Do Independent Director Departures Predict Future Bad Events?

Rüdiger Fahlenbrach
Ecole Polytechnique Fédérale de Lausanne (EPFL), Swiss Finance Institute, and ECGI

Angie Low
Nanyang Business School, Nanyang Technological University, Singapore

René M. Stulz
Fisher College of Business, The Ohio State University, NBER, and ECGI

Following surprise independent director departures, affected firms have worse stock and operating performance, are more likely to restate earnings, face shareholder litigation, suffer from an extreme negative return event, and make worse mergers and acquisitions. The announcement returns to surprise director departures are negative, suggesting that the market infers bad news from surprise departures. We use exogenous variation in independent director departures triggered by director deaths to test whether surprise independent director departures cause these negative outcomes or whether an anticipation of negative outcomes is responsible for the surprise director departure. Our evidence is more consistent with the latter. (*JEL* G30, G34)

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Corporate governance reforms following the corporate scandals at the turn of the century heavily focused on increasing the representation of independent directors on boards. Listing standards on U.S. exchanges were changed to

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require boards to have a majority of independent directors. Many countries have introduced requirements on the percentage of independent directors on boards, as well as on the fraction of independent directors on the nominating committee, compensation committee, and audit committee (see IOSCO 2007).

Although governance activists have been strong proponents of having more independent directors on boards, the theoretical and empirical academic literature has been more ambiguous. The theoretical literature points to costs and benefits of having more independent directors on a board. In particular, independent directors may have weaker incentives to expend effort, may have higher information acquisition costs, and may be more dependent on CEO information (see, e.g., Fama and Jensen 1983; Adams and Ferreira 2007; Harris and Raviv 2008; Kumar and Sivaramakrishnan 2008).[1] Recent empirical papers on the structure and role of the board of directors have found evidence that firms structure their boards according to their monitoring and advising needs and take the costs and benefits of independent directors into account (e.g., Boone et al. 2006; Coles, Daniel, and Naveen 2008; Duchin, Matsusaka, and Ozbas 2010; Linck, Netter, and Yang 2008).

Most papers in the literature examine average board characteristics, such as the fraction of independent directors or specific types of independent directors and their relation to corporate performance and policies. As a result, the literature has mostly focused on the determinants of board structure from the firm's perspective, that is, the demand side of the director labor market.

However, board structure is also determined by director willingness to serve on the board, and whether a director stays on the board depends on his own evaluation of the benefits and costs of remaining in the position. These supply side considerations are also important in the director labor market, in general, but have received relatively less attention in the literature.[2] One major consideration is director reputation. A director may choose to quit his directorship to protect his reputation if he expects adverse information will be subsequently disclosed by the firm or, more generally, if the costs of continuing the board service outweigh the benefits (for example, in the presence of a fundamental disagreement between the director and the CEO or management

[1] It is therefore possible for firm performance to fall as the board becomes more independent. Though some papers find that firm performance increases with board independence (see, for instance, Black and Kim 2012; Aggarwal et al. 2009; Dahya, Dimitrov, and McConnell 2008), other papers find no relation between board independence and performance (see, for instance, Bhagat and Black 2002). Duchin, Matsusaka, and Ozbas (2010) find that performance falls following the forced addition of outside directors after the Sarbanes-Oxley Act (SOX) for firms in which outside directors face high information acquisition costs.

[2] Early exceptions include Vancil (1987), who examines the cost-benefit analysis executives carry out for additional board seats, and Booth and Deli (1996), who analyze the supply of CEO directors as a function of firm and CEO characteristics. Kaplan and Reishus (1990) offer a labor demand and supply-side explanation of their finding that outside board seats of CEOs and their own firm performance positively correlate. Recent empirical papers also examine the cost-benefit analysis independent directors make when they take on additional directorships or carry out their directorship responsibilities (e.g., Fahlenbrach, Low, and Stulz 2010; Masulis and Mobbs 2014). Knyazeva, Knyazeva, and Masulis (2013) explicitly measure the potential supply of independent directors by using geographic variation in the director labor market.

team about strategy and tactics). Alternatively, a director may quit because he has better opportunities elsewhere, but his departure may decrease the quality of board monitoring and make it more likely for the firm to experience events that destroy shareholder wealth.

In this paper, we focus on the supply side of the director labor market and ask what drives director departures and what happens to corporate policies and performance after surprise director departures. More precisely, we investigate the following questions: What are the main determinants of independent director departures, in general? Can we isolate situations in which departures are surprising, that is, not explained by retirements, director outside commitments, or firm firing? Are these surprise departures followed by negative performance and adverse events at the firms from which directors depart? If so, are subsequent negative performance and adverse events caused by the departure of the independent director, or could they be the cause of the surprise departure? Our analysis helps shed light on the market for independent directors and on the cost-benefit analysis that underlies the decision of an independent director to continue serving on a board.

We first examine under what general circumstances independent directors leave firms. Directors can leave for many reasons, including retirement, time constraints, access to better opportunities, a desire to no longer be associated with the firm, or being forced out by management and shareholder pressure (e.g., Asthana and Balsam 2010; Del Guercio, Seery, and Woidtke 2008; Gilson 1990; Yermack 2004). Using Cox proportional hazard models, we model expected director departures, that is, departures that can be predicted by director and firm characteristics. We find that independent directors are more likely to turn over if they are of retirement age (70 years old and above), if they had attendance problems in prior years, if they were recently appointed to boards of other firms, and if they were not on the key subcommittees of the board. With respect to firm characteristics, we find that independent directors are more likely to leave if the firm had poor stock and accounting performance, if uncertainty is higher, if the firm is larger, and if the CEO left during the prior year.[3]

We find that most of the director departures are expected and that retirement explains a significant portion of the departures. However, a sizeable portion of director departures cannot be explained by the model. We therefore create a proxy for unexpected or surprise director departures, based on our model of expected departures. With surprise director departures, we seek to capture the departures of directors that are not motivated by reasons such as old age, work commitments, or involuntary turnover. We create three measures of surprise director departures based on director and firm characteristics. The first refers

[3] Our finding that CEO and director departures correlate is consistent with a larger literature that examines the personal ties between directors and CEOs and assesses the CEO's influence on the nomination process (e.g., Coles, Daniel, and Naveen 2008; Fracassi and Tate 2012; Shivdasani and Yermack 1999).

to any independent director departure prior to the age of 70.[4] Our second and third measures are based on Cox proportional hazard regressions. For the second measure, we specify a model of expected director turnover using director characteristics to capture director retirements and independent work commitments. We then define an unexpected director departure as a departure that happens even though the survival function from the Cox regression for serving one more year as a director is above 75%. For our third measure, we repeat the procedure for the second measure, but include both director and firm characteristics in the Cox regression. The firm characteristics include past firm performance to model involuntary director turnover due to poor past firm performance. We also take into account the possibility that a director could be forced out independently of firm characteristics by using an indicator variable for directors with poor attendance.

We then investigate whether unexpected independent director departures are associated with poor future performance or bad events. Our results show that following surprise director departures, affected firms have significantly worse stock and accounting performance. We also show that adverse events are more likely to occur in firms in the 12 months after the surprise director departures. Firms are more likely to incur earnings restatements, federal class action securities fraud lawsuits, mergers and acquisitions with poor announcement returns, and months with high negative skewness after surprise director departures. Furthermore, the announcement returns to surprise director departures are negative, suggesting that the market infers bad news from surprise departures. In contrast, we do not find a higher probability of any of these adverse events after expected director departures.

Our results are potentially consistent with two alternative hypotheses. On the one hand, unlike expected departures, which firms can anticipate and prepare for, unexpected departures of valuable directors leave vacancies on boards that may be difficult to fill on short notice. The vacancies may affect the functioning of the board, and the firm could make poor decisions that negatively affect firm performance and judgment. Under this scenario, the surprise departure of the independent director causes the adverse event. On the other hand, an independent director may anticipate adverse firm events and step down ahead of them to protect his reputation or to avoid an increased workload.[5] Under

[4] The executive search firm Spencer Stuart reports in their 2009 Spencer Stuart Board Index publication (http://content.spencerstuart.com/sswebsite/pdf/lib/SSBI2009.pdf) that, in 2004, 77% of S&P 500 firms had a mandatory retirement policy for outside directors. For these firms, 88% set the mandatory retirement age at 70 or 72.

[5] For example, Fich and Shivdasani (2007) find that following a financial fraud lawsuit, the outside directors of the affected firm experienced a decline in the other board seats they held. Srinivasan (2005) finds that outside directors of firms that restate earnings lose reputational capital. Gilson (1990) documents fewer board seats for outside directors after having served on boards of companies that experience financial distress, and Coles and Hoi (2003) and Harford (2003) show that outside directors have fewer new directorships if the board supports actions that are against shareholders' interests. Further, directors benefit from sitting on boards of better performing firms. For example, Yermack (2004) and Ferris, Jagannathan, and Pritchard (2003) find that directors who sit on

this scenario, causation would be reversed: future bad events cause surprise director departures.[6]

We use independent director departures due to death to distinguish between the two scenarios. Departures due to deaths are unexpected exogenous turnovers, and it is implausible that the death of a director is related to an anticipation of adverse firm events. Hence, any adverse changes in firm performance or policies following the death of a director mean that the departure of the director causes the bad event. Our identification strategy is similar to the one used by Fee, Hadlock, and Pierce (2013), who wish to understand whether the arrival of a new CEO with certain characteristics causes corporate policy changes or whether anticipation of a changing firm environment causes the firm to change CEOs and policies.

We find that the coefficients on the instrumented surprise director departure variables cease to be significant when we use director deaths as an instrument in two-stage least-squares regressions predicting future bad events and performance. After exogenous surprise departures, firm operating performance does not deteriorate and adverse events are not more common. We therefore argue that our evidence shows that independent directors respond to incentives to leave boards when they anticipate the firm will perform poorly and/or to disclose adverse information (e.g., Yermack 2004).

Our results have important implications for understanding the market for independent directors and the usefulness of such directors. If independent directors have incentives to quit ahead of bad news, the benefit of having independent directors is reduced because directors with experience might leave when their contribution could be most important to the firm, namely, during times when the firm is struggling with adverse shocks.[7] Although clustered surprise departures are not frequent, our results indicate that such multiple surprise departures often are associated with greater incidences of subsequent bad events. Furthermore, boards often have greater difficulty replacing directors who unexpectedly depart. This means that when evaluating the benefits and costs of having independent directors, it is important to take into account that independent directors may find it valuable to leave a board when inside directors have incentives to work especially hard to resolve problems to insure the survival and recovery of the firm.

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the board of better performing firms are more likely to receive additional directorships in the future. Directors not only face a loss in reputation when they sit on boards of troubled firms but also face a significant increase in their workload. Vafeas (1999), for example, demonstrates that the frequency of board meetings increases following poor stock returns.

[6] According to the 2009 report by Corporate Board Member and PricewaterhouseCoopers, "What Directors Think," of the directors who resigned or are planning to resign from a board, 26% said they are leaving or planning to leave because of concerns due to personal liability and personal reputation.

[7] Several papers find that independent boards are particularly important in times of crisis or difficult decisions. See, for example, Weisbach (1988), who studies executive dismissal, Brickley, Coles, and Terry (1994), who study antitakeover device adoption, or Byrd and Hickman (1992), who study tender offers.

Our results also indicate that it is important to take into account the career and reputation concerns of independent directors in devising compensation packages for directors. Though reputation concerns often are viewed as an incentive for agents to exert effort, in the case of independent directors, such concerns may provide an incentive to quit instead of exerting greater effort. This potentially perverse impact of reputation concerns about effort incentives raises the question of whether compensation plans for directors can be effectively designed to make it financially more costly for directors to quit ahead of bad news.[8]

The literature on the determinants of director turnover and career concerns of independent directors is, surprisingly, limited. Yermack (2004) examines director turnover in a sample of Fortune 500 firms between 1994 and 1996 and finds that it is negatively related to the firm's stock return during the year of turnover and the previous year. Asthana and Balsam (2010) examine director turnover for a larger sample and also find that directors are more likely to leave after poor performance, if the firm pays directors poorly, and if the firm is riskier. A larger literature on CEO turnover relates to our work as some of the characteristics that determine CEO turnover also determine director turnover (e.g., poor accounting and stock performance prior to turnover and people being of retirement age).[9] The "death" identification strategy also has been used in several CEO turnover papers to determine the value of CEOs (e.g., Bennedsen, Pérez-González, and Wolfenzon 2010; Johnson et al. 1985; Jenter, Matveyev, and Roth 2015). Our paper complements that of Nguyen and Nielsen (2010), who use director deaths as an exogenous event to determine the value of independent directors.[10]

Our paper also contributes to the broader literature on director reputational concerns. Recent empirical papers examine how director reputational concerns affect their incentives to perform their roles as effective monitors (e.g., Jiang, Wan, and Zhao 2016; Masulis and Mobbs 2014). The theoretical literature has started to recognize the importance of director reputation effects as well. Levit and Malenko (2016), for example, model the labor market for directors and show that directors' reputation incentives play an important role for both directors' actions and the structure of corporate boards. The model of Song and Thakor (2006) also takes the career concerns of directors into account and shows

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[8] An emerging literature analyzes the determinants and consequences of vesting conditions of equity grants to CEOs (both time-vesting and performance-vesting conditions). Examples using large hand-collected samples include Bettis et al. (2010, 2015) and Gerakos, Ittner, and Larcker (2007). Performance-vesting awards to directors tend to be rare to avoid any misconceptions between compensation and directors' fiduciaries responsibilities (see, e.g., Pakela and Sinkular 2014). But it would be interesting, albeit beyond the scope of this paper, to collect a sample of vesting conditions of equity grants to directors and to understand whether time-based vesting equity grants impact directors' decision to leave the board.

