Who joins a sinking ship and why? Some evidence on outside directors who join fraudulent firms.

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Certificate of original authorship

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as a part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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Abstract

Existing literature shows that, following the revelation of fraud, outside directors with a weaker ability to monitor and advise are likely to be removed. This thesis investigates the characteristics of the directors who replace these departing directors. I find that within two years fraudulent firms appoint more experienced and qualified directors than a control sample of non-fraudulent firms. As a result, the proportion of qualified directors on the board of fraudulent firms is on average higher than the proportion of qualified directors on the board of the control firms. I also investigate the incentives for outside directors to join fraudulent firms and find that joining culpable firms in the post-fraud period enhances an outside directors' ability to obtain more future board seats. Outside directors also benefit from higher compensation offered by fraudulent firms in the post-fraud period. Lastly, I explore the stock market's assessment of the director replacement process. The results demonstrate that in the first year after the fraud is revealed the stock market reacts negatively to the appointment of new outside directors; however, in the second year the market reaction becomes positive. All the findings in the thesis are robust to a variety of sensitivity tests

Chapter 1

1.1 Introduction

A growing body of research examines the association between the characteristics of outside directors and the likelihood of their departure from firms that were involved in financial fraud.[1] This research finds that once the fraud is revealed, directors who lack banking, accounting, legal or other professional qualifications are likely to be pressured out from the culpable firms due to their weaker ability to provide monitoring and advising skills (Marcel and Cowen, 2014).[2] These findings imply that, in the post-fraud period, culpable firms have strong incentives to replace less qualified directors with more qualified and experienced directors.[3] However, it is not clear whether qualified and experienced directors are willing to join these firms.

Fraudulent firms are perceived to be less prestigious by outside directors and serving on their board requires additional workload (Brown and Matsa, 2015; Dou, 2015; Gao et al., 2014; Fahlenbrach et al., 2013). [4] To counter these disincentives, fraudulent firms may offer higher compensation to newly appointed outside directors. In addition, by serving on the board of these firms directors may gain valuable experience enabling them to obtain additional board seats in the future. However, no prior research investigates whether qualified and experienced directors join fraudulent firms and what their incentives are for doing so.

[1] Prior research investigates director departures in the context of fraud related accounting restatements (Marcel and Cowen, 2014; Cowen and Marcel, 2011; Arthaud-Day et al., 2006; Srinivasan, 2005), fraud related lawsuits (Brochet and Srinivasan, 2014; Fich and Shivdasani, 2007) and SEC enforcement actions (Karpoff et al., 2008).

[2] I use the terms 'outside directors' and 'directors' interchangeably to describe all board members except executive directors or directors who have served as an executive director during the sample period.

[3] In this thesis a director is described as qualified if he or she possesses legal or accounting expertise.

[4] In this thesis a firm faced with a shareholder class action lawsuit alleging financial misrepresentation is considered to be fraudulent.

Prior research also suggests that the director replacement is a recovery action, which is initiated by fraudulent firms in order to enhance shareholders' value (Cowen and Marcel, 2011; Arthaud-Day et al., 2006; Srinivasan, 2005). However, it is not clear whether the stock market reacts positively to the appointment of the replacement directors.

Therefore, the objectives of this thesis are to investigate: (i) the qualifications and previous experience of directors that are appointed following the revelation of financial fraud; (ii) whether joining fraudulent firms affects a director's ability to obtain additional board seats; (iii) whether directors are offered additional compensation for joining fraudulent firms; and (iv) the stock market reaction to the appointment of the replacement directors.

This thesis is motivated by four findings from prior studies. First, an emerging literature investigates the association between the reputational value provided by firms and a directors' willingness to offer their services to these firms (Masulis and Mobbs, 2014; Gao et al., 2014; Fahlenbrach et al., 2013; Knyazeva et al., 2013; Fahlenbrach et al., 2010). These studies find that directors prefer joining larger and more profitable firms as these firms are perceived to be more prestigious and serving on their board can significantly enhance a director's reputation (Masulis and Mobbs, 2014; Knyazeva et al., 2013; Boievie et al, 2012). Likewise, these studies demonstrate that directors try to protect their reputation by avoiding firms that are likely to experience adverse events and weak performance (Dou, 2015; Gao et al., 2014; Fahlenbrach et al., 2013).

As the revelation of fraud is typically followed by negative performance and a variety of other negative events such as accounting and auditing enforcement releases

(AAERs) and accounting restatements (Karpoff et al., 2014; Farber, 2005), fraudulent firms may face difficulty in attracting outside directors to their board. In particular, these firms may struggle to appoint qualified and experienced directors as these directors are likely to be highly sought after and may choose to avoid joining firms with a tarnished reputation (Knyazeva, Knyazeva, and Masulis, 2013; Nguyen and Nielsen, 2010). These findings are contrary to expectations, that in the post fraud period fraudulent firms are likely to replace less qualified directors with more qualified and experienced directors (Marcel and Cowen, 2014; Karpoff et al., 2008; Arthaud-Day et al., 2006, Srinivasan, 2005). Accordingly, this thesis corroborates findings from prior research and empirically investigates the characteristics of the replacement directors.

Second, a large body of literature demonstrates how a director's reputation and previous experience affects their ability to obtain additional board seats (Dou, 2015; Harford and Schonlau, 2013; Ertimur et al., 2012; Fich and Shivdasani, 2007; Srinivasan, 2005; Yermack, 2004). These studies suggest that obtaining additional board seats is a critical component of directors' incentives. Therefore, outside directors are likely to assess their career outcomes prior to deciding whether they will offer their services to a particular firm.

However, it is not clear whether outside directors are incentivised to join firms with a tarnished reputation since there are two potential career outcomes that they may face after joining such firms. On the one hand, joining the board of a firm with a tarnished reputation may provide directors with valuable experience, which may enhance their ability to acquire additional board positions (Harford and Schonlau, 2013; Gray and Nowland, 2013). On the other hand, joining such firm may damage directors'

reputational capital (Marcel and Cowen, 2014; Kang, 2008; Pozner, 2008; Wiesenfeld et al., 2008) and as a result directors may experience a decrease in their current and future board seats (Dou, 2015; Ertimur et al., 2012; Fich and Shivdasani, 2007; Srinivasan, 2005; Yermack, 2004).

Understanding the career consequences faced by outside directors for joining firms with a tarnished reputation is important, as it allows an assessment of whether directors' incentives are aligned with shareholder interests (Harford and Schonlau, 2013).[5] For example, if outside directors are penalised by the director labour market for joining firms with a tarnished reputation, this may discourage more qualified and experienced directors from joining these firms. Therefore, fraudulent firms may only attract unqualified directors, which is likely to aggravate agency problems. In contrast, if the director labour market rewards outside directors for joining firms with a tarnished reputation, qualified directors may have a strong incentive to join these firms, which may be beneficial to shareholders. Accordingly, given that the career outcomes faced by outside directors for joining firms with a tarnished reputation are not clear, this thesis provides evidence on the topic.

Third, previous research suggests that prestige is the primary incentive for outside directors to join a new board (Masulis and Mobbs, 2014; Lorsch and Maciver, 1989). Accordingly, since firms with a tarnished reputation are perceived to be less prestigious (Lange, Lee and Dai, 2011; Jensen and Roy, 2008; Washington and Zajac, 2005; Rindova et al., 2005), outside directors may be more reluctant to join these

[5] For example, Harford and Schonlau (2013) argue that, if the director labour market considers M&A experience more important than M&A performance, CEOs are more likely to engage in value destructive acquisitions, which exacerbates agency problems.

firms. Therefore, less reputable firms may need to provide additional incentives in order to attract new outside directors to their board. In particular, these firms are likely to offer higher compensation to their new outside directors. However, it is not clear whether this additional compensation is likely to be offered in form of cash or equity.

