is important to recognize that they also bring valuable advising benefits to firms where managers need more inputs from boards.

4.7. Identification

The endogenous nature of board composition and structure is a major challenge for studies like ours. We rely on two approaches to deal with the endogeneity problem. First, we control for firm fixed effects

wherever applicable throughout the paper. This approach mitigates the endogeneity concern by ruling out time-invariant firm-specific factors as omitted variables that may drive our results. However, firm fixed effects regressions are unable to account for the influence of time-varying omitted variables.

As our second approach, we resort to the two stage least squares (2SLS) regression framework. For each firm, we construct a measure of the local supply of old directors as the instrument variable (IV). In the spirit of Knyazeva et al. (2013), the local old director pool captures the supply of potential old independent directors. Our measure of the local supply of old directors is the natural logarithm of the sum of all old executives or directors at other firms headquartered in the same state. The number of old executives at a firm is the sum of all executives from Execucomp and all directors taken from the ISS database with identifiable age of 65 or older. We apply the logarithmic transformation to reduce the right skewness in the original value. This measure implicitly assumes that prospective directors are more likely to be locally, because of the high board participation costs faced by executives holding top positions at other firms (Knyazeva et. al. (2013)). Headquarters locations are generally chosen in the early part of a firm's life, many years prior to making the board composition decisions and are infrequently changed (Pirinsky and Wang, 2006)). Thus, we treat the firm headquarters location as predetermined and use the supply of old directors in the firm's vicinity as an exogenous source of variation. We use firm headquarter locations reported in Compustat and remove any firms headquartered outside the United States. Since executives of direct competitors are unlikely to be asked to join the board due to antitrust and competitive concerns, we exclude firms in the same 4-digit SIC industry in calculating the size of the local pool of older directors.

We argue that the local older director pool should only affect firm outcomes through the channel of its effect on old independent director representation at the firm in question. In other words, local older director pool affects a firm's board composition, but does not directly influence other firm outcomes. In the first stage estimation, we predict the level of old independent director representation using the size of the local pool of older directors as well as second-stage control variables. We present in Appendix Table A2 the first-stage coefficient estimates of 2SLS regressions. The dependent variable in the first stage is the representation of older independent directors on a firm's board. The first-stage

Cragg-Donald Wald F-statistic is above 40, rejecting the null hypothesis of weak instruments. The coefficient on the local old director pool is positive and statistically significant at the 1% level, attesting to the instruments' strength and relevance.

We estimate the 2SLS regressions for all the firm outcome variables examined in previous sections. Table 12 presents excerpts of the second-stage coefficient estimates of the 2SLS regressions. All our previous results continue to hold. Specifically, the coefficient on *65-or-Older directors (%)* remains significantly positive in regressions of discretionary accruals, earnings restatements, CEO total compensation, cash intensity, and significantly negative in regressions of equity intensity, corporate payouts, and firm performance. In the CEO turnover regression, the coefficient on the interaction term between *65-or-Older directors (%)* and firm performance remains significantly positive.[10] Therefore, our results are robust to correction for endogeneity.

5. Announcement Effects of Old Independent Director Appointments and Director Retirement Policy Changes

There are two main contributing factors to the trend of aging directors. In some cases, firms have increased the mandatory retirement age for directors. Director age limits remain relatively infrequent but they are set higher than in the past. According to a 2014 study by Equilar, of the S&P 500 boards that specify a retirement age, 30% set the maximum age at 75 or older, a six-fold increase from 2004 when only 5% of boards had a retirement age of 75 or older.[11] In others cases, firms have increasingly recruited retired executives to build up their boards' industry expertise and to ensure that new directors have the necessary time available to meet the rising demands of board services. In fact, according to the same 2014 Equilar study, more than half of new independent directors added to S&P 500 boards in 2014 were retired – which is the first time this has ever occurred. To evaluate old independent directors' contribution to firm value, we conduct two separate event studies on the two contributing factors of

[10] For the 2SLS regression of CEO turnovers, we follow the methodology of Knyazeva et al. (2013). Specifically, we instrument *65-or-Older directors (%)* by the local old director pool and the industry median *65-or-Older directors (%)*, and instrument the interaction term, *65-or-Older directors (%)*Performance*, by the industry median *Performance* and the product of the industry median *Performance* and *65-or-Older directors (%)*.

[11] Please see the 2014 Board Composition & Recruiting Trends Report.

boardroom aging. Specifically, we gauge the stock price reactions to the announcements of (1) firms changing their director retirement policy and (2) firms appointing older independent directors.

5.1. Announcements of Director Retirement Policy Changes

To construct the sample for this analysis, we gather information on director retirement policy changes from the Capital IQ Key Development database. Specifically, we conduct a keyword search on "Age", "Director" and "Retire". The search returns 208 raw results. We read each of the news articles and remove irrelevant news, duplicate news, news where we cannot identify the direction of change in retirement age and news for companies that do not have stock return data available from CRSP. We confirm the changes in bylaws by checking EDGAR files. We identify 91 retirement policy changes that potentially increase the older director representation. After removing contaminated announcements, the "clean" sample contains 59 retirement policy change announcements.

We measure the announcement-period cumulative abnormal returns (CAR) over a 3-day event window (-1, 1) with event date 0 being the announcement date. Abnormal returns are computed based on the coefficients of a standard one-factor market model estimated using daily stock returns over the 200-day window (-210, -11) and the CRSP value-weighted return as the market return. The results are reported in Panel A of Table 13. The mean CAR is -0.62% and the median is -0.685%, both statistically significant. It appears that shareholders react as if they believe that increasing director age is a value-destroying decision.

During our keyword and news search, we also identify 5 events that decrease the mandatory retirement age, 2 events that impose a mandatory retirement age, and 1 event that eliminates the board's discretion to waive the mandatory retirement age. Even though the number of events is too small for formal statistical testing, it is worth noting that the stock market reacts positively to these 8 director-age-decreasing events, with a mean CAR of 0.976%.

5.2. Announcements of Old Independent Director Appointments

To construct the appointment announcement sample, we gather information on independent

directors who were 65 or older when they joined the board from the ISS database. We search the Factiva database around that time for the first public disclosure date of these appointments. We search in the Capital IQ Key Development database when we cannot find appointment news in Factiva. Usually the appointment date is several months prior to the annual shareholder meeting date, where the new director's name first appears. This procedure is used because temporary or additional director appointments have to be subsequently confirmed by shareholders at the next shareholder meeting. The sample construction is described in Appendix Table A3. There are 1,127 appointments in the full sample. If directors are elected at annual shareholder meetings, director information is disclosed in proxy statement which can contain a myriad of other information. We identify director appointments that coincide with annual shareholder meetings and confirm them by reading DEF 14A files where necessary. After we remove such contaminated announcements, the non-proxy sample includes 973 appointments. We then remove appointments contaminated by confounding events such as multiple appointments of directors, earnings announcements and dividend declaration. Our final sample contains 676 uncontaminated appointment announcements.

We estimate the appointing firms' cumulative abnormal returns (CAR) over a 3-day event window (-1, 1) and report the results in Panel B of Table 13. The announcement CARs are negative and statistically significant at both the mean and the median, suggesting that the stock market holds a skeptical view of older independent directors and reacts negatively to their appointments.

6. Conclusion

We explore the implications of aging directors for board effectiveness and corporate governance. Evidence from our director and firm level analyses suggest that older independent directors are associated with both monitoring deficiencies and advising benefits. Specifically, older independent directors are more likely to miss board meetings and less likely to be a member or chair of important board committees. Their presence on corporate boards is associated with higher CEO compensation, poorer financial disclosure, lower total payouts, worse acquisition decisions, and a lower sensitivity of CEO turnover to performance. On average, a greater representation of aging independent directors on

corporate boards is negatively related to firm performance, but this relation becomes insignificant or sometimes even positive in situations where firms have greater advising needs. Finally, we find that investors react negatively to firm appointments of old independent directors and company policy changes that increase the mandatory retirement age of directors.

Our study highlights the importance of the age profile of independent board members and has direct policy implications. In particular, companies that are considering to lift or waive the director retirement age in an attempt to retain/recruit experienced directors, need to take into account the potential deterioration of board effectiveness brought forth by aging directors. Similarly, while recent corporate governance reforms and the rise in shareholder activism have made boards, especially independent directors, more accountable for managerial decisions and firm performance, they have also increased the responsibilities and liabilities for directors. This may have created an unintended consequence of shrinking the supply of directors and forcing firms to tap into an older pool of candidates, which, as shown by our analysis, may undermine the very objectives that the corporate governance reforms aim to accomplish in the first place.

References

Adams, Renée B., and Daniel Ferreira. 2009. Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics* 94 (2): 291–309.