[9] Examples include Denis and Denis (1995), Huson, Parrino, and Starks (2001), Huson, Malatesta, and Parrino (2004), Murphy and Zimmerman (1993), or Jenter and Kanaan (2015).

[10] Other researchers have used deaths to examine the importance of blockholders (e.g., Slovin and Sushka 1993; Nguyen and Nielsen 2010).

that they affect board-level decisions. Levit's (2012) model of the optimal structure of boards features directors' reputation concerns as well. Our paper provides evidence that reputational concerns may affect directors' decision to withdraw their labor supply.

Several recent papers examine situations where directors oppose management through publicly-announced departures. Agrawal and Chen (2011) examine 181 director resignations in 80 small firms in which the director resigned amid dispute. Marshall (2010) examines a sample of 278 director resignations after boardroom disputes. Ma and Khanna (2016) and Jiang, Wan, and Zhao (2016) provide evidence about Chinese boardroom disputes. Dewally and Peck (2010) analyze 52 announcements of director departures in which the directors publicly announce their resignations. They find that younger directors who are active professionals are more likely to publicly announce their departures at poorly performing firms. Brown and Maloney (1999) document that independent directors are more likely to depart prior to bad acquisitions. Bar-Hava et al. (2013) examine whether directors truthfully state the reason for departure and find that they generally do not.

Our study examines instead whether independent director departures have causal effects on firm events or whether bad future firm events are responsible for director departures for a broad and representative sample of firms. Unlike papers which specifically examine boardroom disputes which are made public, we provide evidence to show that seemingly innocuous director departures have important information content about future firm events. Masulis and Mobbs (2015) find that firms with independent boards that have strong reputation incentives are less likely to suffer from bad events. Two recent working papers, Jagannathan, Krishnamurthy, and Spizman (2015) and Dou (2015), use the evidence provided in our paper as a starting point and ask how much directors who surprisingly leave their firms are punished by the labor market.

Finally, Nguyen and Nielsen (2010) examine the stock market reaction to the announcement of 108 sudden director deaths. They find that the mean announcement return to these deaths is negative and significant and the median announcement return is indistinguishable from zero. Note that our results are not necessarily inconsistent with theirs. In further tests they show that the negative announcement return is driven by situations in which the deceased director was particularly important for the board. These are the situations in which it is most uncertain at announcement whether another suitable director can be found, triggering a negative announcement return.

1. Data Sources and Construction of the Sample

Our initial sample is formed by matching Standard and Poor's Compustat database with a database of directors obtained from the RiskMetrics (formerly IRRC) Directors Database. We follow each director through time from one

proxy statement to the next.[11] If a director is no longer listed in the subsequent proxy statement, he is defined as having left the board. Nondeparting directors are those who continue to be listed in the subsequent proxy statement. Since we do not have the exact date of departure for all departures, we define the date of the subsequent proxy statement as the departure or event date for much of our analysis.[12] Our identification of departures depends on comparing adjacent proxy statements. We therefore delete observations for which we cannot find any subsequent proxy statements or for which the next proxy statement is more than 450 days away. We further require that the firm has nonmissing values for all the control variables we use in the Cox regressions and a link to the Center for Research in Security Prices (CRSP) database in the fiscal year-end just prior to the event date. Firm-years with more than five directors departing are deleted as these departures are likely to result from corporate control events. We further require that the director is neither an inside director nor a linked director as defined by RiskMetrics. RiskMetrics provides information on director tenure, which allows us to estimate the Cox proportional hazard regressions on director time to turnover. We also delete firm-year observations where there are missing values for the director characteristics used in the Cox regressions for any of the directors. The final sample consists of 95,690 independent director-firm-years (14,428 firm-proxy years) with 23,035 independent directorships, of which 7,154 end with a departure while the firm is in our sample period. The sample covers 2,282 distinct firms, 16,497 distinct directors, and spans the period from 1999 to 2010.

We obtain accounting data from Compustat and stock return data from CRSP. RiskMetrics is used to obtain information on director characteristics and board characteristics. S&P's Execucomp database is used to gather information on CEO ownership and CEO turnover. All continuous variables are winsorized at the 1% level in both tails.

Data on accounting restatements come from two sources. For the period 1999 to 2006, the data come from the list of restatements compiled by the U.S. Government Accountability Office (GAO). Starting in 2000, we supplement the data with information on restatements from Audit Analytics. Data on firms that have been named in federal class action securities fraud lawsuits come from the Stanford Law School Securities Class Action Clearinghouse (securities.stanford.edu). The Clearinghouse maintains an index of filings since the passage of the Private Securities Litigation Reform Act of 1995. SDC

[11] There is a change in the director identifier in RiskMetrics in 2004, due to a change in the data collection process used by RiskMetrics. In addition to the director identifiers provided by RiskMetrics, we use a name- and age-matching algorithm to match directors across the sample period.

[12] We have announcement dates of director departures for a subset of our sample, because changes in disclosure rules enacted in August 2004 require firms to announce director departures via 8-K statements. In about half of the cases, the actual departure date is announced a few months or days prior to the proxy date. For the other half of departures, firms either fail to file the required document or announce the director departure in the proxy statement itself. Therefore, our determined departure date is the upper bound on the actual departure date. For brevity, we also refer to the subsequent proxy date as the event date for nondeparting directors.

Platinum is the data source for announcement dates and deal characteristics of mergers and acquisitions (M&A) undertaken by sample firms. We obtain information on director departure announcement dates from the Director and Officer Changes database provided by Audit Analytics for the period 2005-2010. For the sample of director deaths, we follow the procedure in Huang (2013) and manually search Factiva and Edgar 8-K filings. In addition, we use keyword searches in Google (e.g., "director," "board," "passed away," "deceased"). Our sample contains 124 independent director deaths.

Table 1 describes summary statistics for our sample. The summary statistics for independent director characteristics in panel A are at the director-firm-year level and are separated by whether the director is departing. The unconditional probability that an independent director departs in a director-firm-year is 7.5%, with an average tenure of 8.7 years as director. The average tenure is similar to the average tenure reported by other studies (e.g., Fracassi and Tate 2012). The firm characteristics in panel B are at the firm-year level, and are split by whether at least one independent director departs in a firm-year. 36.8% of firm-years are affected by at least one independent director departure.

Panel A shows that the median tenure for a departing director is longer than that of a remaining director (9 versus 7 years). The typical departing director is older than 69, implying that directors are staying on beyond the age of 65, the typical retirement age for CEOs (see, e.g., Warner, Watts, and Wruck 1988; Huson, Malatesta, and Parrino 2004; Kaplan and Minton 2012). The high percentage of departing directors who are aged 69 and older also indicates that most of the departures are due to routine retirements. A small percentage (1.7%) of director departures is due to death. Using the RiskMetrics data set, we are able to determine whether the director is a CEO or non-CEO executive of another firm in our database at the time of the event date or departure date; 11.8% of the departing directors are current CEOs of another firm, and 15.9% of the nondeparting directors are current CEOs. Similarly, departing directors are less likely to be current non-CEO executives than nondeparting directors. Departing directors are significantly more likely than nondeparting directors to carry the designation "Retired" in RiskMetrics, which is not surprising given their age at departure. Somewhat surprisingly, membership on the board's subcommittees does not vary much between departing and nondeparting directors. Departing directors are significantly less likely to be appointed to other boards. One plausible explanation for this result is that it is related to the age of departing directors and to the mandatory retirement policy of many firms. Finally, departing directors are significantly more likely to attend less than 75% of the meetings in the last year of their tenure, which we define as an attendance problem—the percentage of departing directors with attendance problems is at 3.9% more than double the percentage of nondeparting directors with attendance problems (1.6%).

Table 1
Summary statistics

A. Independent director characteristics

	Nondeparting directors (n = 88,536)		Departing directors (n = 7,154)	
	Mean	Median	Mean	Median
Tenure (years)	8.52	7.00	10.96***	9.00***
No. of other directorships	1.02	1.00	0.97***	0.00***
Age indicator (64-66) (%)	15.23	–	8.75***	–
Age indicator (67-69) (%)	13.73	–	10.11***	–
Age indicator (above 69) (%)	14.37	–	43.56***	–
Director death (%)	0.00	–	1.73***	–
Current CEO director (%)	15.87	–	11.83***	–
Current executive director (%)	10.74	–	7.38***	–
Retired (%)	26.27	–	42.91***	–
Audit committee member (%)	52.33	–	48.31***	–
Compensation committee member (%)	50.43	–	49.54	–
Nominating committee member (%)	42.30	–	41.45	–
Corporate governance committee member (%)	35.88	–	34.88*	–
Appointed to another firm (%)	4.47	–	3.93**	–
Attendance problem (%)	1.63	–	3.94***	–

B. Firm characteristics

	Nondeparture firm-years (n = 9,120)		Departure firm-years (n = 5,308)	
	Mean	Median	Mean	Median
Book assets	8,037.63	1,931.32	13,734.25***	3,434.50***
Market capitalization	6,380.95	1,889.39	8,601.30***	2,561.15***
Sales	4,867.97	1,613.51	7,076.84***	2,401.25***
Firm age (years)	27.31	20.00	32.56***	29.00***
Stock return (%)	13.16	6.45	9.72***	5.11**
Industry stock return (%)	1.53	0.67	2.06	2.58*
Return on assets (ROA) (%)	13.41	13.07	12.05***	11.72***
Return volatility (%)	2.87	2.55	2.70***	2.237***
CEO left indicator (%)	9.35	–	12.55***	–
CEO ownership (%)	2.82	0.39	1.65***	0.24***
Board size	9.00	9.00	10.29***	10.00***
% independent directors	67.33	70.00	73.42***	75.00***

The sample consists of 95,690 independent director-firm-years (14,428 firm-years) from 1999 to 2010. Data on board and director characteristics was obtained from the RiskMetrics directors database. Accounting data are from Compustat; stock return data are from CRSP; and CEO data are from Execucomp. Only independent directors are included; directors who are classified as employees or linked by RiskMetrics are excluded. Panel A shows director characteristics, split by whether the director departed in any given year. The statistics in panel A are at the director-firm-year level. Panel B shows firm characteristics, split by whether at least one independent director departed in a given firm-year. The statistics in panel B are at the firm-year level. The accounting data are taken from year −1, where year −1 is defined as the fiscal year ending just prior to the event date. Stock returns are buy-and-hold returns over year −1. Return volatility is the standard deviation of daily returns over year −1. The corporate governance data are taken as of the proxy statement prior to the event date. The Appendix contains detailed variable definitions. Two-sample t-tests (Wilcoxon-Mann-Whitney tests) were conducted to test whether the means (medians) of departure years are significantly different from nondeparture years. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

Panel B of Table 1 shows that there are more independent director departures in larger and older firms. Independent director departures are more frequent in firm years in which accounting and stock returns are poor. This fact mirrors results of studies on CEO turnover (e.g., Warner, Watts, and Wruck 1988; Kaplan and Minton 2012) and is consistent with the finding of Yermack (2004) for director departures in his sample. Independent director departures are less

frequent if the board is relatively small, the proportion of inside directors is relatively high, and CEO ownership is high.

2. Determinants of Independent Director Departures

In this section, we first examine the main determinants of director departures. We then use the regression model predicting *expected* director departures to identify *unexpected* director departures, that is, departures not explained by the model, that we will use in our subsequent analyses.

2.1 Determinants of director departures

Besides leaving because they have reached retirement age, directors are likely to depart from a board for several reasons, some of which are voluntary in nature, such as changes in a director's interests or opportunity set, and some of which might be due to firm performance or changes in firm leadership. CEO and board changes are more likely when firm performance is poor, either because of pressure from outside shareholders, board decisions, or pressure from lenders and other stakeholders. We include the following variables in the Cox proportional hazard regressions to capture both the director-specific and firm-specific determinants of turnover. As we have seen from Table 1, directors leave a board primarily because of retirements. We capture director retirements by including retirement age indicator variables. Directors also depart when they have outside commitments, such as full-time jobs in other firms or recent appointments to another firm (Linck, Netter, and Yang 2008). Therefore, we include indicator variables for whether the director is a CEO or non-CEO executive of another firm, whether the director is retired, and whether the director recently was appointed onto the board of another firm. Directors may also be fired due to poor firm performance. As Yermack (2004) points out, directors who sit on important board committees may be less likely to face disciplinary turnovers as these directors are more valuable to the firm due to their firm-specific knowledge in certain areas. We include indicator variables for whether the director sits on the four major board committees. We also include an indicator variable to indicate whether the director has poor board meeting attendance records. Finally, directors may leave when the CEO who appointed them leaves the firm as the directors may no longer feel inclined to serve under the new CEO or that the new CEO may want to make changes to the board (Farrell and Whidbee 2000). To account for this, we include an indicator variable for whether a CEO turnover occurred in the last 12 months.

To capture firm characteristics that might influence director turnover, we include firm size and firm age to control for the prestige of the board seat (Masulis and Mobbs 2015), stock return, industry stock return, and return on assets (ROA) to account for firm performance and stock return volatility to account for firm risk faced by the director (Fahlenbrach, Low, and Stulz 2010).

Finally, we also control for CEO stock ownership, board size, and board independence.