On the one hand, it is argued that equity compensation is likely to align directors' and executives' interests with those of shareholders (Ertugrul and Hegde, 2008; Fich and Shivdasani, 2005). According to this argument, a rational fraudulent firm is likely to recontract with its outside directors and may offer them more equity in the post-fraud period. On the other hand, some studies suggest that equity based compensation leads to higher likelihood of misreporting (Cheng and Farber 2008; Efendi et al., 2007; Burns and Kedia, 2006; Jensen, 2005). Therefore, if a rational fraudulent firm believes that providing more equity to its outside directors is detrimental, they are likely to reduce the amount of equity offered to its outside directors in the post fraud period. By documenting the changes in the director compensation following the revelation of fraud, this thesis provides further evidence on the importance of the size and structure of the compensation packages offered to outside directors.

Finally, a growing body of literature shows that, following financial fraud, culpable firms take a range of actions to recover their reputation (Chakravarthy et al, 2014; Karpoff, 2012; Wilson, 2008; Cheng and Farber, 2008; Farber, 2005). These actions include increasing board independence, changing incentive and control systems, or dismissing top executives. Culpable firms have a strong incentive to undertake these actions as they lead to a positive market reaction, improved financial reporting

credibility, faster recovery of their market value and higher profits (Chakravarthy et al, 2014; Karpoff, 2012; Wilson, 2008; Cheng and Farber, 2008; Farber, 2005). Although previous research suggests that the director replacement process is also a part of these recovery actions and should enhance shareholders' value (Brochet and Srinivasan, 2014; Marcel and Cowen, 2014; Arthaud-Day et al., 2006), they do not provide evidence on the stock market reaction associated with the appointment of the replacement directors. This thesis fills this void in the literature.

The evidence in this paper is based on a sample of 261 class action lawsuits alleging financial misrepresentation between 2003 and 2011. Using this sample I find that, within two years after the fraud is revealed, culpable firms appoint more experienced and qualified directors than a control sample of firms, which is matched on size, industry and the fraud revelation date. As a result, in the post-fraud period the proportion of qualified directors on the board of fraudulent firms is on average higher than the proportion of qualified directors on the board of the control firms.

The results also demonstrate that directors have strong incentives to join fraudulent firms. Directors who join fraudulent firms within the three year period around the revelation of fraud are more likely to obtain additional directorships than directors who were present on the board prior to the revelation of fraud and directors from the control sample of firms. This result is particularly strong for the directors who joined fraudulent firms within the first year after the fraud is revealed. In addition, fraudulent firms offer higher compensation to their outside directors in the two-year period following the revelation of fraud. Specifically, in comparison to the control sample of

firms, fraudulent firms offer around $21,000 more to their directors in the first year after the revelation of fraud and $28,000 in the second year.

The results indicate that the average stock market reaction to the appointment of directors is -1.85% in the first year after the fraud is revealed and 1.72% in the second post-fraud year. Since previous research suggests that the director replacement process is undertaken by fraudulent firms to recover their value, the negative stock market reaction in the first post-fraud year is unexpected. This result could be driven by the significant amount of uncertainty regarding the charges levied against culpable firms in the post-revelation period (Karpoff et al., 2008). When uncertainty is high the stock market may interpret the increase in director turnover as an indication of rising costs. Therefore, even when fraudulent firms appoint qualified and experienced directors, the market reaction is likely to be negative until the uncertainty is resolved.

This thesis contributes to the previous literature in a number of important ways. First, it extends the large body of research which documents the consequences faced by outside directors for being present on the board of firms that were involved in financial fraud (Dou, 2015; Brochet and Srinivasan, 2014; Gao et al., 2014; Marcel and Cowen, 2014; Fahlenbrach et al., 2013; Karpoff, Lee and Martin 2008; Fich and Shivdasani, 2007; Desai et al. 2006; Farber 2005; Srinivasan 2005). Previous studies focus on the characteristics and career outcomes of outside directors who were present on the board prior to the revelation of fraud; this thesis, in contrast, focuses on the qualifications, experience and career outcomes of the incoming directors.

Second, this thesis complements the growing body of research which explores firm-initiated governance changes that occur following the revelation of fraud and the economic outcomes of these changes (Chakravarthy et al, 2014; Wilson, 2008; Cheng and Farber, 2008; Farber, 2005). I provide evidence that the director replacement process improves the value of fraudulent firms only in the second year following the revelation of fraud and has a negative impact on firm value in the first post-fraud year. I also contribute to this body of research by documenting the change in the size and structure of director compensation in the post-fraud period. Therefore, this thesis also contributes to the literature that investigates the importance of compensation incentives for outside directors (Masulis and Mobbs, 2014, Boivie et al., 2012; Engel et al., 2010; Linck et al., 2009; Adams and Fereira, 2008). I show that outside directors can be attracted to the board of fraudulent firms by additional compensation.

Last, I provide some evidence on the relevance of recent regulatory changes. From December 2009, the SEC has required firms to provide detailed information on the qualifications of individual directors and the rationale for how their qualifications suit a firm's business (SEC, 2009). The SEC introduced these regulatory changes to encourage the appointment of well-qualified directors that are most suitable for each individual company and hence emphasised the importance of outside directors for a firm's value (Dass et al., 2014). This thesis provides evidence on the SEC's view that the qualifications of individual outside directors influence firm value.

1.2 Thesis structure

The remainder of this thesis is organised as follows. Chapter 2 describes relevant literature and develops hypotheses on the characteristics and incentives of directors

who join fraudulent firms and the economic consequences of the director replacement process. Chapter 3 describes the sample used in the thesis and defines the variables used in the multivariate analysis. Chapter 4 presents the research design of this thesis and the results from the empirical investigation. Chapter 5 concludes the thesis, providing a summary of its key findings.

Chapter 2

Literature Review and Hypothesis Development

Chapter 2 outlines relevant literature and develops hypotheses. This chapter commences with section 2.1, which summarises the literature related to the recovery actions taken by fraudulent firms in the post-fraud period. Sections 2.2 and 2.3 build on the previous section and outline the studies related to the experience and qualifications of outside directors. The chapter continues with section 2.4, which reviews the literature on how the reputation of a firm affects the reputation of its directors and consequently their career outcomes. Section 2.5 builds upon previous sections and presents alternative arguments on whether joining firms with a tarnished reputation is likely to enhance a director's ability to obtain additional board seats. Section 2.6 discusses previous studies on the compensation of outside directors. Last, section 2.7 summarises studies examining whether director appointments add to the value of a firm.

2.1 Director replacement as a recovery action

The revelation of fraud significantly damages the reputation of culpable firms and, as a result, these firms suffer major losses in their market values (Karpoff, 2012). In response to these losses, fraudulent firms take a variety of recovery actions, which are expected to have positive economic outcomes (Chakravarthy et al., 2014; Karpoff, 2012; Cheng and Farber, 2008; Wilson, 2008; Farber, 2005). For example, Chakravarthy et al. (2014) find that, after the revelation of fraud, culpable firms are likely to increase board independence, change incentive and control systems, dismiss senior executives and announce strategic refocusing. The announcement of these actions leads to a positive market reaction and firms that undertake them are able to enhance their financial reporting credibility.

Correspondingly, Farber (2005) finds that, in comparison to a control sample firms, fraudulent firms have significantly weaker governance characteristics one year prior to the revelation of fraud. However, three years following fraud detection, culpable firms improve their governance by increasing the proportion of outside directors on the board, separating the CEO and chairman position and holding more audit committee meetings. Moreover, Farber (2005) finds that fraudulent firms which undertake these governance improvements are associated with superior long-window stock returns.