Ahn, Seoungpil, and Mark D. Walker. 2007. Corporate governance and the spinoff decision. *Journal of Corporate Finance* 13 (1): 76-93.

Anderson, Ronald C., Sattar A. Mansi, and David M. Reeb. 2004. Board characteristics, accounting report integrity, and the cost of debt. *Journal of Accounting and Economics*37 (3): 315-42.

Armstrong, Christopher S., John E. Core, and Wayne R. Guay. 2014. Do independent directors cause improvements in firm transparency? *Journal of Financial Economics* 113 (3): 383-403.

Bouwman, Christa HS. 2011. Corporate governance propagation through overlapping directors. *Review of Financial Studies*: hhr034.

Cai, Ye, and Merih Sevilir. 2012. Board connections and M&A transactions. *Journal of Financial Economics* 103 (2): 327-349.

Coles, Jeffrey L., and Chun-Keung Hoi. 2003. New evidence on the market for directors: Board membership and pennsylvania senate bill 1310. *Journal of Finance*: 197-230.

Coles, Jeffrey L., Naveen D. Daniel, and Lalitha Naveen. 2014. Co-opted boards. *Review of Financial Studies* 27 (6): 1751-1796.

Core, John E., Robert W. Holthausen, and David F. Larcker. 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics* 51 (3): 371-406.

Dou, Ying, Sidharth Sahgal, and Emma Jincheng Zhang. 2015. Should independent directors have term limits? The role of experience in corporate governance. *Financial Management*.

Duchin, Ran, John G. Matsusaka, and Oguzhan Ozbas. 2010. When are outside directors effective? *Journal of Financial Economics* 96 (2): 195-214.

Falato, Antonio, Dalida Kadyrzhanova, and Ugur Lel. 2014. Distracted directors: Does board busyness hurt shareholder value? *Journal of Financial Economics* 113 (3): 404-26.

Faleye, Olubunmi. 2007. Classified boards, firm value, and managerial entrenchment. *Journal of Financial Economics* 83 (2): 501-29.

Feenstra, Robert C. 1996. U.S. Imports, 1972–1994: Data and Concordances. NBER Working Paper no. 5515.

Feenstra, Robert C., John Romalis and Peter K. Schott, 2002. U.S. Imports, Exports, and Tariff Data, 1989–2001. NBER Working Paper no. 9387.

Ferris, Stephen P., Murali Jagannathan, and Adam C. Pritchard. 2003. Too busy to mind the business? Monitoring by directors with multiple board appointments. *Journal of Finance*: 1087-111.

Fich, Eliezer M., and Anil Shivdasani. 2006. Are busy boards effective monitors? *Journal of Finance* 61 (2): 689-724.

Fracassi, Cesare, and Geoffrey Tate. 2012. External networking and internal firm governance. *Journal of Finance* 67 (1): 153-94.

Fresard, Laurent. 2010. Financial strength and product market behavior: The real effects of corporate cash holdings. Journal of finance 65(3): 1097-1122.

Harford, Jarrad. 1999. Corporate cash reserves and acquisitions. *Journal of Finance* 54(6): 1969-1997.

Hennes, Karen M., Andrew J. Leone, and Brian P. Miller. 2008. The importance of distinguishing errors from irregularities in restatement research: The case of restatements and CEO/CFO turnover. *The Accounting Review* 83 (6): 1487-519.

Jenter, Dirk, and Fadi Kanaan. 2015. CEO turnover and relative performance evaluation. *Journal of Finance* 70 (5): 2155-2183.

Jenter, Dirk, and Katharina Lewellen. 2015. CEO preferences and acquisitions. *Journal of Finance*.

Jones, Jennifer J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research*: 193-228.

Khorana, Ajay, Peter Tufano, and Lei Wedge. 2007. Board structure, mergers, and shareholder wealth: A study of the mutual fund industry. *Journal of Financial Economics* 85 (2): 571-598.

Knyazeva, Anzhela, Diana Knyazeva, and Ronald W. Masulis. 2013. The supply of corporate directors and board independence. *Review of Financial Studies* 26 (6): 1561-605.

Kothari, Sagar P., Andrew J. Leone, and Charles E. Wasley. 2005. Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39 (1): 163-97.

Malmendier, Ulrike, and Geoffrey Tate. 2008. Who makes acquisitions? CEO overconfidence and the market's reaction. Journal of financial Economics 89 (1): 20-43.

Masulis, Ronald W., and Shawn Mobbs. 2014. Independent director incentives: Where do talented directors spend their limited time and energy? *Journal of Financial Economics* 111 (2): 406 - 429.

Masulis, Ronald W., Cong Wang, and Fei Xie. 2007. Corporate governance and acquirer returns. *Journal of Finance* 62 (4): 1851-1889.

Masulis, Ronald W., Cong Wang, and Fei Xie. 2012. Globalizing the boardroom - The effects of foreign directors on corporate governance and firm performance. *Journal of Accounting and Economics* 53 (3): 527-54.

Schott, Peter K. 2010. U.S. manufacturing exports and imports by SIC and NAICS category and partner country, 1972–2005. Unpublished working paper. Yale School of Management.

Tuggle, Christopher S., David G. Sirmon, Christopher R. Reutzel, and Leonard Bierman. 2010. Commanding board of director attention: Investigating how organizational performance and CEO duality affect board members' attention to monitoring. *Strategic Management Journal* 31 (9): 946-68.

Valta, Philip. 2012. Competition and the cost of debt. Journal of Financial Economics 105(3): 661-682.

Weisbach, Michael S., 1988. Outside directors and CEO turnover. *Journal of Financial Economics* 20: 431–460.

Table 1. Year Distribution of Sample Firms and Old Independent Directors

	Director age			*65-or-Older directors (%)*			*Domination by 65-or-Older directors (0/1)*	
Year	N	Mean	Median	N	Mean	Median	Mean	Median
1998	9,393	59.98	60	1,427	0.324	0.333	0.266	0
1999	9,711	60.02	60	1,453	0.317	0.300	0.260	0
2000	9,359	59.89	60	1,425	0.311	0.286	0.255	0
2001	9,650	59.74	60	1,452	0.298	0.267	0.248	0
2002	8,311	60.16	61	1,277	0.310	0.286	0.245	0
2003	8,802	60.26	61	1,289	0.304	0.286	0.233	0
2004	8,977	60.51	61	1,301	0.319	0.300	0.243	0
2005	8,987	60.62	61	1,308	0.319	0.300	0.248	0
2006	8,979	60.85	61	1,285	0.332	0.333	0.259	0
2007	9,600	61.03	62	1,303	0.343	0.333	0.275	0
2008	10,658	61.32	62	1,378	0.365	0.364	0.319	0
2009	10,175	61.71	62	1,319	0.387	0.375	0.346	0
2010	10,335	62.06	63	1,317	0.401	0.400	0.381	0
2011	10,285	62.35	63	1,316	0.421	0.400	0.416	0
2012	10,448	62.67	64	1,318	0.447	0.444	0.466	0
2013	10,689	62.85	64	1,321	0.460	0.444	0.483	0
2014	10,602	63.01	64	1,307	0.469	0.500	0.501	1
Total	164,961	61.18	62	22,796	0.360	0.333	0.319	0

N = number of observations.

This table displays the distribution of the presence of old independent directors by the year of annual meeting. Colum 2-4 report statistics for *Director age* at individual director level. Column 5-9 report statistics for *65-or-Older directors (%)* and *Domination by 65-or-Older directors (0/1)* at firm level. *Domination by 65-or-Older directors (0/1)* is an indicator equal to one if *65-or-Older directors (%)* is at least 50%, and zero otherwise.