Table 2 shows results from the Cox proportional hazard regressions of the tenure of each independent director until his turnover (the event) or until the firm leaves the sample (the censoring event). Column 1 shows the proportional hazard regression where we include only director characteristics as explanatory variables, and Column 2 adds firm characteristics to the list of covariates. Table 2 reports hazard ratios, that is, exponentiated coefficients. The hazard ratios allow us to quantify the economic magnitudes of the explanatory variables. For example, in Column 2, holding the other covariates constant, each additional board seat held by a director reduces the annual hazard of turnover for that director by 1.9 percentage points (from 1 to 0.981).

By far the largest economic effect comes from the age indicator variable equal to one if the director is older than 69. Holding the other covariates constant, being older than 69 increases the annual hazard of director turnover in Column 2 by a factor of 3.212, or 221%. Controlling for other covariates, being a current executive decreases the hazard of director turnover, while being retired increases the hazard by approximately 16%. Interestingly, being a member of the audit, compensation, or nominating committee of the board decreases the hazard of turnover from, depending on the specification, 10% to 15%. If a director was appointed to the board of a different firm in the prior year, it increases the hazard of turnover by an economically significant 21%. The magnitude of the effect can potentially be explained by limits on the number of directorships an executive may have so that he has to choose between mandates. If a director had attendance problems in the prior year, the turnover hazard more than doubles, consistent with inefficient directors being forced out. As we are using director deaths as an instrumental variable in Section 5, we do not include director death as an explanatory variable in the Cox regressions. However, our main conclusion and results remain similar if we include death as an additional explanatory variable in the Cox regressions or if we estimate the Cox regressions excluding director departures due to death.

Turning to firm characteristics, Column 2 shows that poorer performance, both in terms of ROA and stock returns, increases the hazard of director turnover, which is consistent with the results reported by Yermack (2004) that directors of poorly performing firms are more likely to face disciplinary pressures to leave the board. Higher return volatility increases the hazard of turnover. There is a smaller chance of independent director turnover if CEO ownership is large, the board of directors is small, and if there are fewer independent directors to begin with.

A large increase in the hazard of turnover, 26.4%, is observed whenever the CEO of the firm steps down in the previous year, which is consistent with results reported by Hermalin and Weisbach (1988) and Farrell and Whidbee (2000). Coles, Daniel, and Naveen (2008), Fracassi and Tate (2012), and Lorsch and MacIver (1989) all show that the CEO potentially exerts influence on

Table 2
Cox proportional hazard regressions of director turnover

	(1)	(2)
No. of other directorships	0.998	0.981**
	0.009	*0.009*
Age indicator (64-66)	0.802***	0.789***
	0.036	*0.035*
Age indicator (67-69)	0.988	0.973
	0.042	*0.041*
Age indicator (above 69)	3.151***	3.212***
	0.098	*0.099*
Current CEO director	0.958	0.940
	0.038	*0.037*
Current executive director	0.842***	0.847***
	0.040	*0.040*
Retired	1.148***	1.157***
	0.033	*0.033*
Audit committee member	0.834***	0.882***
	0.020	*0.021*
Compensation committee member	0.851***	0.895***
	0.020	*0.021*
Nominating committee member	0.833***	0.851***
	0.034	*0.034*
Corporate governance committee member	1.098**	1.058
	0.048	*0.046*
Appointed to another firm	1.228***	1.210***
	0.074	*0.073*
Attendance problem	2.159***	2.198***
	0.123	*0.124*
Log (sales)		1.019*
		0.010
Log (firm age)		1.009
		0.018
Stock return		0.943**
		0.027
Industry stock return		1.001
		0.064
Return on assets		0.759**
		0.102
Return volatility (%)		1.061***
		0.012
CEO left indicator		1.264***
		0.043
CEO ownership (%)		0.985***
		0.003
Board size		1.016***
		0.004
% independent directors		1.009***
		0.001
Year fixed effects	Yes	Yes
Number of subjects	23,035	23,035
Number of turnovers	7,154	7,154
Number of observations	95,690	95,690

The table reports results from Cox proportional hazard models. The sample consists of 95,690 independent director-firm-years, which track 23,035 directorships. Only independent directors are included; directors who are classified as employee or linked directors by RiskMetrics are excluded. The time variable is director tenure in years until turnover (the event) or until the firm quits the sample. The status or event variable is independent director turnover. Of the 23,035 directorships, 7,154 directorships end in a departure during our sample period (experience the event); all other independent director tenures are treated as right-censored in the regressions. The accounting data were taken from year −1, where year −1 is defined as the fiscal year ending just prior to the date the time variable is measured. Stock returns are buy-and-hold returns over year −1. Return volatility is the standard deviation of daily returns over year −1. The corporate governance data were taken from the proxy statement prior to the date at which the time variable is measured. The Appendix contains detailed variable definitions. The table reports hazard ratios (exponentiated coefficients). Standard errors, clustered at the director-firm level, are reported in italics. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

the selection of board members and seeks independent directors with some personal ties or similar views. Our result that director turnover is higher after CEO turnover is consistent with this literature in that a new CEO may not have personal links to existing directors and may want to appoint directors friendly to him, starting his own "coopted" board and building his network. Overall, our results suggest that firm characteristics affect the hazard of turnover, but the economic magnitude of these effects is not large compared to the retirement age threshold. Most directors stay on the board until mandatory retirement policies force them out. Nominating committees know these dates well in advance and can plan for an orderly succession.

It is possible that large equity grants to directors, possibly with performance-vesting conditions or long time periods until vesting could provide a retention mechanism for directors and make director turnover less likely.[13] Pakela and Sinkular (2014) mention that performance-vesting grants to directors are rare, but time-vesting conditions seem to be common. We regrettably do not have data on the unvested portion of director equity grants to formally test this hypothesis. Our data only feature the overall equity ownership of each director. In unreported regressions, we include the director equity ownership in the turnover regressions (two different specifications with percentage ownership and log dollar equity ownership). The coefficient on the log dollar equity ownership of the director is negative, which suggests that there is a lower probability of director turnover if director dollar equity ownership is larger. Percentage equity ownership is, like in Yermack (2004), unrelated to director departure.[14]

2.2 Measures of unexpected departures

Our subsequent analysis requires a measure of *unexpected* independent director turnover, that is, director turnover that cannot be predicted using information about the director and the firm known at the time of turnover. One approach would be to rely on newspaper articles reporting on director departures and the reasons for departure. However, such an approach is infeasible as news media rarely report on director departures and even if they do, the reasons for departures are seldom given unlike in the CEO turnover literature (Yermack 2004). Therefore, relying on newspaper articles potentially biases the results as departures of the best known and most important directors are more likely to be written about than other departures.

The second approach would be to collect disclosures of director departures and to evaluate the reasons given by directors for their departure in 8-K reports. However, prior to 2004, departures of directors were only disclosed in the 8-K

[13] Bettis et al. (2010, 2015) show that the performance-vesting and time-vesting conditions of CEO equity grants have become more complex in recent years and can affect managerial decisions.

[14] The conclusions of our paper remain similar when we base our measures of surprise departures on the Cox specifications controlling for either director percentage ownership or dollar ownership.

reports for departures due to disagreement and only if the departing director explicitly requested that the nature of the disagreement with the firm be publicly disclosed (see Agrawal and Chen 2011 for details). With the new SEC ruling (release no. 34-49424, Additional Form 8-K Disclosure Requirements and Acceleration of Filing Date), firms are required to disclose director departures systematically in 8-K reports since August 2004. Hence, if we used these disclosures, we would lose half of the time series available to us. Furthermore, Bar-Hava et al. (2013) argue and provide evidence that independent directors have incentives not to disclose the true reasons for their departure in 8-K reports, which limits the usefulness of the disclosures.

In the following analyses, we use our empirical models of director departures in Table 2 to construct measures of unexpected director departures. Since we are interested in departures unrelated to routine retirements, and given the very strong effect of the director age indicator variable (above 69) on the hazard of turnover, our first measure of unexpected turnover is defined as any turnover that happens prior to the director turning 70 (surprise departure measure 1). While this measure is likely to be noisy, it has some appeal because of its simplicity.[15] Our second measure is based on the Cox proportional hazard regression in Table 2, Column 1 (surprise departure measure 2). For each director-firm-year observation, we calculate the survival function that measures the probability that the director will stay an additional year on the board. If this function is higher than 75%, but the director nevertheless steps down, we classify his departure as unexpected. Surprise departure measure 3 is defined similarly, but substituting the Cox proportional hazard model in Column 1 of Table 2 by the model in Column 2. Expected independent director departures are all departures not classified as surprise departures. The threshold of 75% is arbitrary. We repeat all outcome regressions using thresholds of 50% and of 80%. The results are quantitatively and qualitatively similar to what we report with a 75% threshold.

In Table 2, we see that poor stock and operating performance predicts director turnover. Therefore the Cox model in Column 2 of Table 2 predicts expected departures of directors due to disciplinary firing of directors when firm performance is poor.[16] Hence, measure 3, as compared to measure 2 should take into account disciplinary turnover of directors, that is, directors fired due to poor firm performance would be classified as expected under measure 3. In unreported results, we compare the stock and operating performance of firms with at least one surprise director departure under measure 3 and firms

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[15] The measure potentially could be improved on by declaring departures of directors younger than 70 nevertheless as expected if the director holds multiple board seats and leaves all boards at the same time. Such a clustered departure could indicate a departure that is unrelated to problems at a specific firm; for instance, it could occur because of health reasons or because the director took on a new job that prohibits directorships (e.g., a full-time political appointment in the U.S. government). A random check of our sample suggests that the incidence of these reasons for departure is very small.

[16] As Yermack (2004) points out, the threat of replacement for directors is more attenuated, since directors do not report to a higher authority that might fire them for poor performance. Although the firing of directors is unlikely, we do not rule out such a possibility and construct measure 3 to take into account disciplinary director turnover.

with all expected departures, where not all expected departures are due to retirements (directors aged 70 and older departing). We find that firms which experience a surprise director departure under measure 3 have slightly lower industry-adjusted stock returns and ROA compared to firms with only expected departures. We do not find a similar pattern with surprise measure 2, indicating that measure 3 indeed takes into account disciplinary director turnovers.[17]

Table 3 shows the yearly frequency of director departures that are classified as a surprise at the director-firm-year level (panel A) and the firm-year level (panel B). Of 7,154 independent director departures, 56.4% of the departures are classified as surprise departures using our first measure while 30.3% (29.9%) of the departures are classified as surprise departures using the second (third) measure.[18] Conditional on a departure, the correlation between the first and second measure of surprise departures is 55.4%. The correlation between the second and third measure is 91%. The departures are fairly spread out over the sample period.

Director departures or surprise departures are not clustered in any year. In particular, we do not observe a significant increase in director turnover around the implementation of the Sarbanes-Oxley Act in 2002. At the firm-year level (panel B), of 5,308 firm-years with at least one director departure, 62.3% of firm-years have at least one surprise director departure based on the first measure, 35.8% of firm-years have at least one surprise director departure based on the second measure, and 35.6% of firm-years have at least one surprise departure based on the third measure.

3. Independent Director Departures and Future Performance

In this section, we analyze whether expected and surprise departures of independent directors are related to future firm performance. We examine both stock and operating performance.

3.1 Stock returns

We analyze stock returns in firms with and without independent director departures using a calendar-time portfolio approach. Each month, we sort firms into two portfolios based on whether at least one independent director departs. Firms are added into the assigned portfolio in the month after the departure

[17] We only capture the forced director turnover that is related to overall firm-performance. Poor director-specific performance or behavior, which is difficult to observe or measure, could also lead to involuntary turnover. We attempt to control for director-specific inefficiency by including the attendance problem indicator variable but to the extent that this variable does not fully capture all aspects of director-specific poor performance, we would classify such turnovers as surprise departures. However, our results are unlikely to be driven by the surprise departure of poorly performing directors as under this alternative, one would expect firm performance to improve after the inefficient director has been forced out. We test and ultimately reject this hypothesis.

[18] A survival function cutoff of 80% would reduce the surprise departures under both the second and third measures to 24%, and a cutoff of 50% would increase the surprise departures under both measures to 52%.