The revelation of fraud is also followed by a significant increase in outside director departures (Brochet and Srinivasan, 2014; Marcel and Cowen, 2014; Karpoff et al., 2008; Arthaud-Day et al., 2006, Srinivasan, 2005). Previous studies conclude that these departures are involuntary and are initiated by culpable firms with the aim of recovering from fraud-related reputational losses. For example, Marcel and Cowen (2014) argue that fraudulent firms can enhance their reputation by removing less qualified directors from their board. These directors are perceived to have a lower ability to perform their monitoring and advising functions and hence the removal of these directors signals a firm's intention to improve their governance weaknesses and can contribute to the recovery of the firm (Cowen and Marcel, 2011; Arthaud-Day et al., 2006; Srinivasan, 2005). Accordingly, Marcel and Cowen (2014) find that the revelation of fraud is positively associated with the departure of directors who have less business connections and directors who lack executive experience or accounting, legal or industry qualifications.

Similarly, a number of studies find that culpable firms have a strong incentive to replace directors who are perceived to have a higher accountability for the fraud

(Brochet and Srinivasan, 2014; Karpoff et al., 2008; Arthaud-Day et al., 2006, Srinivasan, 2005). These directors are likely to receive a large amount of criticism and their ability to monitor is likely to be questioned by regulators and investors (Brochet and Srinivasan, 2014; Arthaud-Day et al., 2006). Since the presence of these directors can have a negative impact on a firm's reputation, their removal can also contribute to the recovery of the firm. Hence it has been found that audit committee members, directors with longer tenures and directors who sold shares during the period of the fraud are perceived to be more accountable for the fraud and are more likely to be replaced within the two to three years after the fraud is revealed (Brochet and Srinivasan, 2014; Karpoff et al., 2008; Arthaud-Day et al., 2006; Srinivasan, 2005).

Overall, these findings suggest that, following the revelation of fraud, troubled firms have a strong incentive to reinforce the monitoring and advising ability of their board and remove directors with a questionable ability to provide these services. Hence, irrespective of whether a director was pressured out because he or she had a higher responsibility for the fraud or weaker professional credentials, culpable firms have a strong incentive to replace him or her with a director who has better monitoring and advising skills.

2.2 Experience of the replacement directors

Outside directors with more board experience are argued to have a greater ability to deliver monitoring and advising services and therefore have a greater capacity to contribute to firm performance (Kor et al., 2010; Kroll, 2008; Westphal and Frederickson, 2001). Previous research demonstrates that more experienced directors understand their role more clearly (Kroll, 2008; Porac, Thomas, and Baden-Fuller,

1989) and are also more effective in interpreting business situations (Westphal and Milton 2000). This enables them to identify areas of improvement and ask important probing questions, which enhances their ability to monitor and advise (Kang, 2014). More experienced directors also find it easier to connect with other board members (Westphal, 1999), which increases their influence over board decisions (Hillman and Dalziel, 2003; Westphal and Milton, 2000).

Consistent with these findings, Gray and Nowland (2013) document that the market reaction to director appointment is higher for experienced directors. Moreover, Kang (2014) corroborates these results and finds that boards that consist of more experienced directors have a higher capacity to increase the value of a firm, especially when the firm has suffered from negative performance. In summary, previous studies suggest that appointing more experienced directors enhances the monitoring and advising functions of a board. As such, I predict:

H_1: *Following the revelation of financial fraud, culpable firms are more likely to replace departing directors with more experienced directors.*

2.3 Qualifications of the replacement directors

I expect fraudulent firms to appoint directors who possess legal and accounting qualifications, especially if directors with these qualifications are not present on the board. Previous research suggests that these directors are perceived to possess stronger monitoring and advisory skills, which are particularly important for fraudulent firms, than directors with general managerial experience and other qualifications (Faleye, 2014; Faleye, 2011; Krishnan et al., 2011; Dhaliwal et al., 2010; Dittman et al., 2010; Fahlenbrach et al. 2010). Hence, their appointment improves the overall ability

of the board and signals a culpable firm's intention to recover their governance shortcomings. Moreover, the expertise of directors with legal and accounting qualifications can be particularly useful in the post-fraud context as they have a greater ability to deal with fraud-related consequences, such as increased legal and financing costs.

Legal Experts. The importance of outside directors with legal expertise arises from their ability to manage legal threats. Previous research argues that, as legal risks become more significant and legislation becomes more complicated, the necessity for legal expertise on the board significantly increases (Langevoort, 2007). These directors are more likely to understand the significance of fraud-related legal liability and therefore are able to provide strong monitoring and advice on major legal issues (Krishnan et al., 2011). Outside directors with legal expertise also share the same professional background as corporate lawyers (Krishnan et al., 2011). This provides them with the unique ability to effectively communicate and cooperate with the firm's lawyers. Consequently, these directors are more effective in communicating legal issues to the board, which may allow the board to make more informed decisions.

Overall, findings from prior studies suggest that legal experts have a superior ability to assist the board with legal issues. Hence, the appointment of these directors can significantly benefit fraudulent firms as it may enhance the board's ability to deal with the fraud-related regulatory sanctions, fines and shareholder lawsuits that are often faced by culpable firms following the revelation of fraud (Karpoff, 2012; Karpoff et al., 2008).

Appointing legal experts in the post-fraud period can also significantly contribute to the restoration of the boards' monitoring ability. The considerable litigation risk arising from the discovery of fraud may affect many accounting transactions, such as the estimation of contingent liabilities or disclosures of forward-looking information (Cunningham, 2002). Although firms frequently have in-house general counsel or hire outside legal counsel to help with complex accounting disclosures with legal implications, outside directors are the best candidates to monitor and advise the board on these issues as they are not employees of the firm (Krishnan et al., 2011). This leads to my second hypothesis:

H_{2a}: *Following the revelation of financial fraud, culpable firms are more likely to replace departing directors with legal experts.*

Accounting Experts. Accounting fraud represents a violation of a firm's responsibility to provide truthful financial information to its stakeholders. Once firms misreport their financials, they lose investors' trust which consequently leads to an increased cost of financing (Kravet and Shevlin, 2009; Graham, Li, and Qiu, 2008; Hribar and Jenkins, 2004). The misrepresentation of financials is often attributed to the failure of the board concerning financial reporting oversight. Thus, in order to at least partially restore investors' trust, fraudulent firms may choose to appoint accounting experts to their board as this may enhance the credibility of their financial information.

Previous research demonstrates that outside directors with accounting expertise possess a unique understanding of accounting concepts, which allows them to monitor the financial reporting process in a more effective manner (Dhaliwal et al., 2010; Krishnan and Visvanathan, 2008; Zhang et al., 2007). Accounting experts are more

likely than any other directors to evaluate choices over alternative accounting treatments, key management estimates, judgments and valuations (Beasley et al., 2009).

Moreover, since accounting experts have a superior understanding of the financial reporting process, this allows them to ask important probing questions (Lipman, 2004; Scarpati, 2003; Libby and Luft, 1993). Therefore they are more likely to identify and comprehend financial reporting shortcomings that involve a significant amount of accounting complexity (DeFond et al., 2005). Hence, the presence of accounting experts on the board leads to greater accruals quality (Dhaliwal et al., 2010; Carcello et al., 2009; Be´dard et al., 2004), more conservative accounting (Krishnan and Visvanathan, 2008) and the lower likelihood of restatements and fraud (Agrawal and Chadha, 2005; Abbott et al., 2004). By appointing accounting experts, culpable firms may enhance the monitoring ability of their board and signal to the market that they are committed to restoring their financial reporting legitimacy.