Table 2. Attributes of Independent Directors

	(1)	(2)	(2) - (1)	
Mean	Age<=64	Age>64	Difference	*t*-stat
Age	56.530	69.250	12.720***	(480.00)
Retired	0.213	0.433	0.220***	(85.72)
Age at appointment	50.620	58.340	7.720***	(220.00)
Tenure	5.918	10.800	4.882***	(160.00)
Coopted	0.502	0.331	-0.171***	(-68.39)
Ownership	0.060	0.061	0.001**	(2.35)
Blockholder	0.009	0.006	-0.003***	(-6.51)
No. of board seats	1.582	1.606	0.024***	(5.12)
Financial expertise (available since 2007)	0.237	0.241	0.004	(1.55)
Former employee	0.002	0.003	0.002***	(6.07)
CEO of other firms	0.153	0.037	-0.116***	(-73.75)
Executive of other firms	0.196	0.073	-0.123***	(-68.03)

This table reports the mean statistics of director attributes. The sample is restricted to independent directors. Colum (1) shows the statistics for independent directors aged at 64 or below. Colum (2) shows the statistics for independent directors aged above 64. The last two columns show the simple mean-comparison tests between the two groups of independent directors. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3. Summary Statistics

Variable	N	Mean	Std.	P25	Median	P75
Firm characteristics						
ROA	22,796	0.127	0.091	0.073	0.122	0.176
Tobin's Q	22,796	1.853	1.164	1.126	1.453	2.101
Log market cap	22,796	7.680	1.569	6.584	7.548	8.677
RND	22,796	0.037	0.075	0	0	0.0315
Volatility	22,796	0.117	0.053	0.080	0.106	0.142
Governance characteristics						
Eindex	22,796	2.042	1.283	1	2	3
Board size	22,796	9.396	2.555	8	9	11
Independence	22,796	0.726	0.157	0.625	0.750	0.857
Director ownership	22,796	0.071	0.111	0.010	0.027	0.076
Duality	22,796	0.457	0.498	0	0	1
Busy board	22,796	0.100	0.129	0	0.056	0.167
Indep. blockholder	22,796	0.042	0.199	0	0	0
Indep. director tenure	22,796	0.137	0.175	0	0.091	0.231
Cooption	22,796	0.394	0.328	0.1	0.333	0.667
Outcome variables						
Attend_less75_pct	149,558	0.014	0.117	0	0	0
Number of committee memberships	149,558	1.838	1.104	1	2	3
Committee chairman	140,980	0.310	0.462	0	0	1
Audit and compensation committee member	149,558	0.186	0.389	0	0	0
Audit or compensation committee chairman	140,980	0.240	0.427	0	0	0
Discretionary accruals	18,153	0.000	0.047	-0.024	0.000	0.025
Restatement	22,796	0.091	0.287	0	0	0
Irregularity	22,796	0.040	0.219	0	0	0
Total compensation	20,415	8.125	1.017	7.421	8.159	8.844
Cash intensity	20,399	0.375	0.267	0.164	0.295	0.522
Equity intensity	20,399	0.452	0.270	0.266	0.499	0.659
Forced turnover	16,152	0.024	0.153	0	0	0
Acquirer CAR	3,367	0.002	0.718	-0.033	0.001	0.037
Dividend/EBIT	20,795	0.140	0.203	0.000	0.075	0.212
Repurchase/EBIT	19,463	0.275	0.510	0.000	0.000	0.363
Total payout/EBIT	20,830	0.408	0.572	0.031	0.246	0.533

N = number of observations.

This table reports summary statistics for key firm characteristics, governance characteristics and outcome variables. Detailed definitions of all variables are provided in the Appendix Table A2.

Table 4. Regressions of Independent Directors' Board Meeting Attendance				
	(1)	(2)	(3)	(4)
Director characteristics				
65-or-Older	0.046*	0.130	0.054**	0.189
	(1.68)	(0.82)	(2.51)	(0.88)
Number of board seats	0.022**	0.094	0.020**	0.033
	(2.30)	(1.60)	(1.97)	(0.43)
CEO director	0.207***	0.352***	0.177***	0.395***
	(6.53)	(3.03)	(5.05)	(2.61)
Ownership	0.892	-14.564**	0.857	-21.301
	(0.92)	(-2.46)	(0.57)	(-1.56)
Tenure	-0.011***	-0.010	-0.014***	-0.014
	(-4.54)	(-0.81)	(-4.60)	(-0.81)
Coopted	0.067*	0.119	0.070	0.200
	(1.95)	(1.01)	(1.60)	(1.26)
Firm characteristics				
Log market cap	-0.045***	-0.302***	-0.046***	-0.416***
	(-4.02)	(-6.32)	(-3.07)	(-5.85)
ROA	-0.282	-0.439	-0.346	-0.605
	(-1.32)	(-0.61)	(-1.16)	(-0.66)
Tobin's Q	0.031**	0.127***	0.028*	0.140**
	(2.49)	(2.71)	(1.66)	(2.41)
RND	-0.002	-0.010	0.016	0.216
	(-0.72)	(-0.50)	(1.03)	(1.05)
Volatility	0.432	0.087	0.091	-1.298
	(1.61)	(0.07)	(0.25)	(-0.76)
Eindex	-0.005	0.057	-0.031**	-0.002
	(-0.46)	(1.26)	(-2.01)	(-0.03)
Board size	0.038***	0.114***	0.042***	0.136***
	(6.67)	(5.58)	(5.78)	(5.03)
Independence	0.048	0.161	0.072	0.138
	(0.89)	(0.91)	(1.23)	(0.66)
Director ownership	0.165	0.161	0.176	-0.358
	(1.20)	(0.28)	(1.00)	(-0.40)
Duality	-0.049*	-0.130	-0.057*	-0.170
	(-1.93)	(-1.53)	(-1.66)	(-1.48)
Busy board	0.019	0.007	0.010	-0.119
	(0.19)	(0.02)	(0.08)	(-0.26)
Indep. blockholder	0.016	0.216	-0.105	0.126
	(0.26)	(0.92)	(-1.18)	(0.40)
Indep. director tenure	0.059	0.150	0.129	0.378
	(0.81)	(0.52)	(1.40)	(1.00)
Cooption	0.058	0.014	0.024	-0.030
	(1.18)	(0.09)	(0.38)	(-0.13)
Number of board meetings			-0.005	0.025

			(-0.80)	(1.29)
Director meeting fee			-0.069***	-0.190**
			(-3.62)	(-2.31)
Industry fixed effects	Yes	Yes	Yes	Yes
Director fixed effects		Yes		Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	119,442	12,526	50,940	5,806
Pseudo R^2	0.075	0.093	0.058	0.089

This table reports the regression analysis of poor board meeting attendance. The sample is restricted to independent directors. Each observation is a director-firm-year. The dependent variable is *Attend_less75_pct*, which is an indicator equal to one if an independent director attended less than 75% of a firm's board meetings, and zero otherwise. Model (1) and (3) estimate a Probit regression and Model (2) and (4) estimate a conditional Logit regression. In parentheses are *z*-statistics based on standard errors adjusted for heteroskedasticity and clustering at director level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 5. Regressions of Independent Directors' Committee Membership and Chairmanship

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Number of committee memberships		*Committee chairman*		*Audit and compensation committee member*		*Audit or compensation committee chairman*	
Director characteristics								
65-or-Older	0.042***	0.005	0.067***	-0.139***	0.036**	-0.075*	0.043**	-0.174***
	(6.70)	(0.68)	(4.19)	(-2.80)	(2.04)	(-1.72)	(2.46)	(-3.20)
Number of board seats	0.023***	0.006*	0.115***	0.098***	0.016*	0.026	0.089***	0.117***
	(4.98)	(1.76)	(11.71)	(3.63)	(1.75)	(0.77)	(8.41)	(4.25)
CEO director	0.025***	0.034***	-0.051**	-0.119**	-0.002	-0.021	-0.062***	-0.167***
	(2.85)	(4.05)	(-2.33)	(-2.10)	(-0.09)	(-0.30)	(-2.67)	(-2.76)
Ownership	-1.839***	0.083	-5.274***	1.647	-7.284***	-6.448	-6.383***	-0.458
	(-4.74)	(0.18)	(-5.51)	(0.57)	(-7.26)	(-1.19)	(-5.30)	(-0.12)
Tenure	0.008***	0.008***	0.036***	0.097***	0.008***	0.008	0.025***	0.079***
	(14.96)	(6.61)	(26.30)	(14.90)	(5.32)	(0.94)	(17.72)	(10.66)
Coopted	-0.017**	-0.014	0.026	0.016	-0.000	-0.010	0.017	0.011
	(-2.14)	(-1.59)	(1.29)	(0.29)	(-0.02)	(-0.13)	(0.81)	(0.18)
Firm characteristics								
Log market cap	-0.006**	-0.018***	-0.015**	-0.015	-0.027***	-0.003	-0.013*	0.008
	(-2.07)	(-3.95)	(-2.11)	(-0.55)	(-3.26)	(-0.09)	(-1.71)	(0.26)
ROA	0.090*	0.099**	0.348***	0.676**	0.147	0.007	0.247*	0.610*
	(1.92)	(2.33)	(2.96)	(2.13)	(1.10)	(0.02)	(1.95)	(1.69)
Tobin's Q	0.005	0.010***	-0.020**	-0.044*	0.030***	0.070**	-0.015	-0.046
	(1.46)	(2.63)	(-2.34)	(-1.76)	(3.16)	(2.10)	(-1.63)	(-1.64)
RND	-0.004	-0.003*	-0.006	0.002	-0.000	-0.010	-0.004	0.004
	(-1.59)	(-1.75)	(-1.09)	(0.41)	(-0.16)	(-1.47)	(-0.99)	(0.54)
Volatility	-0.176***	-0.048	0.056	-0.187	-0.181	0.658	-0.004	-0.019
	(-2.61)	(-0.57)	(0.33)	(-0.34)	(-0.95)	(1.00)	(-0.02)	(-0.03)
Eindex	-0.001	-0.000	0.003	0.031	-0.032***	-0.048*	0.001	0.007
	(-0.46)	(-0.04)	(0.46)	(1.58)	(-4.18)	(-1.86)	(0.08)	(0.28)
Board size	-0.049***	-0.028***	-0.071***	-0.116***	-0.128***	-0.223***	-0.064***	-0.115***
	(-30.95)	(-15.15)	(-18.98)	(-10.58)	(-27.43)	(-14.52)	(-15.92)	(-9.29)
Independence	-0.040***	-0.013	-0.039	0.005	-0.519***	-0.861***	-0.107***	-0.093
	(-3.11)	(-1.01)	(-1.18)	(0.05)	(-15.32)	(-8.33)	(-3.16)	(-0.90)
Director ownership	0.051	0.061	0.162*	0.558*	0.701***	1.172***	0.225**	0.718**
	(1.37)	(1.21)	(1.77)	(1.89)	(7.14)	(3.01)	(2.29)	(2.12)