Table 3
Frequency of departures

A. Director-firm-year observations

				Conditional on depart = 1		
Event year	No. of obs	# Depart	% Depart	% Sur dep 1	% Sur dep 2	% Sur dep 3
1999	6,492	510	7.9%	48.4%	18.6%	19.2%
2000	7,155	608	8.5%	53.8%	23.7%	23.0%
2001	7,648	656	8.6%	54.9%	27.0%	26.8%
2002	7,384	586	7.9%	54.4%	27.6%	27.5%
2003	7,815	665	8.5%	62.1%	31.1%	29.9%
2004	8,090	654	8.1%	60.9%	27.2%	26.6%
2005	8,249	615	7.5%	58.7%	32.4%	32.2%
2006	8,058	554	6.9%	56.5%	34.3%	32.3%
2007	7,753	601	7.8%	60.4%	32.6%	32.8%
2008	7,941	503	6.3%	53.9%	36.8%	36.8%
2009	9,450	602	6.4%	57.8%	39.2%	39.9%
2010	9,655	600	6.2%	53.0%	33.7%	32.5%
Total	95,690	7,154	7.5%	56.4%	30.3%	29.9%

B. Firm-year observations

				Conditional on depart = 1		
Event year	No. of obs	# Depart	% Depart	% Sur dep 1	% Sur dep 2	% Sur dep 3
1999	1,064	376	35.3%	55.6%	22.9%	23.4%
2000	1,173	444	37.9%	60.8%	27.9%	27.5%
2001	1,255	464	37.0%	60.6%	33.6%	33.0%
2002	1,189	421	35.4%	61.8%	34.0%	34.2%
2003	1,249	502	40.2%	69.3%	38.2%	36.9%
2004	1,246	487	39.1%	66.5%	33.7%	33.3%
2005	1,247	472	37.9%	63.8%	36.7%	36.4%
2006	1,189	439	36.9%	61.0%	37.6%	36.4%
2007	1,120	447	39.9%	65.1%	39.6%	39.8%
2008	1,104	357	32.3%	59.9%	42.3%	42.6%
2009	1,281	453	35.4%	62.0%	44.8%	45.9%
2010	1,311	446	34.0%	58.3%	37.2%	37.2%
Total	14,428	5,308	36.8%	62.3%	35.8%	35.6%

The table reports the yearly frequency of director departures and also the percentage of departures classified as surprise departures. The statistics in panel A are at the director-firm-year level, and panel B shows the frequency at the firm-year level. Surprise departure 1 is defined as departures of directors aged 69 and younger. Surprise director departures 2 (3) are departures in which the director survival function from the Cox proportional hazard model in Table 2, Column 1 (Table 2, Column 2) is higher than 75%, but the director nevertheless departs.

date or event date (when there is no departure) and held for 12 months or until the next proxy date occurs. Firm-years with inside or linked director departures are excluded as these director departures are likely to be associated with CEO and top executive turnover. This filter reduces the sample size to 11,151 firm-year observations. We calculate value-weighted and equal-weighted portfolio returns in excess of the 1-month risk-free interest rate. Table 4 shows the mean and median return for each portfolio as well as the return to a long-short portfolio in which firms with independent director departures are bought and firms without independent director departures are sold. Columns 1 and 2 show mean and median returns for value-weighted portfolios, and Columns 3 and 4 show the same statistics for equal-weighted portfolios.

Panel A compares the return of the independent director departure portfolio (portfolio 1), which includes both expected and unexpected departures, with

Table 4
Univariate analysis of portfolio returns

	Value-weighted portfolio ret (%)		Equal-weighted portfolio ret (%)	
	Mean	Median	Mean	Median
	(1)	(2)	(3)	(4)
Full sample				
A. Outside director departure				
Outside dir depart (Portfolio = 1)	0.3480	0.6278	0.7790*	1.0937**
No dir depart (Portfolio = 2)	0.4011	0.7941	0.8881**	1.1053**
Portfolio 1 - Portfolio 2	−0.0532	−0.0863	−0.1090	−0.1334**
B. Outside director surprise departure (1)				
Outside dir surprise depart (Portfolio = 1S)	0.2273	0.3744	0.8045*	1.2546**
Outside dir expected depart (Portfolio = 1E)	0.7284*	1.0034**	0.8921*	1.0744**
No dir depart (Portfolio = 2)	0.4413	0.8379	0.9468**	1.1053**
Portfolio 1S - Portfolio 2	−0.2140	−0.2492	−0.1424	−0.1798*
Portfolio 1E - Portfolio 2	0.2871	0.0177	−0.0547	−0.0469
Portfolio 1S - Portfolio 1E	−0.5011*	−0.1072	−0.0875	−0.0973
C. Outside director surprise departure (2)				
Outside dir surprise depart (Portfolio = 1S)	0.0138	0.5293	0.6322	0.9961*
Outside dir expected depart (Portfolio = 1E)	0.3948	0.9586	0.7787*	1.1340**
No dir depart (Portfolio = 2)	0.3666	0.7941	0.9191**	1.1053**
Portfolio 1S - Portfolio 2	−0.3527*	−0.5138**	−0.2869**	−0.3411***
Portfolio 1E - Portfolio 2	0.0283	−0.0049	−0.1404	−0.0654
Portfolio 1S - Portfolio 1E	−0.3810	−0.4639*	−0.1463	−0.0785
D. Outside director surprise departure (3)				
Outside dir surprise depart (Portfolio = 1S)	0.0146	0.6517	0.5756	0.9389
Outside dir expected depart (Portfolio = 1E)	0.3797	0.6873	0.8117*	1.1261**
No dir depart (Portfolio = 2)	0.3666	0.7941	0.9191**	1.1053**
Portfolio 1S - Portfolio 2	−0.3520	−0.4497**	−0.3435***	−0.3001***
Portfolio 1E - Portfolio 2	0.0131	−0.1349	−0.1074	−0.0235
Portfolio 1S - Portfolio 1E	−0.3651	−0.2927*	−0.2359*	−0.1158
Post-2004				
E. Outside director surprise departure (2)				
Outside dir surprise depart (Portfolio = 1S)	−0.0530	0.3197	0.5189	1.1537
Outside dir expected depart (Portfolio = 1E)	0.4135	1.0429	0.5559	1.0404
No dir depart (Portfolio = 2)	0.5812	0.8455	0.7037	1.2727
Portfolio 1S - Portfolio 2	−0.6342***	−0.3690***	−0.1848	−0.2902*
Portfolio 1E - Portfolio 2	−0.1677	−0.1947	−0.1478	−0.0862
Portfolio 1S - Portfolio 1E	−0.4664*	−0.3907	−0.0367	−0.0233
F. Outside director surprise departure (3)				
Outside dir surprise depart (Portfolio = 1S)	−0.0733	0.2593	0.4582	0.9898
Outside dir expected depart (Portfolio = 1E)	0.4086	0.9436	0.5854	1.1547
No dir depart (Portfolio = 2)	0.5812	0.8455	0.7037	1.2727
Portfolio 1S - Portfolio 2	−0.6544***	−0.5439***	−0.2455	−0.1896**
Portfolio 1E - Portfolio 2	−0.1726	−0.2137	−0.1183	−0.0156
Portfolio 1S - Portfolio 1E	−0.4819*	−0.3464	−0.1269	−0.1665

The table shows the analysis of stock returns in excess of the risk-free interest rate for different portfolios formed based on independent director departures. Firm-years are excluded if at least one employee director or linked director departs; this reduces the sample to 11,151 firm-years (5,908 firm-years for the period 2005 to 2010). In panel A, firms are sorted into two portfolios based on whether at least one independent director departs and are held in the respective portfolios for the subsequent 12 months. Portfolio 1 consists of firms in which at least one independent director departs, and portfolio 2 contains firms in which no independent director departs. In panels B to F, we split the portfolio of independent director departures into portfolio 1S, consisting of firms with at least one surprise director departure, and portfolio 1E, consisting of firms in which all director departures are expected. If in a given firm-year, both a surprise departure and an expected departure occur, we assign the firm-year to the surprise departure portfolio. Panels A to D are based on the full sample, and for panels E and F, the Cox proportional hazard models are performed only for years 2005 to 2010, and the surprise departures measures are defined accordingly based on the reduced sample. The Appendix contains the detailed definitions of the surprise departure variables. The table shows the monthly portfolio excess returns in percentage points, where the excess returns are calculated by subtracting from the portfolio returns the risk-free rate taken from the Fama-French monthly factor data set. t-tests and signed-rank tests are used to test whether the mean and median monthly portfolio returns are significantly different from zero. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

the return of the no director departure portfolio (portfolio 2). The portfolio that goes long firms in which independent directors depart and short firms in which no independent directors depart produces a monthly return of between minus 5 and minus 13 basis points. Only the median difference of the equal-weighted portfolio is statistically different from zero.

Panels B through D decompose firm-years with independent director departures further into firm-years with expected and unexpected departures using surprise departure measures 1, 2, and 3, respectively. We now form three portfolios. Portfolio 1S contains firm-years in which there is at least one unexpected independent director departure, while portfolio 1E contains firm-years in which all the departures are expected. Portfolio 2 is defined as before. Panels B through D of Table 4 show that the long-short strategy "portfolio 1S – portfolio 2" generates negative returns while the returns to the long-short strategy "portfolio 1E – portfolio 2" are essentially zero. The effects are weaker for the coarse measure 1, which is based on age alone. The results are statistically and economically significant for both value-weighted and equal-weighted portfolios using surprise departure measures 2 and 3. They are economically large with monthly returns of between minus 29 and minus 51 basis points, depending on the specification. The long-short strategy of portfolio 1S – portfolio 1E mostly generates a negative return, although it is not always significant.

To examine whether results hold in the post-2004 period after the new 8-K disclosure rulings regarding director departures were in effect, we re-estimate the Cox regressions using only the post-2004 sample and reconstruct the surprise departure measures as before. Panels E and F of Table 4 show the results. Although the results are based on a shorter time series, they are economically and statistically significant (in 6 out of 8 specifications), with the long-short portfolio that is long firms with surprise independent director departures generating excess returns of minus 18 to minus 65 basis points, depending on the specification.

One possible explanation for the performance differences documented in Table 4 is that they are driven by differences in the characteristics of the two portfolios. Researchers have identified several equity characteristics that explain differences in realized returns. In Table 5, we account for these differences by estimating the four-factor model of Carhart (1997) and Fama and French (1993). For brevity, we only show the alphas from the regressions and only show results for surprise departure measures 2 and 3. Columns 1 and 2 show value-weighted and equal-weighted results for the entire sample period, and Columns 3 and 4 show results for the post-2004 period.

Panel A of Table 5 indicates that the long-short portfolio that goes long firms with surprise independent director departures according to measure 2 and short firms with no independent director departures continues to underperform, even after the different characteristics have been taken into account. The estimated monthly alpha of the long-short portfolio is minus 40 basis points for the

Table 5
Monthly performance attribution regressions

	Full sample		*Post-2004*	
	Alpha (VW)	Alpha (EW)	Alpha (VW)	Alpha (EW)
	(1)	(2)	(3)	(4)
A. Outside director surprise departure (2)				
Outside dir surprise depart (Portfolio = 1S)	−0.0856	0.2903*	−0.2744*	0.1695
	0.167	*0.155*	*0.156*	*0.138*
Outside dir expected depart (Portfolio = 1E)	0.3265**	0.4062***	0.1971	0.2278*
	0.148	*0.122*	*0.204*	*0.124*
No dir depart (Portfolio = 2)	0.3182***	0.5494***	0.3695***	0.3614***
	0.088	*0.114*	*0.094*	*0.073*
Portfolio 1S - Portfolio 2	−0.4038**	−0.2590**	−0.6440***	−0.1919
	0.203	*0.112*	*0.174*	*0.158*
Portfolio 1E - Portfolio 2	0.0083	−0.1431	−0.1724	−0.1336
	0.179	*0.090*	*0.249*	*0.132*
Portfolio 1S - Portfolio 1E	−0.4132*	−0.1178	−0.4712*	−0.0580
	0.239	*0.125*	*0.265*	*0.166*
B. Outside director surprise departure (3)				
Outside dir surprise depart (Portfolio = 1S)	−0.0644	0.2308	−0.2932*	0.0982
	0.182	*0.151*	*0.158*	*0.134*
Outside dir expected depart (Portfolio = 1E)	0.3020**	0.4412***	0.1925	0.2626**
	0.148	*0.123*	*0.201*	*0.126*
No dir depart (Portfolio = 2)	0.3182***	0.5494***	0.3695***	0.3614***
	0.088	*0.114*	*0.094*	*0.073*
Portfolio 1S - Portfolio 2	−0.3826*	−0.3185***	−0.6627***	−0.2632*
	0.218	*0.111*	*0.177*	*0.152*
Portfolio 1E - Portfolio 2	−0.0162	−0.1081	−0.1770	−0.0989
	0.179	*0.090*	*0.246*	*0.134*
Portfolio 1S - Portfolio 1E	−0.3676	−0.2119*	−0.4853*	−0.1644
	0.255	*0.125*	*0.261*	*0.168*

The table shows results of calendar-time portfolio performance attribution regressions. Firm-years are excluded if at least one employee director or linked director departs; this reduces the sample to 11,151 firm-years (5,908 firm-years for the period 2005 to 2010). Columns 1 and 2 show the results for the entire sample. Columns 3 and 4 show the results for the post-2004 period, where the Cox proportional hazard model is performed only for years 2005 to 2010, and the surprise departures measures are defined accordingly based on the reduced sample. Firms are sorted into three portfolios based on whether there is at least one independent director surprise departure, all director departures are expected, or there is no independent director departures. The firms are held in the portfolio for the subsequent 12 months. Portfolio 1S consists of firms with at least one surprise director departure, and portfolio 1E consists of firms in which all director departures are expected. If in a given firm-year, a surprise departure and an expected departure occur, we assign the firm-year to the surprise departure portfolio. Portfolio 2 consists of firms with no departures of independent directors. The Appendix contains detailed definitions of the surprise departure variables. The table reports alpha estimates, in percent, from regressions based on a four-factor performance attribution model for the monthly excess returns of the various portfolios. The four factors are defined in Fama and French (1993) and Carhart (1997). The factors are the returns to zero-investment portfolios designed to capture market, size, book-to-market, and momentum effects, respectively. The coefficients on the four factors are not reported in the table to conserve space. Standard errors are reported in italics. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

value-weighted portfolio and minus 26 basis points for the equal-weighted portfolio. Both alphas are statistically significantly different from zero at the 5% level. There is no statistically significant alpha generated by the long-short strategy that buys firms with expected director departures. The results for the post-2004 period reported in Columns 3 and 4 are economically stronger for the value-weighted portfolio and weaker for the equal-weighted portfolio. We also test whether a long-short strategy that buys firms with surprise director departures and sells firms with expected director departures creates significant

alphas. We find statistically significant results for the value-weighted portfolio, both for the entire sample period and for post-2004. The economic significance is important, with 41 basis points underperformance for the entire sample period and 47 basis points underperformance for the more recent period.