Hence, given the potential benefits associated with the appointment of accounting experts, I expect fraudulent firms to have a strong incentive to appoint such directors following the revelation of fraud. Accordingly, I predict:

H_{2b}: *Following the revelation of financial fraud, culpable firms are more likely to replace departing directors with accounting experts.*

2.4 Firm and director reputation

Previous research suggests that the markets' assessment of an outside director's quality is likely to be influenced by the reputation and prestige of their directorships

(Boivie et al., 2012; Pollock et al., 2010; Podolny, 2005; Sanders and Boivie, 2004). For example, when a firm is perceived to be more reputable because of consistent superior performance, outside directors that serve on the board of this firm are likely to be seen as responsible for this superior performance (Boivie et al., 2012; Graffin et al., 2008; Meindl et al., 1985). In addition, more reputable and prestigious firms are likely to receive significant media coverage (Boivie et al., 2012), which may enhance the visibility and perceived importance of outside directors that serve on the board of these firms (Pollock et al., 2008; Brooks et al., 2003).

Given the visibility and reputational benefits associated with joining more reputable and prestigious firms, previous studies demonstrate that outside directors are likely to exert additional effort to join and continue serving on the boards of such firms. For example, Boivie et al. (2012) use firm performance and media coverage as a measure of firm prestige and find that directors are less likely to voluntarily resign from the boards of more prestigious firms. Similarly, Masulis and Mobbs (2014) use firm size as a proxy of prestige and find that directors with multiple directorships exert more effort on the boards of larger firms in order to secure their position on such boards. Knyazeva et al. (2013) also use firm size to measure prestige and find that executive directors are ready to travel to more distant locations to serve as outside directors of larger firms. Finally, Fahlenbrach et al. (2010) finds that CEOs prefer joining the boards of larger firms as outside directors since these firms provide them with greater prestige.

In contrast, previous research suggests that serving on the boards of firms with a tarnished reputation may damage the reputational capital of outside directors (Marcel and Cowen, 2014; Fahlenbrach, Low, and Stulz, 2013; Wiesenfeld et al., 2008; Kang,

2008; Pozner, 2008; Semadeni et al., 2008; Gales and Kesner, 1994). For example, when a firm damages its reputation by delivering weak performance or engaging in illegal activity, investors are likely to attribute responsibility for these events to a firm's corporate leadership (Pozner, 2008; Wiesenfeld et al., 2008; Kang, 2008; Meindl et al., 1985). In particular, outside directors are likely to be held accountable for poor monitoring and advice and may be perceived to be unsuitable for their roles by their potential employers (Kang, 2008; Hillman and Dalziel, 2003; Weiss, 1995; Spence, 1973). Due to information asymmetry and a high level of complexity, outside directors may be held accountable even when they are not responsible for these negative events (Marcel and Cowen, 2014; Pozner, 2008; Wiesenfeld et al., 2008). In addition, these firms are likely to receive a large amount of criticism from a variety of stakeholders such as the press, regulators, prosecutors and executives of other firms (Wiesenfeld et al., 2008), which may increase the damage to a director's reputation.

Accordingly, previous studies demonstrate that when outside directors anticipate their firm will disclose negative news they become more willing to relinquish their directorships. For example, Fahlenbranch et al. (2013) document an increase in outside director departures prior to a variety of negative events such as earnings restatements, lawsuits and value-destructive acquisitions. Expanding on these findings, Masulis and Mobbs (2014) show that directors with multiple directorships are more likely to relinquish their less prestigious directorship when firm performance suffers. Similarly, Yermack (2004) finds that director turnover is negatively related to the firm's stock return during the year of turnover and the previous year. Lastly, Brown and Maloney

(1999) find that outside directors are likely to resign prior to acquisition bids that result in negative stock returns.

2.5 Career outcomes of outside directors

Although outside directors may choose to resign prior to the announcement of negative events, Dou (2015) finds that they still face negative reputational consequences and experience a reduction in their directorships. Specifically, Dou (2015) documents that directors who choose to leave prior to negative events such as lawsuits or restatements experience greater declines in their directorships than directors who stay. Similarly, a number of studies demonstrate that outside directors who choose to stay on the boards of firms with a tarnished reputation also damage their own reputation and experience a decrease in their board seats.

For example, Ertimur et al. (2012) examine the reputational penalties for outside directors of firms involved in the option backdating scandal and find that directors experienced large reputational losses, which led to a significantly higher likelihood of subsequent turnover at these firms. Fich and Shivdasani (2007) investigate reputational penalties for outside directors of firms sued for alleged financial misrepresentation and find that directors of these firms suffer a significant decline in other board seats held. Likewise, Srinivasan (2005) also documents substantial turnover of outside directors from the boards of firms that restate their earnings.

Overall, these studies find that, regardless of whether directors choose to resign in anticipation of an event that is likely to tarnish a firm's reputation or stay until this event occurs, a director's ability to obtain additional board seats diminishes significantly. However, no previous research investigates whether the director labour

market rewards or penalises outside directors who join firms that already have tarnished their reputation. To investigate this question I explore two competing hypotheses, which are the stigma hypothesis and the experience hypothesis.

Under the stigma hypothesis, joining firms with a tarnished reputation exposes outside directors to the risk of being seen to bear at least some responsibility for the negative events occurring at the firm (Pozner, 2008; Wiesenfeld et al., 2008; Kang, 2008; Meindl et al., 1985). For example, the revelation of financial fraud significantly tarnishes a firm's reputation and as a result it is often followed by weak performance (Farber, 2005) and a variety of negative events such as earnings restatements, lawsuits and AAERs (Karpoff et al., 2014). The announcement of these events reaffirms the failure of firms to provide accurate financial statements and leads to a variety of negative economic consequences such as higher costs of capital or increased transaction costs with customers and suppliers (Chakravarthy et al., 2014; Kravet and Shevlin 2010; Farber, 2005; Hribar and Jenkins 2004; Jensen and Meckling, 1976).

Therefore, when outside directors join fraudulent firms it is possible they are associated with the negative fraud-related consequences despite bearing no responsibility for their occurrence (Pozner, 2008; Wiesenfeld et al., 2008; Kang, 2008; Meindl et al., 1985). As a result, a directors' reputation may be damaged (Marcel and Cowen, 2014; Kang, 2008; Pozner, 2008; Wiesenfeld et al., 2008) and they may experience a decrease in their current and future board seats (Dou, 2015; Ertimur et al., 2012; Fich and Shivdasani, 2007; Srinivasan, 2005; Yermack, 2004). Therefore, according to the stigma hypothesis I predict:

H_{3a}: *Outside directors that join firms after the revelation of financial fraud experience a decline in their other board seats.*

Under the experience hypothesis, the director labour market is efficient and therefore potential employers recognise that outside directors who join the boards of fraudulent firms after the revelation of fraud are not responsible for the wrongdoing. Hence, the negative consequence of financial fraud does not have a negative impact on an outside director's reputation. Moreover, by joining fraudulent firms, outside directors gain valuable experience, which may advance their careers.

For example, Harford and Schonlau (2013) demonstrate that outside directors obtain more future directorships after engaging in M&As, even when they are value-destructive. This finding implies that previous M&A experience is more valuable for the director labour market than the outcome of the transaction. Similarly, Gray and Nowland (2013) document that the previous board experience of outside directors is valued by investors and this finding implies that the demand for director services increases when they have more board experience. Thus, even though outside directors may experience a variety of negative events during their tenure on the board of less reputable fraudulent firms, this experience may be valued by the director labor market.[6] Therefore, according to the experience hypothesis I predict:

H_{3b}: *Outside directors that join culpable firms after the revelation of financial fraud are rewarded with additional board seats.*

[6] Dou (2015) documents that firms that are involved in negative events are more likely to appoint directors who have prior experience in dealing with similar events. Dou (2015) interprets this finding as the director labour market rewarding outside directors for the acquired experience. However, Dou (2015) does not investigate whether directors who join these firms are able to obtain more directorships in the future.