Duality	0.002	0.006	-0.020	-0.068**	-0.041**	-0.072	-0.013	-0.033
	(0.39)	(1.31)	(-1.45)	(-1.98)	(-2.53)	(-1.59)	(-0.90)	(-0.86)
Busy board	0.127***	0.039	-0.346***	-0.651***	-0.159**	-0.124	-0.311***	-0.666***
	(4.48)	(1.39)	(-5.28)	(-3.77)	(-2.09)	(-0.54)	(-4.43)	(-3.47)
Indep. blockholder	0.033**	0.027*	0.027	0.146	-0.003	0.031	0.032	0.194
	(2.14)	(1.69)	(0.70)	(1.37)	(-0.08)	(0.21)	(0.80)	(1.64)
Indep. director tenure	-0.086***	-0.028	-0.532***	-0.646***	0.038	0.086	-0.372***	-0.431***
	(-4.59)	(-1.45)	(-11.47)	(-4.90)	(0.74)	(0.51)	(-7.60)	(-2.92)
Cooption	-0.030***	-0.022*	-0.035	0.062	0.025	-0.118	-0.026	-0.010
	(-2.66)	(-1.93)	(-1.22)	(0.80)	(0.79)	(-1.20)	(-0.86)	(-0.11)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Director fixed effects		Yes		Yes		Yes		Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	149,558	115,382	140,980	69,153	149,558	48,421	140,980	56,821

This table reports regression analysis of board committee membership and chairmanship. The sample is restricted to independent directors. Each observation is a director-firm-year. The dependent variable for Model (1) and (2) is the number of committee memberships on the audit committee, compensation committee, nominating committee and governance committee. The dependent variable for Model (3) and (4) is an indicator variable equal to one if a director is the chairman of any committee, and zero otherwise. The dependent variable for Model (5) and (6) is an indicator variable equal to one if a director sits on both the audit committee and the compensation committee, and zero otherwise. The dependent variable for Model (7) and (8) is an indicator variable equal to one if a director is the chairman of the audit committee or the compensation committee, and zero otherwise. Model (1) and (2) estimate a Poisson count regression. Model (3), (5), (7) estimate a Probit regression and Model (4), (6), (8) estimate a conditional Logit regression. In parentheses are *z*-statistics based on standard errors adjusted for heteroskedasticity and clustering at director level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 6. Regressions of CEO Compensation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total compensation			*Cash intensity*			*Equity intensity*		
65-or-Older directors (%)	0.078*			0.026**			-0.044***		
	(1.73)			(2.12)			(-3.35)		
65-or-Older directors		0.065**	0.066**		0.018**	0.014*		-0.024**	-0.018**
- on compensation committee (%)		(2.08)	(2.50)		(2.05)	(1.93)		(-2.56)	(-2.25)
Log market cap	0.452***	0.453***	0.335***	-0.065***	-0.065***	-0.059***	0.061***	0.061***	0.055***
	(39.04)	(38.91)	(18.92)	(-20.33)	(-20.33)	(-10.25)	(18.77)	(18.83)	(8.92)
ROA	0.349**	0.343**	0.760***	0.030	0.033	0.028	-0.102**	-0.105**	-0.221***
	(2.11)	(2.05)	(5.32)	(0.73)	(0.78)	(0.58)	(-2.08)	(-2.12)	(-4.43)
Stock return	0.023	0.025	-0.003	0.020***	0.020***	0.029***	-0.057***	-0.057***	-0.062***
	(1.40)	(1.53)	(-0.17)	(4.26)	(4.18)	(5.80)	(-10.91)	(-10.79)	(-10.90)
Tobin's Q	-0.114***	-0.115***	-0.026*	0.006*	0.006*	-0.003	0.003	0.003	0.011**
	(-7.97)	(-7.96)	(-1.91)	(1.79)	(1.71)	(-0.81)	(0.73)	(0.80)	(2.49)
RND	0.241	0.237	-0.530*	-0.253***	-0.252***	0.088	0.364***	0.365***	-0.083
	(1.19)	(1.16)	(-1.71)	(-4.38)	(-4.38)	(0.85)	(6.02)	(6.07)	(-0.70)
Volatility	2.101***	2.092***	0.325	-0.499***	-0.497***	-0.239***	0.574***	0.576***	0.247***
	(8.22)	(8.33)	(1.12)	(-7.30)	(-7.32)	(-2.84)	(8.23)	(8.29)	(2.81)
Eindex	0.031***	0.030***	0.005	-0.013***	-0.013***	0.000	0.011***	0.010***	-0.002
	(3.35)	(3.26)	(0.58)	(-5.18)	(-5.07)	(0.14)	(3.91)	(3.82)	(-0.67)
Board size	0.012**	0.011**	0.004	0.001	0.001	0.002	-0.002	-0.003	-0.002
	(2.11)	(1.97)	(0.84)	(0.66)	(0.76)	(1.00)	(-1.51)	(-1.55)	(-1.04)
Independence	0.402***	0.390***	0.222***	-0.150***	-0.154***	-0.078***	0.114***	0.120***	0.059**
	(4.92)	(4.76)	(2.82)	(-6.65)	(-6.81)	(-2.94)	(4.60)	(4.75)	(2.09)
Director ownership	-0.868***	-0.831***	-0.571***	0.290***	0.284***	0.134***	-0.303***	-0.299***	-0.173***
	(-5.56)	(-5.33)	(-3.45)	(6.84)	(6.66)	(2.58)	(-7.10)	(-6.86)	(-3.41)
Duality	0.091***	0.090***	0.008	-0.003	-0.003	0.003	-0.006	-0.006	-0.006

	(4.68)	(4.64)	(0.45)	(-0.57)	(-0.55)	(0.63)	(-1.02)	(-1.07)	(-0.94)
Busy board	0.280***	0.272***	0.115	-0.022	-0.021	-0.013	-0.006	-0.009	-0.019
	(3.95)	(3.84)	(1.63)	(-1.10)	(-1.00)	(-0.55)	(-0.25)	(-0.40)	(-0.70)
Indep. blockholder	0.066	0.058	0.028	-0.025*	-0.025*	-0.002	0.034**	0.034**	0.014
	(1.44)	(1.24)	(0.60)	(-1.81)	(-1.77)	(-0.12)	(2.33)	(2.32)	(0.97)
Indep. director tenure	-0.166***	-0.165***	-0.054	0.088***	0.089***	0.052***	-0.069***	-0.077***	-0.060***
	(-2.87)	(-2.91)	(-1.02)	(5.17)	(5.29)	(2.78)	(-3.99)	(-4.45)	(-3.01)
Cooption	-0.012	-0.009	0.061**	0.040***	0.040***	0.025**	-0.043***	-0.042***	-0.066***
	(-0.36)	(-0.28)	(2.10)	(4.60)	(4.57)	(2.41)	(-4.51)	(-4.39)	(-5.91)
Industry fixed effects	Yes	Yes		Yes	Yes		Yes	Yes	
Firm fixed effects			Yes			Yes			Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	20,415	20,415	20,415	20,339	20,339	20,339	20,339	20,339	20,339
Adjusted R^2	0.539	0.539	0.733	0.333	0.330	0.517	0.201	0.198	0.408

This table reports the OLS regression analysis of CEO compensation. The dependent variable for Model (1)-(3) is *Total compensation*, the natural logarithm of the dollar value of the CEO's total annual compensation. The dependent variable for Model (4)-(6) is *Cash intensity*, the proportion of total annual CEO compensation that comes from cash. The dependent variable for Model (7)-(9) is *Equity intensity*, the proportion of total annual CEO compensation that comes from option grants and stocks. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity and clustering at firm level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 7. Regressions of Earnings Management and Restatements