Panel B, in which we use our surprise departure measure 3, shows that firms with surprise departures underperform firms without any independent director departures by 38 basis points monthly on a value-weighted basis and 32 basis points monthly on an equal-weighted basis. There is no statistically significant alpha generated by the long-short strategy that buys firms with expected director departures. Post-2004 results show the same underperformance of the long-short strategy involving the surprise director departure portfolio. The long-short strategy that buys firms with surprise director departures and sells firms with expected director departures shows coefficients of comparable magnitudes, with those reported in Columns 2 and 3 being statistically significant.

Overall, the results on long-run stock returns indicate that firms in which independent directors unexpectedly leave underperform firms with no independent director departures in the 12 months following the departure. Firms with expected departures only do not underperform.

3.2 Accounting performance

We next study accounting performance, defined as the ratio of operating income before depreciation to book assets (ROA from now on). Table 6 reports results from regressions of changes in ROA on director departures. Each firm-year with independent director departures is matched to another firm-year with no independent director departures. The matching firm is from the same 2-digit SIC industry with ROA in year −1 that is closest to the focal firm's ROA, subject to a maximum of 30% difference (see, e.g., Barber and Lyon 1996). Year −1 is the fiscal year-end just prior to the director's departure date. Only firm-years with no concurrent employee director departures and no linked director departures are included in the analysis. We also require that the focal firm and matching firm have data on ROA in year −1, year +1 and year +2. Our sample is reduced to 3,102 firm-years with independent director departures and 3,102 matching firm-years with no independent director departures.

We report two results in each panel. Change in ROA (−1,+1) is the change in ROA from year −1 to +1, while change in ROA (−1,+2) is the change in ROA from year −1 to +2. In panel A, we study all independent director departures and estimate regressions of change in ROA on an indicator variable equal to one if at least one independent director departs, and zero otherwise. The sample is based on the 6,204 firm-years with independent director departures and corresponding matching firm-years. The control variables are measured as of year −1 and include board size, % independent directors, log(sale), log(firm age), and year fixed effects. For brevity, only the coefficients on the indicator variable indicating independent director departures are reported.

Table 6
Operating performance around director departures

	Firms with surprise departures (1)	Firms with expected departures (2)	*p*-value (Testing (1) = (2))
A. Outside director departure			
Change in ROA (+1,−1)	−0.0025		
Change in ROA (+2,−1)	−0.0040**		
B. Outside director surprise departure (1)			
Change in ROA (+1,−1)	−0.0041*	−0.0004	0.26
Change in ROA (+2,−1)	−0.0066***	−0.0003	0.09*
C. Outside director surprise departure (2)			
Change in ROA (+1,−1)	−0.0038	−0.0020	0.60
Change in ROA (+2,−1)	−0.0068**	−0.0029	0.31
D. Outside director surprise departure (3)			
Change in ROA (+1,−1)	−0.0037	−0.0020	0.63
Change in ROA (+2,−1)	−0.0069**	−0.0029	0.29

The table reports the results from regressions of firm operating performance change on director departures. Firm-years are excluded if at least one employee director or linked director departs. Each firm-year with independent director departure is matched to another firm-year with no independent director departure. The matching firm is from the same two-digit SIC industry with ROA in year −1 that is closest to the focal firm's ROA, subject to a maximum deviation of 30%. Year −1 is the fiscal year-end just prior to the director's departure date. In Column 1, we estimate regressions of change in ROA on indicator variables for surprise director departures for the sample of firm-years with surprise director departures and their matching firm-years. The indicators for surprise director departure are equal to one if there is at least one surprise independent director departure and zero otherwise. In Column 2, we estimate regressions of change in ROA on indicator variables for expected director departures for the sample of firm-years with only expected director departures and their matching firm-years. The indicators for expected director departure are equal to one if at least one independent director departs and all departures are expected, and zero otherwise. Column 3 contains *p*-values for tests of statistical difference of the coefficients in Columns 1 and 2. Change in ROA (−1,+1) is the change in the ROA from year −1 to +1, and change in ROA (−1,+2) is the change in the ROA from year −1 to +2. The control variables are measured as of year −1 and include board size, % independent director, log(sale), log(firm age), and year fixed effects. Only the coefficients on the indicator variable for surprise director departure (expected director departure) are shown in Column 1 (Column 2). The Appendix contains detailed definitions of all variables. Robust standard errors, not reported, are used. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

For panels B through D, we divide the sample into firm-years with at least one surprise director departure and firm-years with only expected director departures. For the subsample of firms with surprise director departures (expected director departures) and the corresponding matching firm-years, we estimate regressions of change in ROA on an indicator variable equal to one if there is at least one surprise director departure (an indicator variable equal to one if all departures are expected), and zero otherwise. The coefficients on the surprise director departure indicators are shown in Column 1 and the coefficients on the expected director departure indicators are shown in Column 2. The coefficients on the control variables are not reported. Column 3 shows the *p*-values of a test of equality of coefficients in Columns 1 and 2.

Panel A of Table 6 shows that ROA measured over the (−1,+2) period significantly decreases after independent director departures. Panels B through D indicate that the effect is driven by surprise director departures. Performance significantly declines after surprise director departures according to all three measures, but there is no significant performance change after expected departures. The economic magnitude of the effect can be calculated as follows.

In firms with surprise independent director departures, ROA decreases by approximately 0.7% more post-surprise departure than in otherwise identical firms with similar ROA in year −1. The evidence using the (−1,+1) period is qualitatively similar, but economically about half as large, and of weaker statistical significance.[19] With the exception of one test, we however cannot reject the hypothesis that coefficients for surprise and expected director departure indicators are equal, as most of the reported *p*-values in Column 3 are above 10%.

4. Adverse Corporate Events Following Expected and Unexpected Director Turnover

Next, we examine whether we can identify an increase in adverse corporate events after surprise director departures. We focus on events that have been shown to adversely affect the reputational capital of directors belonging to the affected firms (e.g., Fich and Shivdasani 2007; Srinivasan 2005) and that are sufficiently important that directors can be expected to have information on these events prior to them being made public.

We examine earnings restatement announcements, shareholder lawsuit filings, M&A announcement returns, and episodes of extreme negative stock returns in the 12 months following the annual meeting date or director departure date. We provide two sets of results. In Table 7, we show results for each of the four events individually, and in Table 8, we construct an aggregate bad events indicator variable equal to one if the firm experiences earnings restatements, litigations, bad M&A deals, or extreme negative returns following surprise director departures. We create such a bad events indicator variable because each of these events is rare, and pooling them will increase the power of our tests.

We define an earnings restatement indicator variable as follows. The restatement indicator variable is equal to one if there is an announcement of a restatement due to irregularities during the 12 months following the annual meeting date or director departure date, and zero otherwise. We define a restatement due to irregularities as a restatement that Hennes, Leone, and Miller (2008) classify as intentional, where the SEC (or other regularity body) is involved, or which Audit Analytics classifies as fraud.[20]

Our restatement sample contains 11,660 firm-years, of which 1.57% (183/11,600) are affected by intentional misstatements. Columns 1 and 2 of Table 7 show results. The main independent variable of interest is an indicator variable equal to one if at least one independent director departs (Column 1) or at least one surprise independent director departure occurs according to measure 3 (Column 2). The results are qualitatively and quantitatively similar if we use

[19] One potential explanation of less significance for the (−1, +1) results is that directors are able to recognize trouble far in advance and want to maximize intertemporal distance to minimize reputational damage.

[20] We thank Andrew Leone for providing the classification of intentional misstatements pre-2006 on his Web site.

Table 7
Independent director departures and subsequent bad events

	Dependent variable =							
	Restatements indicator		Litigations indicator		Acquisition announcement returns (%)		Extreme negative stock returns indicator	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Independent dir depart	0.162		0.128		−0.722		0.014	
	0.151		*0.098*		*0.454*		*0.057*	
	[0.001]		[0.004]				[0.001]	
Independent dir surprise depart 3		0.419**		0.252**		−1.664**		0.164**
		0.189		*0.122*		*0.661*		*0.075*
		[0.004]*		[0.009]*				[0.013]**
Control variables	*Board size, % independent directors, Log(sales), Stock return, Cash flow, External financing, Cash acquisitions, Year fixed effects*		*Board size, % independent directors, Log(sales), Stock return, ROA, External financing, Year fixed effects*		*Board size, % independent directors, Log(sales), Book leverage, Q, Private target, Public target, Same industry, Tender offer, Hostile deal, Competed deal, % cash payment, Cash flow, Transaction value/acquirer market value, Year and industry fixed effects*		*Board size, % independent directors, Log(market capitalization), Average monthly return, Average stock return std dev, Average turnover (NYSE, AMEX), Average turnover(Nasdaq), Year fixed effects*	
Pseudo R-Sq/Adj R-Sq	0.09	0.09	0.04	0.04	0.09	0.09	0.21	0.21
No. of observations	11,660	11,660	13,013	13,013	1,276	1,276	14,325	14,325

The table shows results from the regressions of subsequent bad events following independent director departures. In Columns 1 and 2, the dependent variable is an indicator variable equal to one if there is an announcement of a restatement due to irregularities during the 12 months following the event date, and zero otherwise. In Columns 3 and 4, the dependent variable is an indicator variable equal to one if a lawsuit is filed during the 12 months following the event date, and zero otherwise. In Columns 5 and 6, the dependent variable is the [−1, +1] event window M&A cumulative abnormal announcement return for the M&A deals undertaken by the sample firms. In Columns 7 and 8, the dependent variable is an indicator variable equal to one if in any of the 12 months following the event date the monthly return is three standard deviations below the average monthly return over the past two years, and zero otherwise. *Independent dir depart* is an indicator variable equal to one if there is at least one independent director departure, and zero otherwise. *Independent dir surprise depart 3* is an indicator variable equal to one if there is at least one independent surprise director departure according to our measure 3, and zero otherwise. In Columns 5 and 6, the director departure variables are measured during the 12 months prior to the announcement of the deal. The Appendix contains detailed definitions of all variables. Other than Columns 5 and 6, where standard errors reported in italics are robust, all other columns report standard errors clustered at the firm level. Marginal effects with associated significance for the departure variables are reported in brackets. For brevity, only the coefficients and associated significance of the departure variables are reported. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

surprise departure measure 1 or measure 2. The control variables are taken as of the fiscal year ending just prior to the annual meeting date or director departure date. We use control variables that have been identified as important in the prior literature (e.g., Larcker, Richardson, and Tuna 2007; Srinivasan 2005). The Appendix contains detailed definitions for all control variables.

We show three numbers for the departure indicator variables. The first number is the coefficient from the logistic regressions, the second number in italics is the standard error, and the third number in brackets is the marginal effect. In Column 1, where we do not distinguish between surprise and expected departures, the coefficient on independent director departure is insignificant. The probability of an intentional misstatement is however significantly positively associated with surprise independent director departures in the prior year. The effect appears economically significant. The unconditional probability of a restatement is 1.57%. Consequently, the marginal effect of 0.004 for surprise departure measure 3 signifies that the surprise departure of an independent director increases the probability of a restatement by 25.5% (0.4/1.57). The coefficients on the control variables are in line with prior studies and omitted from the table for brevity.[21]

Columns 3 and 4 of Table 7 examine shareholder lawsuits to identify instances of alleged financial fraud.[22] 492 firm-years (3.78%) in our sample are associated with alleged securities fraud. We define a litigation indicator variable which is equal to one if a class action lawsuit is filed during the 12 months following the annual meeting date or director departure date, and zero otherwise. In Column 3 of Table 7, where we do not distinguish between surprise and expected departures, the coefficient on independent director departure is insignificant. The coefficient for surprise independent director departures in Column 4 is statistically and economically significant. Relative to the unconditional sample mean probability of 3.78%, the marginal effect of 0.009 is equivalent to an increase of 23.8% in the probability of filing. Regarding the control variables, the incidence of class action securities fraud lawsuits is increasing in firm size and if the firm raised relatively more external financing in the prior year (unreported for brevity). These findings correspond

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[21] Because of the small number of individual bad events, we did not include industry fixed effects in the logistics regressions as doing so would result in the loss of many observations when industries with no restatements are dropped. However, all results in Tables 7 and 8 remain quantitatively and qualitatively similar when we include industry fixed effects, where industry is classified at the two-digit SIC level.

[22] A drawback to using class action lawsuits to identify financial fraud is that the class action securities fraud lawsuit database contains events where fraud is alleged, but is not proven and may not have taken place. However, note that this fact biases us against uncovering evidence of directors leaving for reputational concerns prior to filings. One fact that is appealing for our purposes is that Black, Cheffins, and Klausner (2006) convincingly demonstrate that out-of pocket liability risk from shareholder litigation for outside directors is actually extremely low. To the extent that directors worry about future litigation it therefore seems much more related to reputational rather than financial concerns. For more details, see Fich and Shivdasani (2007) and Klausner (2010). Klausner (2010) empirically analyzes the differences between securities class action lawsuits and actual enforcement actions by the SEC.

to the findings of earlier research on shareholder lawsuits (see, for instance, Choi 2003).