2.6 Compensation of outside directors

A growing number of studies suggest that compensation is an important incentive for outside directors (Fedaseyeu et al., 2014; Boivie et al., 2014; Engel et al., 2010; Linck et al., 2009; Adams and Fereira, 2008; Yermack, 2004). For example, these studies document that outside directors are less likely to relinquish their board seats when they receive higher pay (Masulis and Mobbs, 2014; Boivie et al., 2012) and are more likely to attend board meetings when they are offered higher meeting fees (Adams and Ferreira, 2008). In addition, outside directors are more willing to accept additional workload when firms offer them higher compensation. For instance, Nguyen (2014) finds that boards and committees that meet more often are perceived to exert more effort and therefore receive higher compensation.

Similarly, Fedaseyeu et al. (2014) argue that being a committee member or serving on a board that consists of fewer outside directors requires more work from their directors and find that these factors lead to higher director compensation. These findings are also corroborated by the large body of research that documents an association between firm characteristics, director workload and director pay (Bugeja et al., 2014; Engel, Hayes, and Wang 2010; Linck, Netter, and Yang, 2008, 2009; Brick, Palmon, and Wald, 2006; Linn and Park, 2005; Yermack, 2004). Specifically, these studies find a positive association between compensation offered to outside directors and firm characteristics such as complexity, growth opportunities, potential agency costs, and information asymmetry.

Previous literature also demonstrates that when regulatory or social changes demotivate individuals from serving as an outside director, this is likely to increase the

compensation offered to these individuals (Fedaseyeu et al., 2014; Engel et al., 2010; Linck et al., 2009). For instance, these studies demonstrate that, following the high scrutiny period regarding directors in the early 2000s and after the passage of the Sarbanes-Oxley Act (SOX) in 2002, directors' workload and reputational risk increased significantly (Chen and Moers, 2014; Linck et al., 2009). As a result, outside directors became less willing to serve on the boards of public firms and relinquished some of their directorships. In response, firms significantly increased their compensation (Chen and Moers, 2014; Linck, Netter and Yang, 2009). Specifically, the average compensation for a directorship increased from $70,000 in 1995 to $181,000 in 2006 and $189,000 in 2010 (Fedaseyeu et al., 2014). Therefore, since prior studies suggest that compensation is an important incentive for outside directors, less reputable firms may need to offer higher pay in order to attract new outside directors to the board. Hence, I predict:

H_4: *Outside directors who join firms after the revelation of financial fraud are rewarded with higher compensation.*

2.7 Director replacement and firm value

Previous research demonstrates that the ability of an individual director to contribute to firm value is largely affected by his or her capacity to deal with the specific governance issues faced by a particular firm (Dass et al., 2014; Masulis and Mobbs, 2014; Adams et al., 2013; Field et al., 2013; Fahlenbrach et al. 2010; Dhaliwal et al., 2010; Guner et al., 2008; Agrawal and Knoeber, 2001). Hence, firms have a significant incentive to appoint directors who possess the knowledge and expertise that allows them to deal with the governance problems they face.

For example, Agrawal and Knoeber (2001) find that firms that are sensitive to regulatory changes and politics are more likely to appoint directors with legal and political expertise as these directors have a better ability to deal with political issues. Similarly, Field et al. (2013) find that IPO firms can significantly benefit from appointing busy directors and hence busy boards are common among these firms. Gray and Nowland (2014) find that certain types of expertise are clustered in different industries. For instance, doctors have a better knowledge about the health care industry and as a result they are more prevalent on the board of the firms that operate in that industry.

In addition, previous studies show that, when a director is perceived to be valuable to a firm, the announcement of his or her appointment leads to a positive market reaction. For example, previous research argues that most firms can benefit from the monitoring and advice of a director with experience in related industries (Dass et al., 2014; Faleye et al., 2013). Accordingly, Dass et al. (2014) document that the appointment of such directors leads to a positive market reaction of around 2.5%. Similarly, a number of studies argue that hiring a director who is CEO at another public firm also enhances the performance of a board (Fahlenbrach et al., 2010; Fich, 2005). Fich (2005) finds that the appointment of an outside CEO is associated with a more positive stock market reaction than the appointment of outside directors with other backgrounds. However, Fahlenbrach et al. (2010) demonstrate that this positive market reaction occurs only around the first CEO-director appointment and does not occur when such a director is already present on the board.

White et al. (2014) investigate market reactions around the appointment of directors with an academic background. They argue that the appointment of business professors is the most beneficial for lesser-known firms as these firms can significantly benefit from the reputation of these individuals. Correspondingly, they find that such firms experience a more positive market reaction around the appointment of business professors. In accordance with these previous findings, I expect that fraudulent firms are likely to replace departing directors with directors who are more valuable to the firm, such as lawyers and accountants, and therefore I predict:

H_5: *Fraudulent firms experience a positive market reaction around the appointment of replacement directors.*

I provide evidence for these hypotheses below.

Chapter 3

Sample and variable definitions

This chapter discusses the sample and data used to empirically test the predictions. Specifically, Section 3.1 describes the sample selection process used in the thesis, while Section 3.2 defines the variables used in the empirical tests and provides theoretical justification for the use of these variables.

3.1 Sample

The evidence in this thesis is based on a sample of US listed firms that were involved in financial fraud during the period 2003 to 2011.[7] To identify fraudulent firms I use the Securities Class Action Clearinghouse (SCAC) database at Stanford Law School, which provides public information about federal class action securities fraud litigation. Using this database, I manually identify 720 lawsuits that were filed from January 1, 2003 to December 31, 2011, and that were settled by October 2014. I restrict my attention to settled lawsuits and disregard ongoing or dismissed lawsuits as this reduces the likelihood of including frivolous cases in the sample (Dyck et al., 2010).[8]

Additionally, my sample is restricted only to class action lawsuits where firms are named as defendants for breaching Rule 10(b)-5 of the SEC Act of 1934 and/or Section 11 of the Securities Act of 1933. Rule 10(b)-5 forbids, among other things, 'the intent to deceive, manipulate, or defraud with misstatements of material fact made in connection to financial condition, solvency and profitability.' Section 11 intends to ensure accurate disclosure to investors during the offer and sale of securities.[9]

[7] I only consider lawsuits that were filed after January 1, 2003 due to the introduction of SOX in 2002. Brochet and Srinivasan (2014) find that, after 2002, directors' responsibility for corporate failures has increased and as a result the likelihood of their replacement has also increased.

[8] All cases in the sample resulted in a cash settlement. The average settlement amount is $23,632,328 while the median settlement amount is $10,000,000.

[9] Only 8 out of 262 fraudulent firms are named defendants for breaching Section 11 without breaching Rule 10(b)-5. In untabulated analysis I investigate the robustness of the findings by excluding these cases from all the tests. Results remain unchanged.

Therefore, 33 lawsuits that did not involve allegations of material financial representations and breaches of Rule 10(b)-5 or Section 11 are excluded from the sample.

Following the identification of fraudulent firms, I read through class action complaints in search of the date of the initial revelation of fraud, which is when the public first learns about the existence of the fraud. I use this date to identify directors who joined fraudulent firms after the misconduct was publicly revealed and have no responsibility for its occurrence. The director data is collected from BoardEx. Since I require fraudulent firms to have director data for the year preceding the fraud revelation date and three years following this event, I eliminate 184 firms which are not covered by BoardEx, 74 firms that are covered by BoardEx but are missing directorship data around the required period and 108 companies that were delisted within three years following the revelation of fraud.[10] I further delete three firms that did not have accounting data available on the Compustat database. Also, in order to avoid including the same observations multiple times, I delete nine lawsuits that were filed against the same company within a year of each other or for the same misconduct.