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Discretionary accruals			*Restatement*			*Irregularity*		
65-or-Older directors (%)	0.006***			0.121*			0.138*		
	(3.07)			(1.65)			(1.68)		
65-or-Older directors		0.005***	0.003*		0.141***	0.594***		0.157**	0.536**
- on audit committee (%)		(3.24)	(1.85)		(2.77)	(3.04)		(2.50)	(2.23)
ROA	-0.018**	-0.018**	0.025**	-0.917***	-0.901***	-3.091***	-0.787**	-0.761**	-2.332**
	(-2.03)	(-2.05)	(2.24)	(-3.53)	(-3.46)	(-3.74)	(-2.40)	(-2.31)	(-2.41)
Tobin's Q	0.001	0.001	0.000	-0.015	-0.013	0.023	-0.007	-0.006	-0.062
	(1.04)	(1.05)	(0.48)	(-0.68)	(-0.62)	(0.35)	(-0.27)	(-0.22)	(-0.84)
Log market cap	-0.000	-0.000	0.001	-0.006	-0.006	0.194*	0.033	0.033	0.288***
	(-0.36)	(-0.40)	(0.62)	(-0.30)	(-0.30)	(1.88)	(1.29)	(1.29)	(2.61)
RND	-0.058***	-0.059***	-0.037	-0.928**	-0.893**	-5.070***	-1.057**	-1.009**	-5.490***
	(-6.29)	(-6.34)	(-1.44)	(-2.39)	(-2.30)	(-3.53)	(-2.10)	(-2.00)	(-2.80)
Volatility	-0.049***	-0.050***	-0.018	1.462***	1.472***	2.086	2.827***	2.850***	4.511***
	(-4.41)	(-4.43)	(-1.15)	(3.30)	(3.33)	(1.43)	(5.01)	(5.04)	(2.90)
Eindex	-0.000	-0.000	-0.001	-0.036**	-0.035*	0.002	-0.033	-0.031	0.051
	(-0.72)	(-0.70)	(-1.41)	(-1.99)	(-1.95)	(0.02)	(-1.31)	(-1.26)	(0.57)
Board size	-0.000	-0.000	-0.000	-0.008	-0.008	0.038	0.003	0.003	0.080**
	(-1.62)	(-1.51)	(-1.17)	(-0.78)	(-0.78)	(1.12)	(0.27)	(0.26)	(2.02)
Independence	-0.003	-0.004	0.001	-0.274*	-0.303**	-0.815*	-0.234	-0.279*	0.133
	(-0.83)	(-1.02)	(0.10)	(-1.86)	(-2.18)	(-1.80)	(-1.58)	(-1.95)	(0.26)
Director ownership	-0.000	-0.000	0.004	-0.110	-0.404*	0.027	-0.120	-0.131	1.050
	(-0.05)	(-0.05)	(0.43)	(-0.60)	(-1.78)	(0.03)	(-0.54)	(-0.59)	(1.19)
Duality	0.001	0.002*	0.002*	0.012	0.011	0.311***	0.028	0.026	0.432***
	(1.63)	(1.72)	(1.91)	(0.32)	(0.29)	(2.94)	(0.56)	(0.53)	(3.41)

Busy board	-0.001	-0.001	-0.004	-0.047	-0.056	0.373	-0.362	-0.371	-0.447
	(-0.20)	(-0.19)	(-0.81)	(-0.26)	(-0.31)	(0.69)	(-1.51)	(-1.55)	(-0.71)
Indep. blockholder	-0.000	-0.000	0.000	-0.036	-0.033	0.192	0.166	0.170	0.562*
	(-0.08)	(-0.12)	(0.01)	(-0.40)	(-0.37)	(0.70)	(1.39)	(1.42)	(1.79)
Indep. director tenure	0.004	0.004*	-0.000	-0.041	-0.073	-0.318	-0.027	-0.064	-0.240
	(1.39)	(1.69)	(-0.14)	(-0.37)	(-0.65)	(-0.83)	(-0.18)	(-0.43)	(-0.61)
Cooption	-0.001	-0.001	-0.001	0.149**	0.146**	0.208	0.150*	0.144*	0.014
	(-0.56)	(-0.62)	(-0.74)	(2.49)	(2.45)	(1.13)	(1.87)	(1.80)	(0.07)
Industry fixed effects	Yes	Yes		Yes	Yes		Yes	Yes	
Firm fixed effects			Yes			Yes			Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	18,153	18,153	18,153	22,796	22,796	8,254	22,796	22,796	4,272

This table reports the regression analysis of earnings management and restatements. The dependent variable for Model (1)-(3) is *Discretionary accruals*, the performance-adjusted discretionary accruals. The dependent variable for Model (4)-(6) is *Restatement*, an indicator equal to 1 if the firm subsequently restated the financial statements for that fiscal year. The dependent variable for Model (7)-(9) is *Irregularity*, an indicator equal to 1 if the firm subsequently restated the financial statements for that fiscal year and the restatement is classified as irregularity. Model (1)-(3) estimate an OLS regression. Model (4), (5), (7), (8) estimate a Probit regression and Model (6), (9) estimate a conditional Logit regression. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity and clustering at firm level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 8. Regressions of Dividend, Repurchase and Total Payout

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Repurchase/EBIT			*Dividend/EBIT*			*Total payout/EBIT*		
65-or-Older directors (%)	-0.074***	-0.054*	-0.106***	-0.002**	-0.005*	-0.001	-0.068***	-0.021*	-0.096***
	(-3.29)	(-1.66)	(-4.11)	(-2.49)	(-1.65)	(-0.22)	(-2.72)	(-1.71)	(-3.58)
Excess cash			0.118***			0.008			0.136***
			(3.11)			(0.54)			(3.17)
*65-or-Older directors (%) * Excess cash*			-0.268***			-0.086***			-0.236***
			(-3.46)			(-3.21)			(-3.04)
Log market cap	0.026***	0.059***	0.025***	-0.004	0.004	-0.004	0.022***	0.080***	0.020***
	(4.84)	(4.12)	(4.51)	(-1.50)	(0.79)	(-1.48)	(3.79)	(5.23)	(3.45)
ROA	0.422***	-0.036	0.483***	-0.167***	-0.221***	-0.178***	0.262**	-0.294**	0.312***
	(4.21)	(-0.32)	(4.83)	(-3.77)	(-5.18)	(-3.94)	(2.34)	(-2.23)	(2.78)
Tobin's Q	-0.016*	-0.047***	-0.018**	0.007**	-0.008***	0.008**	-0.016*	-0.072***	-0.018**
	(-1.91)	(-4.29)	(-2.15)	(2.40)	(-2.65)	(2.47)	(-1.93)	(-6.15)	(-2.14)
Capex	-0.836***	-0.768***	-0.825***	-0.236***	-0.146***	-0.239***	-1.097***	-0.988***	-1.086***
	(-8.42)	(-5.52)	(-8.36)	(-5.15)	(-2.62)	(-5.21)	(-10.52)	(-6.28)	(-10.45)
Leverage	-0.363***	-0.706***	-0.353***	-0.092***	-0.058***	-0.094***	-0.477***	-0.773***	-0.468***
	(-11.37)	(-11.58)	(-10.93)	(-4.53)	(-2.95)	(-4.70)	(-11.34)	(-11.73)	(-11.15)
RND	1.935***	0.463	1.809***	-0.151**	0.027	-0.146**	1.797***	0.437	1.663***
	(9.21)	(1.03)	(8.59)	(-2.44)	(0.48)	(-2.16)	(8.50)	(1.03)	(7.79)
Volatility	-0.559***	-0.733***	-0.588***	-1.113***	-0.600***	-1.112***	-1.522***	-0.966***	-1.571***
	(-3.96)	(-3.23)	(-4.15)	(-16.46)	(-8.22)	(-16.25)	(-10.01)	(-4.31)	(-10.21)
Eindex	0.004	0.012	0.005	-0.003	-0.002	-0.003	-0.001	0.010	-0.000
	(0.91)	(1.62)	(1.04)	(-1.29)	(-0.95)	(-1.35)	(-0.10)	(1.24)	(-0.03)
Board size	-0.008***	-0.003	-0.008***	0.005***	0.002	0.005***	-0.004	-0.001	-0.003
	(-3.42)	(-0.80)	(-3.21)	(3.11)	(1.49)	(2.97)	(-1.30)	(-0.32)	(-1.23)
Independence	0.066*	-0.039	0.068*	0.035	0.007	0.034	0.120**	-0.026	0.120**
	(1.69)	(-0.74)	(1.72)	(1.55)	(0.34)	(1.53)	(2.53)	(-0.43)	(2.51)
Director ownership	-0.001	-0.024	-0.002	0.062**	0.007	0.061**	0.071	-0.029	0.070
	(-0.03)	(-0.26)	(-0.03)	(2.00)	(0.20)	(2.01)	(1.21)	(-0.30)	(1.20)
Duality	0.008	0.003	0.008	0.003	0.008*	0.003	0.012	0.012	0.011
	(0.87)	(0.29)	(0.77)	(0.55)	(1.83)	(0.56)	(1.05)	(0.93)	(0.97)
Busy board	0.031	0.082	0.034	0.049**	-0.001	0.050**	0.077	0.091	0.082*
	(0.81)	(1.53)	(0.87)	(2.26)	(-0.03)	(2.31)	(1.63)	(1.45)	(1.71)