We examine the cumulative abnormal announcement returns to M&A deals in Columns 5 and 6 of Table 7. Approval of M&A deals falls into the domain of the board of directors, and one way manager-shareholder conflicts manifest themselves is through value-destroying M&A deals. We only include completed deals for domestic targets where the transaction value is at least one million dollars and at least 1% of the acquirer's market value prior to the announcement date. Deals where the effective date is more than 1,000 days away from the announcement date are also deleted. The final sample consists of 1,276 M&A deals. We calculate the cumulative abnormal returns of the acquirer over the event window (−1 day, +1 day), where day 0 is the announcement date. The abnormal returns are calculated based on a market model, where the parameters of the market model are estimated using data from days −280 to −61.

In Column 5, we find that when we do not distinguish between surprise departures and expected departures, the coefficient on the independent director departure indicator variable is not significant. When we focus only on the surprise departure measure 3 in Column 6, we find that surprise independent director departures in the year prior to M&A transactions are significantly and negatively related to future merger and acquisition announcement returns. The results are economically sizeable. Firms with surprise director departures are associated with M&A announcement returns 1.7% lower than firms without prior surprise departures. The other control variables have coefficients consistent with the results of prior research and are omitted for brevity (e.g., Moeller, Schlingemann, and Stulz 2005).

While the above three events all lead to a destruction of firm value, there are of course other corporate events or managerial actions that have the potential to harm shareholders and to damage the reputation of directors. We therefore also examine in Columns 7 and 8 of Table 7 an indicator variable equal to one if the firm experiences an extreme negative stock return in the 12 months following the annual meeting date or director departure date. A monthly return is defined as extreme if it is at least three standard deviations below the past 24 months' average. Our final sample contains 13.8% of firm-years exhibiting extreme negative returns.

We follow Chen, Hong, and Stein (2001) and control for market capitalization, prior stock performance, stock volatility, and stock turnover. Specifically, we include as control variables the natural logarithm of market capitalization in the month of the proxy date or director's departure date (the event date), the average monthly return over the 12 months ending in the month of the event date, the average monthly standard deviation of daily stock returns over the 12 months ending in the month of the event date, and the average monthly share turnover over the prior 12 months. Turnover is defined as shares traded divided by shares outstanding. Since turnover data for Nasdaq is not comparable with that of NYSE and AMEX stocks, we define

a turnover variable for the Nasdaq stocks and another turnover variable for the NYSE/AMEX stocks (see Atkins and Dyl 1997). The turnover variable for Nasdaq (NYSE/AMEX) stocks is set to zero for NYSE/AMEX (Nasdaq) stocks.

In Column 7 of Table 7, where we do not distinguish between surprise and expected departures, we find that extreme negative stock returns are unrelated to prior director departures. In Column 8, we focus on surprise independent director departures. Surprise independent director departures are statistically significantly related to extreme negative returns in the year following the director departure. The marginal effects are economically meaningful. The surprise departure of an independent director increases the probability of a large negative return event by 1.3 percentage points, or, relative to the sample mean of 13.8%, by approximately 9.4%. The coefficients on the control variables (omitted for brevity) suggest that firms that experienced positive returns in the past, and firms with lower stock return volatility are more likely to experience an extreme negative stock return event. This is similar to Chen, Hong, and Stein (2001), who examine daily stock return skewness for a sample of NYSE/AMEX firms.

The overall conclusion from Table 7 is that in the 12 months following surprise director departures, firms have an economically meaningful higher probability of incurring an adverse event.

We now combine all of these events into one measure. In Table 8, the dependent variable is a bad events indicator variable that is equal to one if in the 12 months following the annual meeting date or director departure date, any of the earnings restatement, litigation, or skewness indicator variables defined above is equal to one or if the firm carried out a poor M&A deal. We define a poor M&A deal as one where the announcement return over the event window (−1 day, +1 day) is in the bottom quartile of all sample announcement returns. The firm-year frequency for the bad events indicator variable is equal to 18.8%. We include firm characteristics, such as firm size, cash flow, recent external financing, growth options, liquidity, and past profitability, known to affect earnings restatements, litigation, M&A announcement returns, and skewness in these regressions. In addition, we control for board size and the fraction of independent directors.

Table 8 shows the results. For the independent director departure variables, we again report three numbers. We show the coefficients from the logistic regressions, the standard error in italics below the coefficient, and the marginal effect of the departure indicator variables in brackets below the coefficients and standard errors. Column 1 shows that the director departure indicator variable that does not distinguish between surprise and expected departures has no explanatory power for bad events. Columns 2 through 4 show that all three surprise departure measures have significant explanatory power for future bad events. The economic magnitude is lower for the more noisy measure 1, which is based on age at departure alone, and doubles for the surprise departure measures 2 and 3, which are based on the Cox proportional hazard regressions. The effect

Table 8
Independent director departures and subsequent bad events, aggregate measure

Dependent variable = Bad events indicator				
	(1)	(2)	(3)	(4)
Independent dir depart	0.064			
	0.052			
	[0.009]			
Independent dir surprise depart 1		0.120**		
		0.058		
		[0.016]**		
Independent dir surprise depart 2			0.238***	
			0.069	
			[0.033]***	
Independent dir surprise depart 3				0.226***
				0.069
				[0.031]***
Board size	0.015	0.015	0.015	0.016
	0.012	*0.012*	*0.012*	*0.012*
% independent directors	−0.001	−0.001	−0.001	−0.001
	0.002	*0.002*	*0.002*	*0.002*
Log(sales)	0.094***	0.094***	0.093***	0.094***
	0.023	*0.023*	*0.023*	*0.023*
Stock return	0.123**	0.124**	0.124**	0.124**
	0.051	*0.051*	*0.051*	*0.051*
ROA	−0.401	−0.394	−0.387	−0.395
	0.442	*0.441*	*0.443*	*0.443*
External financing	0.848***	0.855***	0.863***	0.862***
	0.271	*0.271*	*0.271*	*0.271*
Cash flow	−0.630*	−0.626*	−0.623*	−0.625*
	0.360	*0.359*	*0.362*	*0.362*
Cash acquisitions	0.339	0.335	0.322	0.323
	0.432	*0.432*	*0.432*	*0.432*
Book leverage	0.293*	0.297**	0.301**	0.297**
	0.150	*0.150*	*0.150*	*0.150*
Tobin's q	0.104***	0.104***	0.104***	0.104***
	0.019	*0.019*	*0.019*	*0.019*
Average stock return standard deviation	−1.806	−2.016	−2.261	−2.099
	3.546	*3.539*	*3.544*	*3.546*
Average turnover (NYSE, AMEX)	0.707**	0.708**	0.706**	0.706**
	0.284	*0.283*	*0.283*	*0.283*
Average turnover (Nasdaq)	0.380	0.373	0.373	0.372
	0.255	*0.255*	*0.255*	*0.255*
Pseudo R-Sq	0.13	0.13	0.13	0.13
No. of observations	12,632	12,632	12,632	12,632
Year fixed effects	Yes	Yes	Yes	Yes

The table shows results from logistic regressions of bad events following independent director departures. The dependent variable is an indicator variable equal to one if in any of the 12 months following the event date, the firm announces a restatement or bad acquisition, there is a lawsuit filing, or the firm experiences an extreme negative stock return. A bad acquisition is an acquisition in which the cumulative abnormal announcement return over the event window (−1 day, +1 day) is in the bottom quartile of announcement returns across the entire sample. A monthly return is considered extremely negative if it is three standard deviations below the average monthly return over the past two years. Independent dir (surprise) depart indicator is an indicator variable equal to one if there is at least one independent director (surprise) departure. The control variables are measured as of the fiscal year ending just prior to the event date. The Appendix contains detailed definitions of the variables. Standard errors clustered at the firm level are reported in italics. Marginal effects with associated significance for the departure variables are reported in brackets. Intercepts are not reported. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

is strongly statistically significant and economically meaningful. The surprise departure of an independent director increases the probability of a future bad event by 3.3% (measure 2) and 3.1% (measure 3), respectively. Compared to

the sample average probability of 18.8% for a bad event, this is an increase of 16.5% to 17.5%.

Regarding the control variables, the incidence of bad events is increasing in firm size, in stock returns, and if the firm raised relatively more external financing in the prior year. We also find that poor cash flows, a high Tobin's q, and high average turnover on the NYSE are positively related to future bad events.

In all specifications in Tables 7 and 8, the measure of independent director departures that includes both surprise and expected departures is insignificant but when we isolate the cases with surprise director departures, we find that surprise director departures are associated with future bad events. Therefore, the results suggest that adverse events do not follow expected director departures and only happen after surprise director departures. In unreported results, in addition to the surprise director departure indicator variables, we specifically include indicator variables for expected director departures, that is, indicator variables equal to one if all the independent director departures are expected, and zero otherwise. We find that expected director departures do not predict future bad events. Only the surprise director departures are associated with future bad events. Further tests indicate that the coefficients on surprise departures are significantly different from those on expected departures for both measures 2 and 3 and for all types of bad events other than when we examine the incidence of litigations by using the surprise departure measure 2.

5. Direction of Causality

Our results on stock performance, accounting performance, and future bad events are consistent with a scenario in which the independent director anticipates deteriorating performance at the firm and leaves to protect his reputation or because he anticipates a significantly higher workload. The results could also be explained by the firm suffering from the departure of a valuable independent director as firms have a difficult time finding a suitable replacement after a surprise departure. In that case, the departure causes the bad events and poor performance. In this section, we attempt to shed light on the direction of causality. We start by outlining the problem and our identification strategy in Section 5.1. In Section 5.2, we re-examine the accounting performance and future bad events regressions in an instrumental variable (IV) framework.

5.1 Identification strategy

Our tests are inspired by the work of Fee, Hadlock, and Pierce (2013). They revisit the empirical evidence suggesting that managerial styles play an important role for a variety of corporate decisions. This evidence is often based on policy changes after a CEO turnover. However, similar

to our study of director turnover, CEO turnover is an endogenous event. Fee, Hadlock, and Pierce (2013) test whether the arrival of a new CEO causes corporate policy changes because the CEO brings a new style, or whether firms decide to simultaneously change the CEO and firm policies, possibly in anticipation of a changing business environment. We wish to test whether the departure of a good director causes poor-governance induced bad events and poor performance, or whether departing directors choose to depart because they anticipate the future bad events and performance.

Fee, Hadlock, and Pierce's (2013) main test focuses on exogenous CEO departures due to death in which the departure reveals little information about the firm's desire to change corporate policies in anticipation of changes in the firm's environment. They argue that because CEO deaths occur for a random set of firm-years, they can be used to study whether managerial styles truly cause changes in firm policies. Similarly, we will use exogenous independent director departures due to death.

Director departures due to deaths are unrelated to future firm performance and trouble other than through its impact on director departures. Director deaths can therefore be used as an instrument for independent director surprise departures to study whether the departure of the independent director causes the deterioration in performance and the adverse events.[23]

The instrument fulfills the relevancy condition, that is, that director deaths have explanatory power for surprise director departures. More importantly, we believe that the exclusion restriction can be maintained—director deaths should not affect future adverse events except through their impact on surprise director departures. If the surprise departure of an independent director causes the firm to behave poorly in the future, the instrumented surprise director departure variable should load strongly in the second stage of the IV regressions. If the coefficient on the instrumented director departure variable is indistinguishable from zero, it is suggestive of the alternative explanation, that is, that the anticipation of a future bad event explains the director departure.

5.2 Instrumental variable regression results

Table 9 shows results for two sets of two-stage-least-squares IV regressions. In Columns 1 and 2, we show first- and second-stage results for the ROA change

[23] While we analyze the consequences of the departure of outside directors, a related endogeneity issue has been discussed in the literature on appointments of executives as outside directors. As Kaplan and Reishus (1990) suggest and Booth and Deli (1996) confirm, there are at least two interpretations of a positive relation between outside board service and performance of an executive's own firm. One possibility is that better performance leads to higher demand for the executive's services as an outside director. Alternatively, it could be that executives of poorly performing firms need to spend more time managing their own firms and voluntarily decline opportunities to serve on other boards so that the supply of their services contracts. Brickley, Linck, and Coles (1999) find a clever way to separate demand and supply effects in this setting. They examine the demand for board service of retired CEOs and find that the demand is positively related to the performance of executives while they were active. The use of retired executives removes the supply consideration because these executives do not have to look after their own firms anymore. We remove supply considerations by focusing on director deaths.