I construct a sample of matched control firms and use a similar procedure to that described in Agrawal and Cooper (2015), Hass et al. (2015), Schrand and Zechman (2012) and Feng et al. (2011) . Each fraudulent firm is matched with one non-sued firm in Compustat in the same industry and with total assets in the 80 – 120 percent range of the fraudulent firm's total assets in the year immediately prior to the revelation of fraud. The industry is defined using 2-digit GICS codes. I ensure that each matched firm

[10] Out of 184 firms that are not covered by Boardex, 78 are headquartered outside the USA, which represents the majority of the foreign firms that were present in the original sample.

was not subject to a lawsuit five years prior to the revelation of fraud or any time following the revelation of fraud by manually searching though the SCAC database. In addition, in order to investigate characteristics of the appointed directors over a two-year period following the revelation of fraud, I only keep matched firms that remained listed for at least three years following the matching year.

An alternative matching technique used in the literature is propensity-score matching. Although propensity-score matching does not alleviate omitted correlated variable bias, it is considered to be a more advanced technique in addressing potential confound effects related to observable variables (Armstrong et al., 2010; Rosenbaum, 2002; Rosenbaum and Rubin, 1983). According to Armstrong et al. (2010)to the extent it is possible to achieve covariate balance, propensity-score matching, removes variation in observable potentially confounding variables to isolate the effect of the treatment of interest.

However, using the propensity-score matching technique in this thesis is likely to induce significant bias in the control sample. The first step of propensity-score matching is the estimation of a model that provides the probability of a firm revealing its fraudulent behaviour (i.e., the treatment) conditional on observable features of the firm (e.g. accrual quality). Next, I would use propensity scores obtained from the first step, to form matched pairs of firms that have characteristics of a fraudulent firm, however, which do not publicly reveal fraud. Since a large amount of fraudulent firms are likely to be unidentified (Dechow et al., 2011), identifying firms with similar characteristics to fraudulent firms is likely to bias the control sample towards firms that are engaged in fraud but which are undetected.

Using a control sample that is biased towards the inclusion of fraudulent firms is likely to induce a significant bias in the analysis. While undetected, fraudulent firm management is likely to have strong incentives to not improve their governance characteristics in order to continue their fraudulent activity. Using such a control sample is likely to bias our tests towards finding the relation between the treatment and the outcome variables. [11]

The matching approach used in this thesis is likely to result in a lower likelihood of bias and additionally entails some of the key benefits provided by the propensity-score matching technique. First, since I identify the matched sample based on the treatment variable rather than the outcome variable, the matching process does not require any assumptions related to the functional form between the outcome variable and the treatment variable of interest. Second, similar to propensity-score matching technique I deliberately induce variation in the treatment variable; therefore, the design does not induce low power due to the low variation in the treatment variable. Due to size constraints and the further requirements for non–fraudulent firms to have Boardex data, 28 firms do not have matches, resulting in a final sample of 261 fraudulent firms. A breakdown of the sample selection process is provided in Table 1 Panel A.

[11] Understanding the potential governance changes undertaken by firms that engage in fraud but are undetected is an empirical question and is likely to provide some important insights. However, due to significant costs associated with additional data collection, I do not investigate this question in the thesis. The data collection costs arise from manually ensuring that control firms are covered by Boardex , were not named in the security class action lawsuits and were not delisted during the required period. Investigating this question will also require additional manual coding of legal and accounting experts, some hand collection of the compensation data, manual identification of the director appointment dates and manual verification of the confounding events for the market reaction tests.

Table 1 Sample Construction (Panel A)		
Panel A: Sample Selection (Cases of fraud)		
Total number of settled cases		720
Deletions:		
Fraud is not related to Rule 10(b)-5 or section 11	33	
Not covered by Boardex	184	
No directorship data around the fraud period	74	
Delisted within 3 years following the revelation of fraud	108	
Firms listed less than one year prior to the revelation of fraud	20	
No Compustat data	3	
No matched firms with available data identified	28	
Multiple cases per firm during the same period of time	9	
		459
Total sample size		261

Panel B: Frequency of fraudulent firms by industry and by year

2 digit GICS	Energy	Materials	Industrials	Cons. Disc.	Cons. staples	Health Care	Financials	I.T.	Telco	Utilities	Total
	6	8	22	42	12	59	34	72	1	5	261
	2.30%	3.07%	8.43%	16.09%	4.60%	22.61%	13.03%	27.59%	0.38%	1.92%	100%

Filing Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
	39	50	38	31	29	34	17	12	11	261
	14.94%	19.16%	14.45%	11.88%	11.11%	13.03%	6.51%	4.60%	4.21%	100%

Table 1 Panel B demonstrates the frequency of fraudulent firms by industry and year. The sample is not dominated by any particular industry, with the highest amount of fraud occurring in the I.T. (27.59%) and Healthcare (22.61%) industries. Similarly, the sample is not dominated by any particular year. There is a decrease in the number of frauds from 2009 since there are more ongoing lawsuits that are not settled in the later part of the sample period.

3.2 Variable Definitions

Experience and Qualification tests

Table 2 provides a summary of the variables that are included in the regression models.

Table 2 Variable Definitions	
Director Characteristics	
Fraud	Indicator variable that equals one if a director is from a fraudulent firm
Experience	Indicator variable that equals one if the total number of a director's previous directorships as an outside director is higher than the average number of previous directorships for all appointed directors in the sample (Boardex)
Qualified	Indicator variable that equals one if director is classified as a lawyer or an accountant (Boardex)
Lawyer	Indicator variable that equals one if a director is classified as a lawyer (Boardex)
Accountant	Indicator variable that equals one if a director is classified as an accountant (Boardex)
Directorship Change	This variable is defined as the raw change in the number of other directorships held by each individual director over a three-year period (Boardex)
Total Compensation	Sum of cash and equity pay per director (Execucomp/Handcollection)
Appoint	Indicator variable that equals one if a director is appointed during the year (Boardex)
Departed	Indicator variable that equals one if a director departs during the year (Boardex)
Boards at t=0	Number of directorships held by a director at the time of the appointment (Boardex)
Tenure	Number of years a director has served on the board of the firm (Boardex)
AgeYrs	Age of a director in years (Boardex)
Governance Characteristics	
Board Size	Number of directors and executives on the board (Boardex)
Indprcnt	Number of outside directors divided by the total number of directors and executives on the board. (Boardex)
ExecChairman	An indicator variable that equals one if the CEO and the chairman in the firm are the same person and zero otherwise (Boardex)
%IndprcntAudit	Number of outside directors serving on the audit committee divided by the total number of directors and executives on the audit committee. (Boardex)
CEO Departed	Indicator variable that equals one if the CEO leaves the firm during the year (Boardex)
Firm-Level Characteristics	
Ln(Asset)	Natural logarithm of total assets (#at) (Compustat)
ROA	Net income (#ni) less extraordinary items (#xido) divided by total assets (Compustat)
AvgROA	The average of ROA over a three-year period (Compustat)
MTB	The sum of total assets (#at) and market value of equity (prcc_f*csho) less the book value of equity (#ceq), divided by total assets (#at) (Compustat)
Capex	Capital expenditures divided by sales (#capx / #sale) (Compustat)
R&Dexp	The ratio of research and development expenses (#xrd) to total assets (#at)
Leverage	The ratio of long-term (#dltt) and short-term debt (#dlc) over total assets (#at)

Dependent variables in the experience and qualification regression models are *Experience* and *Qualified.* The variable *Experience* is an indicator variable that equals to one if the total number of a director's previous directorships as an outside director is higher than the average number of previous directorships for all appointed directors in the sample. This variable is calculated using information provided by Boardex.