Indep. blockholder	0.057*	0.032	0.051	-0.006	0.010	-0.006	0.060*	0.061	0.054
	(1.82)	(0.86)	(1.62)	(-0.56)	(0.85)	(-0.53)	(1.67)	(1.36)	(1.53)
Indep. director tenure	-0.111***	-0.059	-0.109***	0.043***	0.015	0.044***	-0.064*	-0.050	-0.061*
	(-3.70)	(-1.45)	(-3.59)	(2.74)	(0.93)	(2.78)	(-1.88)	(-1.08)	(-1.77)
Cooption	-0.011	0.014	-0.012	0.001	-0.008	0.001	-0.014	0.002	-0.015
	(-0.71)	(0.69)	(-0.76)	(0.12)	(-1.11)	(0.07)	(-0.74)	(0.07)	(-0.81)
Industry fixed effects	Yes		Yes	Yes		Yes	Yes		Yes
Firm fixed effects		Yes			Yes			Yes	
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	20,795	20,795	20,795	19,463	19,463	19,463	20,830	20,830	20,830
Adjusted R^2	0.168	0.327	0.171	0.187	0.512	0.188	0.130	0.302	0.132

This table reports the OLS regression analysis of firms' payout. The dependent variable is repurchases divided by EBIT for Model (1)-(3), dividends divided by EBIT Model (4)-(6) and the sum of repurchases and dividends divided by EBIT for Model (7)-(9). In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity and clustering at firm level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 9. Regressions of Acquirer Returns		
	(1)	(2)
65-or-Older directors (%)	-0.011***	-0.012***
	(-3.05)	(-2.76)
Relative deal size	-0.010	-0.007
	(-1.29)	(-0.98)
Public target	-0.019***	-0.019***
	(-5.51)	(-5.49)
Private target	-0.005**	-0.006**
	(-1.98)	(-2.28)
% Deal value paid by cash	0.000**	0.000**
	(2.23)	(2.07)
Tender offer	0.005	0.005
	(1.01)	(1.04)
Hostile deal	-0.007	-0.009
	(-0.42)	(-0.50)
Diversifying deal	-0.004*	-0.004*
	(-1.72)	(-1.66)
Log market cap	-0.003***	-0.003***
	(-3.66)	(-2.73)
ROA	-0.034**	-0.046***
	(-2.08)	(-2.72)
Tobin's Q	0.003***	0.003***
	(3.08)	(2.78)
RND	-0.073***	-0.079***
	(-4.59)	(-4.77)
Volatility	0.028	0.031
	(1.06)	(1.12)
Eindex		-0.001*
		(-1.72)
Board size		-0.000
		(-0.10)
Independence		0.010
		(1.08)
Director ownership		0.015
		(1.00)
Duality		-0.003
		(-1.39)
Busy board		-0.004
		(-0.46)
Indep. blockholder		-0.002
		(-0.36)
Indep. director tenure		0.011
		(1.64)

Cooption		0.002
		(0.43)
Industry fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
N	3,367	3,367
Adjusted R^2	0.069	0.065

This table reports the OLS regression analysis of acquirer returns. The dependent variable is the cumulative abnormal returns over the 5-day window (-2, 2), where day 0 is the announcement date of the acquisition. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity and clustering at industry level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 10. Regressions of Forced CEO Turnovers

Performance =	(1) Industry-adjusted ROA	(2) Industry-adjusted ROA	(3) Market-adjusted stock return	(4) Market-adjusted stock return
65-or-Older directors (%)	-0.053	0.360	-0.151	0.563
	(-0.27)	(0.54)	(-1.20)	(1.10)
*65-or-Older directors (%) * Performance*	3.460**	9.926***	0.447*	1.108*
	(2.43)	(2.66)	(1.78)	(1.85)
Log market cap	-0.002	-0.581***	-0.020	-0.859***
	(-0.07)	(-3.00)	(-0.84)	(-4.16)
Tobin's Q	-0.093***	-0.173	-0.143***	-0.171
	(-2.80)	(-1.00)	(-4.20)	(-0.95)
RND	-0.853*	-4.176	-0.203	-1.408
	(-1.91)	(-1.45)	(-0.49)	(-0.62)
Volatility	1.856***	-0.942	2.557***	0.021
	(3.26)	(-0.30)	(4.65)	(0.01)
Performance	-2.635***	-2.079	-0.238	-0.471**
	(-3.04)	(-1.51)	(-0.79)	(-2.08)
Eindex	-0.021	-0.257	-0.017	-0.243
	(-0.87)	(-1.21)	(-0.74)	(-1.15)
*Eindex * Performance*	-0.046	0.898	-0.025	-0.208
	(-0.24)	(1.18)	(-0.46)	(-1.57)
Board size	0.015	0.045	0.023*	0.085
	(1.20)	(0.76)	(1.94)	(1.44)
*Board size * Performance*	-0.104	-0.928***	-0.006	0.021
	(-1.05)	(-2.60)	(-0.23)	(0.32)
Independence	0.285	-0.748	0.191	-0.648
	(1.53)	(-0.97)	(1.04)	(-0.86)
*Independence * Performance*	1.980	-3.394	0.171	1.081
	(1.24)	(-0.52)	(0.44)	(1.01)
Director ownership	-0.596*	-1.938	-0.545*	-1.471
	(-1.82)	(-1.28)	(-1.77)	(-1.27)
*Director ownership * Performance*	0.233	-9.128	-1.229	-2.906
	(0.10)	(-0.79)	(-1.60)	(-1.40)
Duality	-0.294***	-0.782***	-0.247***	-0.700***
	(-4.87)	(-3.99)	(-4.21)	(-3.61)
*Duality * Performance*	-0.660	-1.266	-0.013	0.099
	(-1.36)	(-0.89)	(-0.11)	(0.33)
Busy board	0.188	1.055	0.232	0.689
	(0.90)	(1.14)	(1.15)	(0.76)
*Busy board * Performance*	-0.101	3.756	0.378	1.158
	(-0.06)	(0.71)	(0.81)	(1.04)
Indep. blockholder	0.077	0.327	-0.002	0.156
	(0.56)	(0.68)	(-0.01)	(0.32)

*Indep. Blockholder * Performance*	1.461	4.308	0.345	0.680
	(1.22)	(1.30)	(1.11)	(0.88)
Indep. director tenure	-0.192	-0.145	-0.173	-0.141
	(-1.24)	(-0.20)	(-1.16)	(-0.20)
*Indep. director tenure * Performance*	-1.281	3.228	-0.448	0.074
	(-0.95)	(0.65)	(-1.28)	(0.09)
Cooption	-0.449***	1.232***	-0.514***	1.145***
	(-5.13)	(3.64)	(-6.01)	(3.57)
*Cooption * Performance*	0.944	-1.055	0.215	0.352
	(1.41)	(-0.38)	(1.24)	(0.75)
Industry fixed effects	Yes		Yes	
Firm fixed effects		Yes		Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	12,508	2,388	12,508	2,388

This table reports the regression analysis of CEO turnover. The dependent variable is *Forced turnover*, an indicator equal to one if a firm experiences a forced CEO turnover, and zero otherwise. The variable *Performance* represents *Industry-adjusted ROA* in Model (1)-(2) and *Market-adjusted stock return* in Model (3)-(4). Model (1), (3) estimate a Probit regression and Model (2), (4) estimate a conditional Logit regression. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity and clustering at firm level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 11.
Panel A. Regressions of Firm Performance: Average Effect