Table 9
Independent director departures and subsequent bad events, instrumental variables approach

	ROA change (-1,+2)		***Bad events indicator***		
	IV		IV		OLS
	1st stage	2nd stage	1st stage	2nd stage	
	(1)	(2)	(3)	(4)	(5)
Director death	0.472***		0.191***		
	0.027		*0.041*		
Independent dir surprise depart 3		0.019		0.173	
(Instrumented)		*0.017*		*0.169*	
Independent dir surprise depart 3					0.031***
(Not-Instrumented)					*0.010*
Board size	0.029***	−0.001	0.010***	0.001	0.002
	0.004	*0.001*	*0.002*	*0.002*	*0.002*
% independent directors	0.006***	0.000	0.001***	−0.000	−0.000
	0.001	*0.000*	*0.000*	*0.000*	*0.000*
Log(sales)	0.005	−0.002**	−0.000	0.012***	0.012***
	0.009	*0.001*	*0.003*	*0.003*	*0.003*
Log(firm age)	−0.062***	0.004			
	0.016	*0.003*			
Stock return			−0.006	0.019***	0.018**
			0.007	*0.007*	*0.007*
ROA			−0.028	−0.069	−0.072
			0.058	*0.060*	*0.059*
External financing			−0.089**	0.142***	0.129***
			0.037	*0.041*	*0.038*
Cash flow			−0.049	−0.077	−0.085*
			0.051	*0.050*	*0.048*
Cash acquisitions			0.043	0.045	0.051
			0.055	*0.064*	*0.063*
Book leverage			−0.016	0.045**	0.043**
			0.022	*0.020*	*0.020*
Tobin's *Q*			0.000	0.017***	0.017***
			0.003	*0.003*	*0.003*
Average stock return standard			1.379***	−0.361	−0.167
deviation			*0.412*	*0.451*	*0.386*
Average turnover (NYSE,			0.001	0.071**	0.072**
AMEX)			*0.036*	*0.035*	*0.035*
Average turnover (Nasdaq)			0.050*	0.027	0.034
			0.029	*0.034*	*0.032*
No. of observations	2,144	2,144	12,632	12,632	12,632
1st-stage *F*-statistics	302.81***		21.91***		
Year fixed effects	Yes	Yes	Yes	Yes	Yes

The table reports results from instrumental variables regressions of the change in return on assets (ROA, Columns 1 and 2) and of an indicator variable for bad events (Columns 3 and 4) on director and firm characteristics. The endogenous variable instrumented in the first stage is *Independent dir surprise depart 3*, an indicator variable equal to one if there is at least one independent surprise director departure according to our measure 3, and zero otherwise. The instrumental variable *Director death* is an indicator variable equal to one if there is an independent director who died in the departure year, and zero otherwise. The second-stage dependent variable, *ROA change (−1,+2)*, in Column 2 is the change in the ROA from year −1 to +2. The second-stage dependent variable in Column 4 is equal to one if in any of the 12 months following the event date, the firm announces a restatement or bad acquisition, there is a lawsuit filing, or the firm experiences an extreme negative stock return. A bad acquisition is an acquisition in which the cumulative abnormal announcement return over the event window (−1 day, +1 day) is in the bottom quartile of announcement returns across the entire sample. A monthly return is considered extremely negative if it is three standard deviations below the average monthly return over the past two years. Column 5 shows results from an OLS specification in which the *Bad events indicator* is the dependent variable. The Appendix contains detailed definitions of the variables. For the ROA change specification, robust standard errors are reported in italics, while for the bad events indicator variable regressions, standard errors clustered at the firm level are reported in italics. First-stage *F*-statistics are robust Kleibergen-Paap Wald rk *F*−statistics. Intercepts are not reported. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

regressions of Table 6, and in Columns 3 and 4, we show results for the bad events indicator variable regressions of Table 8. We instrument the independent director surprise departure measure 3 with a director death indicator variable. Although both the surprise departure variable and the bad events indicator variable are binary, we estimate both the first- and second-stage regressions with linear specifications, as recommended by Angrist and Krueger (2001). As we estimate the second-stage regression for the bad events indicator variable using a linear specification, the results are not directly comparable to the results in Table 8. We therefore also re-estimate the specification in Column 4 of Table 8 using an ordinary least-squares (OLS) specification and report the results in Column 5 of Table 9 to allow the reader to compare the IV and OLS regression results. Results remain similar if we use a linear specification for the first stage and a probit model in the second stage when examining the bad events indicator variable.

The relevancy condition is fulfilled in both first stages (Columns 1 and 3). The instrument loads, as expected, strongly positively in the first stage regressions. The Kleibergen-Paap Wald rk F-statistic which is the robust counterpart to the Cragg-Donald Wald F-statistic is significant in both first stages, thereby rejecting the null that the instrument is irrelevant. Furthermore, the magnitude of the F-statistics are all above the critical values set out by Stock and Yogo (2005) and also bigger than the Staiger and Stock (1997) "rule of thumb" that the F-statistic has to be more than ten for weak identification not to be a problem.[24] Column 2 shows the second stage results for the change in ROA on the instrumented director departure variable. In contrast to the results in Table 6, where surprise director departures were significantly negatively correlated with future accounting performance, there is no effect in the IV regressions. The instrumented surprise director departure coefficient is indistinguishable from zero. Column 4 shows the second stage regression results for the bad events indicator variable regressed on control variables and the instrumented surprise director departure variable. The coefficient on surprise director departures is statistically indistinguishable from zero.

We fail to find evidence that exogenous surprise director departures cause accounting performance to deteriorate or that they cause firms to be more likely to suffer from bad events. Therefore, the negative association between surprise director departures and future bad performance and events are likely driven by independent directors leaving in anticipation of increased work load and reputation loss when the bad events are announced and not by surprise director departures causing the bad events.

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[24] Stock-Yogo critical values and the associated F-tests used in Stock and Yogo (2005) are based on the assumption of i.i.d. errors, which is likely violated in our sample. Therefore, the comparison of the Kleibergen-Paap Wald rk F-statistic against the critical values will have to be interpreted with caution. We also follow the recommendation of Baum, Schaffer, and Stillman (2007) to use the Staiger and Stock's (1997) "rule of thumb."

One may be concerned about power issues with these tests, as the economic magnitude of the instrumented coefficient on surprise departures is large. We first note that Fee, Hadlock, and Pierce (2013) discuss this issue extensively, as they also use an instrumental variable framework to establish lack of causality. They carry out a series of robustness tests to confirm their main finding that there is no causal link from CEO departures to changes in firm policies. They have a similar number of CEO departures due to death to our number of director departures due to death. We also note that Nguyen and Nielsen (2010) have a similar number of director deaths, and that they have enough power to find strong effects. Second, we also estimate IV regressions for each of the individual bad events, that is, restatements, litigations, and extreme negative stock returns. Due to the small sample of director deaths in the M&A sample, we are unable to estimate IV regressions for the M&A announcement returns. We find that the instrumented coefficients for surprise director departures are economically small, negative, and statistically insignificant for litigations and earnings restatements. Since the sign of the coefficient on the instrumented variable has flipped, that is, instrumented surprise departures decrease the incidence of litigations and restatements, power issues are unlikely to invalidate our interpretation that directors leave in anticipation of bad events. For the extreme negative returns, we find a positive and statistically significant coefficient (at 10% significance) on the instrumented director departure variable in the IV regressions. The positive and significant coefficient in the extreme negative return IV regression signifies two things (1) there is enough power in our sample setup to find statistically significant results, and (2) for extreme negative returns, we cannot rule out a causal interpretation of surprise director departures.

Our analysis in this section requires that director deaths lead to exogenous director departures. Death however is not necessarily unexpected. If directors suffer from chronic illness or cancer, for example, the company could avoid disruption in the boardroom and search and appoint a new experienced director in preparation for the director's eventual departure. For this reason, we have also repeated the bad events instrumental variable regression using sudden director deaths as an instrument. We find that the second stage instrumented coefficient for surprise director departures is 0.036 and is statistically indistinguishable from zero. Hence, our main finding of a lack of causal evidence from director departures to bad events is unaffected by the choice of instrument.

Overall, our results are therefore more suggestive of directors stepping down in anticipation of bad events, rather than director departures causing the bad events. We wish to emphasize however that we only document that on average adverse events occur following surprise departures and do not claim that all surprise director departures are followed by bad events. In other instances, the reasons for leaving the director position may be the presence of fundamental disagreement about the broad future direction of the firm between the director and the management team, even if there are no specific bad events on the horizon.

6. Additional Tests

6.1 Clustered director departures

We now examine whether surprise director departures cluster in time and whether subsequent events are worse after clustered director departures. We examine two forms of clustered surprise director departures. First, we examine the frequency distribution of the number of surprise director departures according to measure 2 in each firm-year.[25] We find that of the 1,900 firm-year observations with at least one surprise departure, 87.9% of the observations have only one surprise director departure. Second, we examine the dynamics of surprise director departures. It could be that directors do not step down in the same year, but that they react to the same events with some time lag. Therefore we ask the question: given that there was at least one surprise director departure in t-1, is it more likely that we observe a surprise director departure in year t? Surprise director departures are indeed clustered in time. The unconditional probability of at least one surprise director departure in each firm-year is 13.2%. Conditional on a surprise departure in year t-1, 17.3% of the firms again experience a surprise departure in year t. However, if there is no surprise departure in year t-1, only 12.7% of the firm-years have a surprise departure in year t. A Pearson chi-square test rejects the null hypothesis at the 1% level that the incidence of surprise director departure in year t is independent of a surprise departure in year t-1. Thus, it seems that surprise departures tend to be serially correlated.

Overall, there is some evidence of clustered departures, especially across time, but clustered departures are not a frequent event. Hence, we are somewhat limited in the types of events we can study after clustered departures. In particular, an analysis of return portfolios or any single bad event that happens with a low probability is not likely to yield any meaningful result. We instead re-examine clustered surprise departures in the regressions with the bad events indicator as dependent variable.

Table 10 shows the results. Columns 1 and 2 show results for clustered departures based on surprise director departure measure 2, and Columns 3 and 4 show results for clustered departures based on surprise director departure measure 3. In Columns 1 and 3, we examine the departure of multiple directors in the same year, and in Columns 2 and 4, we examine the incidence of bad events if there are successive surprise departures in adjacent years.

In Column 1 of Table 10, we observe that the marginal effect on subsequent bad events of only one surprise director departure in a given year is 3.1%, while the marginal effect of more than one surprise director departure is 5.5%. However, because only 1.6% of all firm-years have multiple surprise director departures, power is low, and we cannot reject the hypothesis that

[25] We obtain similar numbers when we examine measure 3 instead.

Table 10
Clustered surprise director departures and subsequent bad events

Dependent variable = Bad events indicator				
	(1)	(2)	(3)	(4)
Only one independent dir surprise depart 2 (a)	0.220***			
	0.074			
	[0.031]***			
>one independent dir surprise depart 2 (b)	0.374**			
	0.186			
	[0.055]*			
Only one independent dir surprise depart 2 in the last two years (a)		0.117*		
		0.070		
		[0.015]		
>one independent dir surprise depart 2 in the last two years (b)		0.394***		
		0.130		
		[0.057]***		
Only one independent dir surprise depart 3 (a)			0.227***	
			0.074	
			[0.032]***	
>one independent dir surprise depart 3 (b)			0.217	
			0.189	
			[0.031]	
Only one independent dir surprise depart 3 in the last two years (a)				0.089
				0.071
				[0.012]
>one independent dir surprise depart 3 in the last two years (b)				0.371***
				0.131
				[0.054]**
All other control variables of Table 8	Yes	Yes	Yes	Yes
No. of observations	12,632	11,607	12,632	11,607
p-value for (a) = (b)	0.44	0.05**	0.96	0.05**
% of observation with >one surprise dep	1.59%	4.60%	1.48%	4.37%

The table shows results from logistic regressions of bad events following clustered surprise director departures. The dependent variable is an indicator variable equal to one if in any of the 12 months following the event date, the firm announces a restatement or bad acquisition, there is a lawsuit filing, or the firm experiences an extreme negative stock return. A bad acquisition is an acquisition in which the cumulative abnormal announcement return over the event window (−1 day, +1 day) is in the bottom quartile of announcement returns across the entire sample. A monthly return is considered extremely negative if it is three standard deviations below the average monthly return over the past two years. Only one (>one) independent dir surprise depart is an indicator variable equal to one if there is only one (more than one) independent director surprise departure in the year and zero otherwise. Only one (>one) independent dir surprise depart in the last two years is an indicator variable equal to one if there is only one (more than one) independent director surprise departure over the last two years and zero otherwise. The control variables are measured as of the fiscal year ending just prior to the event date. The Appendix contains detailed definitions of the variables. Standard errors clustered at the firm level are reported in italics. Marginal effects with associated significance for the departure variables are reported in brackets. Intercepts are not reported. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

the effect of a single and multiple surprise director departure for future bad events are equal. In Column 2, we examine whether there were multiple surprise director departures in the last two years. The incidence of such clustered departures is 4.6%. We observe that the probability of a future bad event is higher after clustered director departures (1.5% vs 5.7%). The difference in the coefficients on the single departure variable and multiple departure variable is significant at the 5% level so that we can say that future bad events are more likely to occur after clustered surprise departures.

Columns 3 and 4 show results when we base the clustered surprise director departure proxies on surprise director departure measure 3. The results are economically similar to those reported in Columns 1 and 2.

6.2 Replacement directors

We argue that directors worry about their reputation or about a higher workload and leave in anticipation of bad events. An interesting question is whether companies can obtain as high caliber and reputable replacement directors after surprise departures as after expected or anticipated departures.

In unreported regressions, we carry out the following additional analysis. As it is difficult to determine who replaces whom in cases where there are multiple director departures, we divide the sample of 7,154 independent director departures into departures that are accompanied by other director departures (independent, employee, or affiliated) and single independent director departures. In what follows, we examine the replacement directors appointed after single independent director departures. We focus on replacement directors who are independent as a firm may simply try to appoint an insider to fill the position if the firm has difficulty appointing independent directors to the board.

The likelihood that the independent director is simply not replaced at all in the annual meeting immediately following the departure is about 4 percentage points higher for surprise departures than for expected departures. A chi-square test rejects at the 5% level that there is no association between the type of departures and whether there is a replacement director. There is no significant difference in age or other board seats of new independent directors after expected or surprise departures. We find some evidence that the replacement independent directors following surprise departures tend to be less prestigious, compared to those replacing expected departures. There are statistically and economically significant differences in whether the new director is a current CEO (21% of replacement directors are CEO directors after expected departures versus 16% after surprise departures) and in the number of years as a director in general (4.6 years of boardroom experience after expected departures versus 4 years after surprise departures).