The variable *Qualified* is used to demonstrate if a director is a legal or accounting expert. Legal expert is defined as an individual who has working experience as a lawyer and/or has a degree in law, such as JD, LL.M., or LL.D. This definition of a legal expert is

consistent with Krishnan et al. (2011). Accounting experts are also defined in accordance with previous literature (Dhaliwal, Naiker and Navissi, 2010; Krishnan and Visvanathan 2008; DeFond and Franci, 2005). Specifically, an accounting expert is defined as an outside director with work experience as a certified public accountant, chief financial officer, Vice President of finance, financial controller or any other major accounting position. All of the information on previous work experience and education is obtained from Boardex.

Previous studies suggest that a firm's governance structure determines the characteristics of incoming directors: therefore I control for a number of governance characteristics in the experience and qualification tests (White et al., 2014; Fahlenbrach et al., 2010; Linck et al., 2008). For example, firms that have an outside chairman or have a higher proportion of outside directors on the board are perceived to have stronger governance and are more likely to make decisions that contribute to shareholders' value (Boivie et al., 2012; Finkelstein et al., 2009; Coles et al. 2008; Farber, 2005). As a result, these firms may choose directors who are more beneficial to shareholders, and this may be reflected in the characteristics of the appointed directors. In addition, Fahlenbrach et al. (2010) suggest that directors themselves evaluate a firm's governance structure prior to joining their board. For instance, Fahlenbrach et al. (2010) find that a CEO is more likely to join a firm as an outside director if that firm has a governance structure that is similar to the firm that is led by that CEO. Therefore I use the indicator variable *ExecChairman* to control for the independence of the Chairman of the board and I use *%IndependentDir* to control for the proportion of outside directors on the board.

I also control for board size since prior research suggests that the size of the board is associated with the characteristics of the appointed directors (White et al., 2014; Fahlenbrach et al., 2010; Linck et al, 2008). For example, White et al. (2014) find that firms that appoint academic directors are more likely to have larger boards. In addition, a number of studies document a relationship between CEO departure and simultaneous changes in the board of directors (Yermack, 2004; Farrell and Whidbee, 2000; Hermalin and Weisbach, 1988). To reflect this link, I use the variable *CEO departed*, which is an indicator variable that equals one if the CEO leaves the firm during the year.

I also control for a variety of firm-level characteristics, as they may influence the level of experience and qualifications of the directors who are appointed following the revelation of fraud. For example, previous research demonstrates that outside directors prefer to serve on the boards of larger and more profitable firms (Masulis and Mobbs, 2014; Boivie et al., 2012). Joining the boards of these firms provides directors with more prestige and enhances their career opportunities (Fich, 2005; Yermack, 2004). Therefore I use the variable *Ln(Asset),* which is the natural logarithm of the dollar value of total assets, to control for firm size and I use the variable *ROA,* which is measured as operating income divided by total assets, to control for firm performance. Previous research also demonstrates that firms with different growth opportunities and investment policies require different types of monitoring and advisory functions from outside directors, which may impact upon the characteristics of the directors whom they appoint to their boards (White et al., 2014; Field et al.,

2013; Fahlenbrach et al., 2010). Hence I use *MTB* to control for a firm's growth opportunities and I use *Capex* to capture the effect of a firm's investment policies.

Career outcome tests

The variable *Directorship Change* is used as the dependent variable in the career outcome regression models. This variable is defined as the raw change in the number of other directorships held by each individual director over a three-year period. I use a number of individual director and firm characteristics to isolate the effect of firm reputation on the change of director board seats. Dou (2015), Ertimur et al. (2012) and Srinivasan (2005) demonstrate that directors who depart from the boards of culpable firms are less likely to obtain additional directorships on other boards. I control for this effect using the variable *Departed,* which equals one if a director departed during the year. Previous studies also document that directors serving on more boards are less likely to obtain additional board seats as they may not have sufficient time to take on additional workload (Dou, 2015; Harford and Schonlau, 2013; Ertimur et al., 2012; Yermak, 2004). I control for the number of board seats held by a director using variable *Boards at t=0.* Lastly, to mitigate the retirement effect of outside directors, I control for director age using variable *AgeYrs.*

I also control for firm size using the variable *LnAssets.* Prior literature argues that larger firms are considered to be more reputable and that serving on the board of these firms enhances directors' visibility and enables them to obtain more directorships in the future (Masulis and Mobbs, 2014; Knyazeva, Knyazeva and Masulis, 2013). Previous studies also demonstrate that firm performance is seen to be at least partially associated with a director's ability to provide their services and therefore can impact

upon their ability to obtain additional board seats (Brochet and Srinivasan, 2014; Boivie et al., 2012; Yermack, 2004). To control for firm performance I use the variable *AvgROA,* which is an average ROA over a three years.

Compensation tests

The dependent variable *Total Compensation* is defined as the sum of cash and equity pay per director, where equity pay includes options and stock awards**.** I follow earlier studies and control for a variety of firm specific characteristics that are likely to influence the size of director compensation (Bugeja et al., 2014; Nguyen, 2014; Fedaseyeu et al., 2014; Engel et al., 2010; Linck et al., 2009). For example, previous literature has widely documented that director compensation is positively associated with measures of task complexity and the need for monitoring. These studies suggest that serving on the board of larger firms, growth firms or firms with larger investment opportunities requires more effort from outside directors and therefore firms with these characteristics are likely to offer larger director compensation.

In accordance with this argument, I use the natural logarithm of assets (*LnAssets*) as a proxy for firm size[12] and I use the market to book ratio (*MTB*), R&D Expenditure (*R&Dexp*) and Capital Expenditure (*Capex)* as a proxy for growth and investment opportunities (Penman, 1996; Gaver and Gaver, 1993; Matolcsy et al., 2004). Previous research also argues that the monitoring role of outside directors may be reduced when a firm is actively monitored by debt holders (Jensen, 1986) therefore I control for leverage (*Leverage). Leverage* is defined as the ratio of long-term and short-term debt

[12] In untabulated results I also use the natural logarithm of market value and natural logarithm of sales as a proxy for firm size. All three proxies are positively associated with the size of director compensation. However, in some tests the choice of a size proxy alters the significance and sign of other control variables.

over total assets. I also control for firm performance using return on assets (*ROA*), as better performing firms are expected to provide greater compensation to their board members.

In addition, I also control for two governance characteristics. Bargaining theory suggests that director compensation is determined by the negotiation process between the board and the CEO (Ryan and Wiggins, 2004; Hermalin and Weisbach, 1998). Therefore, I use the percentage of outside directors on the board (*IndPrcnt)* to measure the board's negotiation power. I also control for board size (*Board Size*) as I expect that the per-director workload is smaller for firms with larger boards and therefore these directors may receive lower pay.

Chapter 4

Research design and empirical results

Chapter 4 presents the research design used in this thesis and the results from the empirical investigation. Section 4.1 demonstrates the descriptive statistics for the variables used in this study, while Section 4.2 provides a univariate analysis of directors' experience and qualifications. Sections 4.3 through 4.7 describe the experimental design of the thesis and provide a multivariate analysis of directors' experience, qualifications, career outcomes, and compensation, as well as the market reactions to the appointment of the replacement directors.

4.1 Descriptive Statistics

Table 3 provides descriptive statistics for director and firm-level characteristics in the year immediately prior to the revelation of fraud.