	(1)	(2)	(3)	(4)
	Industry-adj ROA		*Tobin's Q*	
65-or-Older directors (%)	-0.015***	-0.009**	-0.165***	-0.151***
	(-3.37)	(-2.20)	(-2.69)	(-2.72)
Log market cap	0.018***	0.033***	0.358***	0.699***
	(18.01)	(22.13)	(24.74)	(29.00)
RND	-0.370***	-0.575***	1.877***	-1.501**
	(-14.67)	(-14.98)	(5.78)	(-2.55)
Volatility	-0.202***	-0.023	1.082***	3.029***
	(-7.67)	(-0.98)	(3.14)	(7.96)
Eindex	-0.000	-0.001	0.002	-0.012
	(-0.04)	(-1.34)	(0.15)	(-1.05)
Board size	-0.006***	-0.002***	-0.109***	-0.066***
	(-12.06)	(-4.34)	(-15.27)	(-9.71)
Independence	-0.017**	-0.010	-0.114	-0.101
	(-1.99)	(-1.60)	(-1.03)	(-1.11)
Director ownership	0.099***	0.024	2.247***	1.118***
	(3.19)	(0.93)	(5.69)	(2.92)
Director ownership^2	-0.174***	-0.041	-3.429***	-1.254**
	(-3.21)	(-0.97)	(-4.57)	(-2.09)
Duality	-0.005**	-0.000	-0.059**	-0.025
	(-2.51)	(-0.36)	(-2.46)	(-1.29)
Busy board	-0.044***	-0.014**	-0.755***	-0.140
	(-5.16)	(-1.99)	(-6.50)	(-1.40)
Indep. blockholder	0.008	0.003	0.048	0.029
	(1.40)	(0.67)	(0.70)	(0.61)
Indep. director tenure	0.011	-0.007	0.151	-0.058
	(1.55)	(-1.44)	(1.61)	(-0.86)
Cooption	-0.001	-0.002	0.028	-0.047
	(-0.24)	(-0.81)	(0.78)	(-1.56)
Industry fixed effects	Yes		Yes	
Firm fixed effects		Yes		Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	22,796	22,796	22,796	22,796
Adjusted R^2	0.191	0.681	0.345	0.749

This table reports the OLS regression analysis of firm performance. The dependent variable is *Industry-adjusted ROA* for Model (1) and (2) and *Tobin's Q* for Model (3) and (4). In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity and clustering at firm level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Panel B. Regressions of Firm Performance: Import Tariff Cuts				
	(1)	(2)	(3)	(4)
	Industry-adj ROA		*Tobin's Q*	
Older-than-64 directors (%)	-0.018**	-0.015**	-0.046	-0.352*
	(-2.11)	(-2.22)	(-0.38)	(-1.74)
Tariff Cut	-0.015*	-0.013*	-0.294***	-0.248**
	(-1.96)	(-1.95)	(-2.87)	(-2.15)
*Older-than-64 directors (%) * Tariff Cut*	0.037**	0.043**	0.686***	0.473**
	(2.12)	(1.99)	(2.82)	(2.04)
Log market cap	0.023***	0.023***	0.507***	0.107*
	(13.52)	(8.68)	(17.74)	(1.75)
RND	-0.356***	-0.118***	1.671***	-2.243**
	(-9.66)	(-2.62)	(3.19)	(-2.54)
Volatility	-0.193***	0.025	3.643***	-2.018
	(-3.51)	(0.42)	(4.75)	(-1.27)
Eindex	-0.000	-0.001	-0.018	0.005
	(-0.13)	(-0.54)	(-0.73)	(0.06)
Board size	-0.005***	-0.002***	-0.120***	-0.059**
	(-5.23)	(-3.01)	(-7.37)	(-2.24)
Independence	0.015	0.011	0.396*	0.268
	(0.96)	(0.95)	(1.80)	(0.90)
Director ownership	0.108**	0.110**	2.836***	1.452
	(2.03)	(2.06)	(3.65)	(0.97)
Director ownership^2	-0.125	-0.152	-5.046***	-2.393
	(-1.38)	(-1.59)	(-3.87)	(-1.04)
Duality	-0.010**	-0.000	-0.133**	-0.030
	(-2.40)	(-0.04)	(-2.39)	(-0.34)
Busy board	-0.036**	-0.005	-0.893***	-0.493
	(-2.57)	(-0.43)	(-4.36)	(-1.41)
Indep. blockholder	0.011	-0.002	-0.117	-0.102
	(0.96)	(-0.21)	(-0.80)	(-0.73)
Indep. director tenure	0.022*	0.012	-0.223	-0.288
	(1.76)	(1.38)	(-1.31)	(-1.41)
Cooption	0.009	-0.003	0.082	-0.104
	(1.33)	(-0.52)	(0.90)	(-0.69)
Industry fixed effects	Yes		Yes	
Firm fixed effects		Yes		Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	3,935	3,935	4,153	4,153
Adjusted R^2	0.303	0.684	0.515	0.696

This table reports the OLS regression analysis of firm performance. The dependent variable is *Industry-adjusted ROA* for Model (1) and (2) and *Tobin's Q* for Model (3) and (4). *Tariff Cut* is an indicator equal to one if a firm's industry experiences a tariff cut that year and zero otherwise. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity and clustering at firm level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Panel C. Regressions of Firm Performance: Highly Volatile Industries				
	(1)	(2)	(3)	(4)
	Industry-adj ROA		*Tobin's Q*	
Older-than-64 directors (%)	-0.020***	-0.002	-0.224***	-0.212***
	(-3.72)	(-0.56)	(-3.45)	(-3.89)
High Volatility Industry	-0.027		0.039	
	(-1.64)		(0.79)	
*Older-than-64 directors (%) * High Volatility Industry*	0.024**	0.013*	0.231**	0.212***
	(2.22)	(1.65)	(2.02)	(3.43)
Log market cap	0.018***	0.034***	0.268***	0.256***
	(16.37)	(24.69)	(19.02)	(12.02)
RND	-0.342***	-0.529***	1.974***	-1.236**
	(-12.24)	(-12.18)	(5.71)	(-2.03)
Volatility	-0.197***	-0.043*	-0.134	1.810***
	(-7.08)	(-1.92)	(-0.37)	(4.62)
Eindex	-0.000	-0.001*	-0.013	0.002
	(-0.56)	(-1.79)	(-1.26)	(0.22)
Board size	-0.005***	-0.002***	-0.089***	-0.046***
	(-9.60)	(-5.39)	(-12.48)	(-6.82)
Independence	-0.018**	0.002	-0.177	-0.133
	(-1.99)	(0.31)	(-1.55)	(-1.39)
Director ownership	0.085**	0.038	1.978***	0.994**
	(2.50)	(1.55)	(4.55)	(2.31)
Director ownership^2	-0.131**	-0.065	-3.069***	-1.494**
	(-2.14)	(-1.52)	(-3.57)	(-2.12)
Duality	-0.005**	-0.001	-0.080***	-0.043*
	(-2.47)	(-1.00)	(-3.09)	(-1.95)
Busy board	-0.031***	-0.012**	-0.450***	-0.096
	(-3.41)	(-1.97)	(-3.85)	(-0.93)
Indep. blockholder	0.011*	-0.002	0.097	0.053
	(1.70)	(-0.76)	(1.37)	(1.12)
Indep. director tenure	0.018**	-0.009**	0.151	-0.051
	(2.46)	(-2.00)	(1.52)	(-0.66)
Cooption	-0.000	-0.001	0.049	-0.001
	(-0.11)	(-0.42)	(1.27)	(-0.03)
Industry fixed effects	Yes		Yes	
Firm fixed effects		Yes		Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	22,880	22,880	22,880	22,880
Adjusted R^2	0.143	0.565	0.301	0.693

This table reports the OLS regression analysis of firm performance. The dependent variable is *Industry-adjusted ROA* for Model (1) and (2) and *Tobin's Q* for Model (3) and (4). *High Volatility Industry* is an indicator equal to one if a firm's industry volatility is above the 75th percentile of all industries and zero otherwise. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity and clustering at firm level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 12. Regressions with Instrumental Variable

	(1) *Discretionary accruals*	(2) *Restatement*	(3) *Irregularity*	(4) *Total compensation*	(5) *Cash intensity*	(6) *Equity intensity*
65-or-Older directors (%)	0.038*	0.819**	0.985***	0.615**	0.136**	-0.102*
	(1.82)	(2.09)	(5.59)	(2.50)	(2.11)	(-1.88)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	18,153	22,796	22,796	20,415	20,339	20,339

	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Forced turnover		*Repurchase/EBIT*	*Dividend/EBIT*	*Total payout/EBIT*	*Industry-adj ROA*	*Tobin's Q*
65-or-Older directors (%)	-0.775***	-0.791	0.173	-0.021***	-0.067*	-0.120***	-0.848**
	(-5.20)	(-0.82)	(0.41)	(-3.13)	(-1.70)	(-3.96)	(-2.06)
*65-or-Older directors (%) * Performance*	12.089***	2.150**					
	(2.76)	(2.39)					
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	12,508	12,508	20,795	19,463	20,830	22,796	22,796

This table presents excerpts of the second-stage estimation results of instrumental variable regressions of all the firm outcome variables. The first stage regression results are in Appendix Table A2. The instrument is the local old director pool. Model (1), (4)-(6) and (9)-(13) estimate a two-stage least square (2SLS) regression. Model (2), (3), (7) and (8) estimate a Probit instrumental variable regression using maximum likelihood estimation. *Performance* represents industry-adjusted ROA in Model (7) and market-adjusted stock return in Model (8). The control variables are omitted for brevity. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity and clustering at firm level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 13. Event Studies