7. Announcement Returns to Unexpected Director Departures

We show in Tables 7 and 8 that surprise director resignations contain a signal of future adverse developments for a company. Yet, investors appear to miss the importance of this signal, given the results in Tables 4 and 5 that the negative abnormal stock returns continue for one year into the future. We now examine whether investors at least partially anticipate problems at firms when directors unexpectedly resign by studying announcement returns to surprise director departures. To isolate the effect of a surprise director departure from other

corporate events, we create a sample of director resignations announced in 8-K filings that occurred around dates on which no other confounding corporate news were communicated. We use the Audit Analytics Director and Officer Changes database, which tracks 8-K filings of director departures after the disclosure changes in 2004, to obtain announcement dates of director departures after January 1, 2005.

Of 7,154 director departures in our entire sample, 3,475 departures have event dates after January 1, 2005. Of these 3,475 departures, we were able to match 1,931 (55.6%) to Audit Analytics. The missing departures were either not communicated via 8-K filings, although this would be a violation of a reporting requirement, or were communicated directly in the proxy statement. The new disclosure rules require that director departures be filed within 4 business days. Therefore, we look for confounding events within +/−5 days of the announcement date. We remove director departure announcement dates if any of the following events happen in the vicinity of the 8-K filing (number of nonmutually exclusive confounding events are in parentheses): quarterly earnings announcements (321), dividend announcements (438), acquisition announcements (either as acquirer or target) (19), management guidance announcement (205), or 8-K filings of other director and officer changes (896). While the exclusion of these departures significantly reduces the sample size for the test in this section, we believe it is critical to do so to be able to draw correct inferences.

We are left with 724 departures. We then proceed to exclude director departures that happened during the financial crisis of 2007-2009. The reason for doing this is straightforward. The financial crisis corresponds to a period of extremely high stock return volatility, so that our tests would have little power during that period. Our final sample consists of 361 independent director departure announcements.[26]

Table 11 shows means and medians for market-model adjusted director departure announcement returns. We calculate the cumulative abnormal announcement returns over the event window (−5 day, +1 day), where day 0 is the date the 8-K filing is accepted by SEC. As highlighted by Lerman and Livnat (2010), the new Form 8-K guidance allows the public to receive information of the director departure within five days of its occurrence, thus an event window of (−5, +1) is conservative. The abnormal returns are calculated based on a market model, where the parameters of the market model are estimated using data from days −280 to −61.

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[26] We find in unreported tabulations that firm and director characteristics for the sample of 361 departures with clean announcement dates are economically and statistically similar to the characteristics for the overall sample of director departures post-2004. Therefore, while the sample of announcement returns we analyze is significantly smaller than the overall sample, we do not see an obvious reason to worry about sample selection issues. Interestingly, for the departures classified as surprise departure (both measures 2 and 3) in this sample, only two departures cited disagreement with management as the reason for departure. In the vast majority of cases, no reasons were given or directors cite personal reasons, such as "too many commitments," for departure.

Table 11
Director departure announcement returns

	N	Mean (%)	Median (%)
A. Independent director departure			
All departures	361	0.0760	−0.1541
B. Independent director surprise departure 1			
Expected departures	85	0.6633	0.6088**
Surprise departures	276	−0.1048	−0.7034*
p-value of test of difference		0.16	0.01***
C. Independent director surprise departure 2			
Expected departures	196	0.6045*	0.3278
Surprise departures	165	−0.5516*	−0.7013**
p-value of test of difference		0.01**	0.02**
D. Independent director surprise departure 3			
Expected departures	201	0.4800	0.2530
Surprise departures	160	−0.4313	−0.6525*
p-value of test of difference		0.04**	0.08*

The table reports market-model-adjusted announcement returns for the filing of departures of independent directors. The filing dates are taken from the Audit Analytics Director and Officer Changes data set, which tracks 8-K filings of director departures from 2005 onward. Only independent director departures that are matched to Audit Analytics and those occurring outside of the crisis period of 2007-2009 are included in the analysis. Announcements of departure filings are deleted if a confounding event occurred within +/- 5 days of the filing date. Confounding events include management guidance announcements, quarterly earnings announcements, dividend announcements, director and officer changes filings, and acquisition (either as acquirer or target) announcements. The cumulative abnormal announcement return is calculated over the event window (−5, +1), where day 0 is the date the filing is accepted by the SEC. The abnormal returns are calculated from a market model using the CRSP value-weighted market return. The parameters of the market model are estimated using data from days −280 to −61 relative to the announcement date. *t*-tests and signed-rank tests are used to determine whether the mean and median cumulative abnormal announcement returns are significantly different from zero, respectively. Two-sample *t*-tests (Wilcoxon-Mann-Whitney tests) are conducted to test whether the mean (median) announcement returns to surprise departures are significantly different from those of expected departures. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

Panel A shows that the announcement returns for all independent director departures are statistically insignificantly different from zero. Panel B shows results using the simple age-based measure for surprise director departures. Announcement returns to the surprise departure of directors defined using measure 1 are statistically significantly lower than announcement returns to expected director departures. Panels C and D use our more sophisticated measures of surprise departures. The results show that the announcement returns to surprise director departures are statistically significantly negative in three out of four specifications. The economic magnitude varies between −0.4% and −0.7%. In contrast, the announcement returns to expected director departures are statistically indistinguishable from zero and even positively significant (at 10% level) in one of the specifications. The last row in each panel shows that the announcement returns to surprise departures are statistically significantly lower than the announcement returns to expected departures.

Overall, the evidence in Table 11 using our clean sample of announced director departures shows that investors partially anticipate the bad future news that the unexpected departure of a director entails. In addition, investors seem to be able to differentiate between anticipated and unanticipated director

departures. In unreported regressions, we also examine the cross-sectional determinants of the announcement returns to unexpected director departures. We find that the announcement returns are lower if the director who resigns unexpectedly is a member of the corporate governance committee, if he had attendance problems the prior year, if it is a smaller firm, and if the stock return volatility is higher.

8. Conclusion

We show that following surprise independent director departures, affected firms have worse stock performance, worse accounting performance, a greater likelihood of an extreme negative return, a greater likelihood of a restatement, a greater likelihood of being sued by their shareholders, and lower announcement returns to mergers and acquisitions. In contrast, we do not observe poorer performance and the incidence of adverse events increasing following expected director departures.

Investors partially incorporate the higher incidence of future bad events after surprise director departures because announcement returns to surprise departures are negative and lower than those to expected departures. We examine the direction of causality and find that our evidence is more consistent with directors stepping down in anticipation of bad events rather than director departures causing bad events.

Independent directors have incentives to quit to protect their reputation or to avoid increases in their workload when the firm on whose board they sit is likely to experience a tough time either because of poor performance or because of disclosure of adverse actions. Our results have important implications for understanding the market for independent directors. The incentives of independent directors need to be taken into account when appointing independent directors. Shareholders should devise policies that allow them to retain important independent directors in times of crisis. For example, financial incentives can be given to directors to stay during bad times.

Further research should analyze the impact of director compensation, director equity holdings, and vesting conditions of director equity grants on directors' incentives to quit to protect their reputation or to avoid an increase in their workload.

Appendix

The Appendix describes the dependent and independent variables used in the paper.

Table A1
Data Description

Variable	Description
Dependent variables	
Restatements indicator	An indicator variable equal to one if there is an announcement of a restatement due to irregularities during the 12 months following the event date, and zero otherwise. A restatement due to irregularities is a restatement that Hennes, Leone, and Miller (2008) classified as irregular, where the SEC (or other regulatory body) is involved, or which Audit Analytics classified as fraud. Announcement dates of restatements are from the list of restatements compiled by the U.S. Government Accountability Office (GAO) for years prior to 2006 and supplemented with data from Audit Analytics for years 2000 and onward
Litigations indicator	An indicator variable equal to one if there is a lawsuit filing during the 12 months following the event date, and zero otherwise. Data on firms that have been named in federal class action securities fraud lawsuits come from the Stanford Law School Securities Class Action Clearinghouse
Acquisition announcement returns (%)	Cumulative abnormal returns to M&A announcements of sample firms. The cumulative abnormal announcement returns are measured over the event window (−1 day, +1 day), where day 0 is the announcement date. The abnormal returns are calculated from a market model, where the parameters of the market model are estimated using the CRSP value-weighted market returns and data from days −280 to −61. The M&A deals are from SDC Platinum
Extreme negative stock returns indicator	An indicator variable equal to one if in any of the 12 months following the event date the monthly return is three standard deviations below the average monthly return over the past two years
Bad events indicator	An indicator variable equal to one if in any of the 12 months following the event date the firm announces a restatement or bad acquisition, there is a lawsuit filing, or the firm experiences an extreme negative stock return. A bad acquisition is one where the cumulative abnormal announcement return over the event window (−1 day, +1 day) is in the bottom quartile of the sample
Independent variables (director characteristics)	
Tenure	Number of years director has been on the board of the firm
No. of other directorships	Number of other boards that the director sits on
Age indicators	Indicator variables equal to one if the director age falls within the specific range, and zero otherwise
Director death	An indicator variable equal to one if the director died, and zero otherwise
Current CEO indicator	An indicator variable equal to one if the director is currently the CEO of another company, and zero otherwise
Current executive indicator	An indicator variable equal to one if the director is currently a senior executive of another company (e.g., CFO, Treasurer, and President), and zero otherwise
Retired	An indicator variable equal to one if the director is retired, and zero otherwise
Committee member	An indicator variable equal to one if the director is a member of the specific board committee, and zero otherwise
Appointed to another firm	An indicator variable equal to one if the director is appointed to another firm in the RiskMetrics Directors Database in the one year prior to the event date, and zero otherwise
Attendance problem	An indicator variable equal to one if the director attended less than 75% of the meetings in a given year, and zero otherwise

(*continued*)

Table A1
Continued

Variable	Description
Independent variables (departure variables)	
Independent dir depart	An indicator variable equal to one if at least one independent director departs, and zero otherwise
Independent dir surprise depart 1	An indicator variable equal to one if at least one independent director unexpectedly departs, and zero otherwise, where an unexpected departure is a departure of a director aged 69 and younger
Independent dir surprise depart 2	An indicator variable equal to one if at least one independent director unexpectedly departs, and zero otherwise. An unexpected departure is a departure of a director where the survival function from the Cox proportional hazard model in Table 2, Column 1, is higher than 75% but the director nevertheless departs
Independent dir surprise depart 3	An indicator variable equal to one if at least one independent director unexpectedly departs, and zero otherwise. An unexpected departure is a departure of a director where the survival function from the Cox proportional hazard model in Table 2, Column 2, is higher than 75%, but the director nevertheless departs
Only one independent dir surprise depart 2 (3)	An indicator variable equal to one if only one independent director unexpectedly departs, and zero otherwise
>one independent dir surprise depart 2 (3)	An indicator variable equal to one if more than one independent director unexpectedly departs, and zero otherwise
Only one independent dir surprise depart 2 (3) in the last two years	An indicator variable equal to one if there is only one unexpected independent director departure in the last two years, and zero otherwise
>one independent dir surprise depart 2 (3) in the last two years	An indicator variable equal to one if there is more than one unexpected independent director departure in the last two years, and zero otherwise
Independent variables (firm and governance characteristics)	
Log(market capitalization)	Logarithmic transformation of market value of equity (millions of 2011 $)
Log(sales)	Logarithmic transformation of sales (millions of 2011 $)
Stock return	Buy-and-hold returns over fiscal year
Industry stock return	Median buy-and-hold returns of firms in the same two-digit SIC during the same fiscal year
ROA	Return on assets, operating income before depreciation divided by book assets.
Return volatility	Standard deviation of daily stock returns over the fiscal year
CEO left indicator	An indicator variable equal to one if there is a change in the CEO in the last 12 months, and zero otherwise
CEO ownership (%)	Percentage of shares outstanding held by the CEO
Board size	Number of directors on the board
% independent directors	Percentage of directors who are independent directors, that is, neither employee nor affiliated directors as defined by RiskMetrics
External financing	Sum of net equity financing and net debt financing divided by book assets
Cash flow	Sum of net income before extraordinary items and depreciation divided by book assets
Cash acquisitions	Ratio of cash spent on acquisitions to book assets
Book leverage	Sum of long-term debt and short-term debt divided by book assets
Tobin's q	Market value of assets divided by book assets, where market value of assets equals to the sum of book assets and market value of equity minus sum of book equity and deferred taxes

(*continued*)

Table A1
Continued

Variable	Description
Independent variables (firm and governance characteristics)	
Average stock return standard deviation	Average monthly standard deviation of daily stock returns over the fiscal year
Average turnover (NYSE, AMEX)	Average monthly stock turnover over the fiscal year, where turnover is defined as shares traded divided by shares outstanding. Set to zero for all Nasdaq firms
Average turnover (Nasdaq)	Average monthly stock turnover over the fiscal year, where turnover is defined as shares traded divided by shares outstanding. Set to zero for all NYSE or AMEX firms
Average monthly return	Average monthly stock return over the fiscal year
Independent variables specific to regressions involving acquisition announcement returns	
Private target	An indicator variable equal to one if target is private, and zero otherwise
Public target	An indicator variable equal to one if target is public, and zero otherwise
Same industry	An indicator variable equal to one if the acquirer and target belong to the same two-digit SIC, and zero otherwise
Tender offer	An indicator variable equal to one if tender offer, and zero otherwise
Hostile deal	An indicator variable equal to one if hostile deal, and zero otherwise
Competed deal	An indicator variable equal to one if there is more than one bidder, and zero otherwise
% cash payment	% of transaction value paid with cash
Transaction value/acquirer market value	Ratio of transaction value to acquirer market value

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