Panel A: Announcement Effects of Director Retirement Policy Changes

Event type	**Full sample**	**Clean sample**
1. Increase mandatory retirement age	51	35
2. Remove mandatory retirement age	21	9
3. Extend the exact retirement date (e.g. from "upon 72th birthday" to "upon the next annual meeting following 72th birthday"	11	8
4. Waive mandatory retirement age for certain directors	4	3
5. Grant the board the discretion to waive mandatory retirement age	2	2
6. Allow the board to appoint emeritus directors beyond mandatory retirement age	2	2
Total	91	59
Mean CAR	-0.907%***	-0.620%**
p-value	(<0.001)	(0.023)
Median CAR	-0.764%***	-0.685%***
p-value	(<0.001)	(0.001)

Panel B: Announcement Effects of Old Independent Director Appointments

	(1) Full sample	(2) Non-proxy sample	(3) Clean sample
Mean CAR	-0.205%**	-0.187%*	-0.197%*
p-value	(0.023)	(0.065)	(0.078)
Median CAR	-0.229%***	-0.212%**	-0.217%**
p-value	(0.008)	(0.035)	(0.042)

Appendices

Table A1. Variable Definitions

Variable	Definition
Firm characteristics	
ROA	Ratio of operating income before depreciation to total assets. We make industry adjustment by subtracting the industry mean ROA from raw ROA where specified. (Compustat)
Tobin's Q	Ratio of market value of assets to book value of assets. (Compustat)
Log market cap	The natural logarithm of the market value of equity. (Compustat)
RND	Ratio of research and development expenses to net sales. (Compustat)
Volatility	Standard deviation of monthly stock returns during the last five fiscal years. (CRSP)
Governance characteristics	
65-or-Older directors (%)	Ratio of the number of independent directors aged 65 or above to the total number of independent directors. (ISS)
Eindex	The Bebchuk et al. (2009) entrenchment index of six takeover defenses. (ISS)
Board size	The number of directors sitting on the board. (ISS)
Independence	The percentage of directors who are independent. (ISS)
Director ownership	The aggregate percentage of shares owned by all directors. (ISS)
Duality	An indicator equal to one if CEO is also the chairman of the board, and 0 otherwise. (ISS)
Busy board	The percentage of independent directors who hold 3 or more directorships in the ISS universe firms. (ISS)
Indep. blockholder	An indicator equal to one if at least one independent director is a blockholder and 0 otherwise. Blockholders are investors with at least 5% share ownership in the firm. (ISS)
Indep. director tenure	The percentage of independent directors who have at least 15 years of tenure. Tenure is measured as the number of years between current year and the year when the director's board service began. (ISS)
Cooption	The percentage of directors who are appointed after the current CEO assumes office.
Outcome variables	
Attend_less75_pct	An indicator equal to one if an independent director attended less than 75% of a firm's board meetings, and zero otherwise. (ISS)
Number of committee memberships	The number of committee memberships on the audit committee, compensation committee, nominating committee and governance committee. (ISS)
Committee chairman	An indicator variable equal to one if a director is the chairman of any committee, and zero otherwise. (ISS)
Audit and compensation committee member	An indicator variable equal to one if a director sits on both the audit committee and the compensation committee, and zero otherwise. (ISS)
Audit or compensation committee chairman	An indicator variable equal to one if a director is the chairman of the audit committee or the compensation committee, and zero otherwise. (ISS)
Discretionary accruals	Performance-adjusted discretionary accruals, defined as the residual from a modified Jones model (Jones, 1991): $\frac{TA_{i,t}}{Asset_{i,t-1}} = \beta + \beta\frac{1}{Asset_{i,t-1}} + \frac{\Delta SALE_{i,t}-\Delta AR_{i,t}}{Asset_{i,t-1}} + \frac{PPE_{i,t}}{Asset_{i,t-1}} + ROA_{i,t-1} + \mu_{i,t}$ We estimate the model within each fiscal year and Fama-French 48 industry and require at least 10 observations to perform each estimation. Variable definitions follow Kothari et al. (2005). (Compustat)
Restatement	An indicator equal to 1 if the firm subsequently restated the financial statements for that fiscal year, and 0 otherwise. (GAO and Audit Analytics)
Irregularity	An indicator equal to 1 if the firm subsequently restated the financial

	statements for that fiscal year and the restatement is classified as irregularity, and 0 otherwise. (GAO and Audit Analytics)
Total compensation	The natural logarithm of the dollar value of the CEO's total annual compensation. (Execucomp)
Cash intensity	The proportion of total annual CEO compensation that comes from cash. This is the amount of total current compensation (salary and bonus) scaled by total compensation. (Execucomp)
Equity intensity	The proportion of total annual CEO compensation that comes from option grants and stocks. This is the value of annual option awards plus the value of annual stock grants scaled by total compensation. (Execucomp)
Forced turnover	An indicator equal to one if a firm experiences a forced CEO turnover, and zero otherwise.
Repurchase/EBIT	The amount of repurchases scaled by earnings before interest and taxes. We compute share repurchases as the purchase of common and preferred stock minus any reduction in the value of the net number of preferred stocks outstanding. If the repurchase amount is less than 1% of the previous year's market capitalization, the repurchase amount is set to zero. (Compustat)
Dividend/EBIT	The total amount of dividends declared on the common/ordinary capital of the firm, scaled by earnings before interest and taxes. (Compustat)
Total payout/EBIT	The sum of repurchases and dividends, scaled by earnings before interest and taxes. (Compustat)
Acquirer CAR	Cumulative abnormal returns over the 5–day window (-2, 2), where day 0 is the announcement date. To calculate expected returns, we estimate a market model using the value-weighted market return over the 200-day period (-11, -210). (SDC and CRSP)

Table A2. First-stage Estimates of 2SLS regressions		
	(1)	(2)
Local old director pool	0.010***	0.009***
	(3.11)	(2.90)
Log market cap	-0.005*	-0.005**
	(-1.85)	(-2.00)
RND	-0.215***	-0.214***
	(-3.44)	(-3.44)
Volatility	-0.215***	-0.193***
	(-3.09)	(-2.84)
Eindex	-0.000	-0.000
	(-0.04)	(-0.06)
Board size	0.002	0.002*
	(1.63)	(1.69)
Independence	-0.095***	-0.098***
	(-3.74)	(-3.92)
Director ownership	0.190**	0.182**
	(2.08)	(2.02)
Director ownership^2	-0.213	-0.206
	(-1.19)	(-1.17)
Duality	0.009	0.009*
	(1.55)	(1.65)
Busy board	0.091***	0.096***
	(3.81)	(4.07)
Indep. blockholder	-0.037**	-0.035**
	(-2.35)	(-2.26)
Indep. director tenure	0.337***	0.337***
	(17.74)	(18.26)
Cooption	-0.020**	-0.021**
	(-2.25)	(-2.37)
Industry fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Cragg-Donald Wald *F*-stat (Weak identification test)	48.61	40.46
N	22,796	22,796
Adjusted R^2	0.174	0.178

This table reports the specific first-stage estimates for the 2SLS regressions from Table 12. Model (1) corresponds to Model (12) in Table 12 and Model (2) corresponds to Model (13) in Table 12. The dependent variable is *65-or-Older directors (%)* and is regressed against the local old director pool and all second-stage controls. *Local old director pool* is the natural logarithm of the number of old executives from firms headquartered in the same state as the sample firm. The number of old executives of is the sum of all executives from Execucomp and all directors from ISS with identifiable age which is 65 or higher. The null hypothesis of weak instruments is rejected. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity and clustering at firm level. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table A3. Sample of Old Independent Directors Appointment Announcements	
Directors who were 65 or older at first appearance on a firm's board in ISS	**2,213**
Appointment news is not available in the Factiva database	747
Appointments by dual class firms	178
Appointment news are several years earlier than first appearance in ISS (probably appointment age below 65) or later than first appearance in ISS (probably reelection of incumbent directors)	39
Age is marginally below 65 in news if news contains information on age (mostly for first appearance at the age of 65 or 66)	86
Data around appointment is not available in CRSP/ISS/COMPUSTAT	36
Full sample	**1,127**
Directors are elected in annual shareholder meetings	154
Non-proxy sample	**973**
Multiple appointment of directors	200
Dividend/repurchase/stock split	36
Top officer turnover (CEO/CFO/Chairman/President/Vice President)	22
Merger/acquisition/spinoff	15
Earnings announcement	13
Proxy contest	5
Executive pay	2
Raising capital	1
Strategic plan to cut expenses	1
Separation of CEO and Chairman titles	1
Move headquarters	1
Clean sample	**676**