Table 3 Descriptive statistics for fraudulent and matched non-fraudulent firms in the year immediately prior to the revelation of fraud

	Fraudulent Firms		Matched Sample			
Variable	Mean	Median	Mean	Median	t-Stat for Mean Difference	Z-Stat for Median Difference
Director Characteristics						
Director Experience	2.650	2.400	2.629	2.333	0.191	0.147
%Qualified	0.345	0.333	0.313	0.300	1.630	1.491
%Lawyers	0.135	0.125	0.114	0.090	1.652	1.685*
%Accountants	0.209	0.200	0.199	0.166	0.684	0.517
Tenure	6.926	6.212	8.028	7.550	3.387***	3.604***
Age	59.316	59.777	60.354	60.428	2.224**	1.969**
Governance Characteristics						
Board Size	8.540	8.000	8.896	8.000	1.409	1.062
Indprcnt	0.689	0.714	0.730	0.750	3.109***	3.091***
ExecChairman	0.701	1	0.689	1	0.284	0.285
%IndependentDirAudit	0.962	1	0.989	1	3.125***	2.799***
Firm-Level Characteristics						
Total Assets	15478.75	736.03	16276.68	714.284	0.118	0.057
Capex	0.161	0.037	0.067	0.033	3.241***	1.399
MTB	1.499	1.527	1.510	1.528	0.495	0.301
ROA	-0.024	0.026	0.028	0.044	3.558***	3.861***

The table shows mean and medians of director, governance and firm-level characteristics for fraudulent firms and the control sample of firms. *%Lawyers*, *%Accountants* are calculated as the proportion of lawyers and accountants to the total number of outside directors on the board. *Tenure* is the number of years a director has served on the board of the firm. *AgeYrs* is the age of a director in years. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *ExecChairman* is an indicator variable that equals one if the CEO and the chairman in the firm are the same person and zero otherwise. *Total Assets* is total assets. *Capex* is capital expenditures divided by sales. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *ROA* is net income less extraordinary items divided by total assets.The last two columns provide *t*-statistics for the mean comparison and the *Z*-statistics for Wilcoxon rank sum tests of the median difference. The superscripts ***, **, and * denote significance at 1%, 5%, and 10% confidence levels

While there is no statistical difference between the size of fraudulent and control firms, there are significant differences between some of the director characteristics. Table 3 shows that fraudulent firms are more likely to have younger directors, who are on average 59.32 years old. The average tenure of these directors is 6.93 years, which is also lower than the tenure of the directors in the control sample. Compared to previous studies the average age and tenure of directors in my sample is similar to Brochet and Srinivasan (2014).

In terms of prior director experience, there is no statistically significant difference between directors in fraudulent firms and directors present on the board of control

firms. The average number of prior board seats for directors in fraudulent firms is 2.65 while the average number of prior board seats for directors in the control set of firms is 2.63. Interestingly, there is also no significant difference in the proportion of legal and accounting experts between the fraudulent and control sample of firms in the year prior to the revelation of fraud. The average proportion of legal and accounting experts on the board of fraudulent firms is 13.5 percent and 20.9 percent respectively, which is similar to the findings in Krishnan et al. (2011).

Table 3 also shows that fraudulent firms are likely to have weaker governance characteristics. Specifically, in contrast to the control firms, fraudulent firms have a lower percentage of independent directors (68.9%) on their board and a lower percentage of independent directors on their audit committees (96.2%). These results are consistent with prior studies that find significant differences in governance structures between fraudulent firms and control non-fraudulent firms (Farber, 2005; Dechow et al., 1996). For example, Farber (2005) documents that fraudulent firms are more likely to have a lower percentage of outside directors on their board. Table 3 also shows that fraudulent firms are likely to have weaker operating performance, which is on average -2.4%. These findings are similar to Brochet and Srinivasan (2014) and Hennes et al. (2008).[13]

[13] A correlation matrix is presented in Appendix 1. There are no large correlations between variables used in the same regressions. VIF and Tolerance tests were conducted after estimating the regression models which further confirmed the absence of significant multicollinearity.

4.2 Univariate Analysis of Directors' Experience and Qualifications (H1 and H2)

Table 4 compares the mean and median experience and qualifications of outside directors who are present on the boards of fraudulent firms and a control sample of firms before and after the fraud is revealed.

Table 4 Univariate analysis of average experience and proportion of qualified directors at the start of the year

Variable	Firm	Start of Year -1		Start of Year +1		Start Year +2		Start Year +3		End of Year +3	
		Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Exp	Fraud	2.650	2.400	2.741	2.600	2.789	2.666	2.769	2.500	2.877	2.714
	Control	2.629	2.333	2.680	2.428	2.684	2.500	2.716	2.500	2.746	2.600
	t/z	0.191	0.147	0.553	0.615	0.957	0.898	0.419	0.066	1.212	0.891
%Qual	Fraud	0.345	0.333	0.362	0.333	0.384	0.333	0.395	0.400	0.424	0.400
	Control	0.314	0.300	0.327	0.333	0.328	0.333	0.329	0.300	0.341	0.333
	t/z	1.630	1.491	**1.888***	**2.074****	**3.107*****	**3.017*****	**3.725*****	**3.658*****	**3.808*****	**3.216*****
%Law	Fraud	0.135	0.125	0.137	0.125	0.143	0.125	0.143	0.142	0.141	0.142
	Control	0.114	0.091	0.113	0.100	0.112	0.111	0.106	0.090	0.109	0.090
	t/z	1.653	**1.685***	**1.914***	**1.796***	**2.443****	**2.029****	**3.006*****	**2.753*****	**2.589*****	**2.206****
%Acc	Fraud	0.210	0.200	0.226	0.200	0.241	0.200	0.252	0.250	0.267	0.250
	Control	0.199	0.167	0.213	0.200	0.215	0.200	0.222	0.200	0.231	0.200
	t/z	0.685	0.605	0.797	1.028	**1.814***	**2.127****	**2.076****	**2.444****	**2.508****	**2.899*****

The table compares means and medians of experience and qualifications of outside directors who are present on the boards of fraudulent firms and a control sample of firms at the beginning of each individual year, starting from one year prior to the revelation of fraud up until three years after the fraud was revealed. *t*-statistics are used for the mean comparison and the Wilcoxon rank sum tests are used for the median difference. The superscripts ***, **, and * denote significance at 1%, 5%, and 10% confidence levels.

These variables are measured at the beginning of each individual year, starting from the year prior to the revelation of fraud (Year -1) up until three years after the fraud is revealed (Year +3). Table 4 demonstrates that, in the four-year period around the revelation of fraud, the average experience of outside directors of fraudulent firms is not statistically different to the average experience of outside directors of the control sample of firms. This suggests that the director replacement process undertaken by fraudulent firms after the revelation of fraud does not result in a more experienced board in comparison to the control sample of firms.

Table 4 also shows that at the start of Year -1 there is no statistical difference between the proportion of qualified directors on the board of fraudulent firms and control firms. However, a year later, which is the beginning of the Year+1, the proportion of qualified directors on the boards of the fraudulent firms (36.2 %) becomes significantly higher than the proportion of qualified directors on the boards of the control sample of firms (32.7%). This difference becomes even more significant at the beginning of Year +2 and persists up until the end of Year +3.

This divergence in the proportions of qualified directors between the two sets of firms is driven by both legal and accounting experts. There is weak evidence that fraudulent firms have more legal experts on their board in comparison to the control sample of firms starting from Year -1. This difference becomes more significant over time and is especially pronounced at the beginning of Year +2. In contrast, the difference in the proportion of accounting experts between the two sets of firms is insignificant at the beginning of Year-1 and Year + 1. However, during Year +1, fraudulent firms significantly increase the representation of accounting experts on their boards. As a result, at the start of Year +2, the percentage of accounting experts on the boards of fraudulent firms (24.1%) is statistically higher than the percentage of accounting experts on the boards of the control set of firms (21.5%). This difference becomes more significant in subsequent years and also persists up until the end of Year +3. Overall, as predicted in H2, these results suggest that in the post-fraud period culpable

firms are more likely to appoint qualified directors to their boards in comparison to the control sample of firms. [14]

4.3 Multivariate Analysis of Directors' Experience (H1)

To examine whether fraudulent firms appoint more experienced directors following the revelation of fraud (H1), I estimate the following logit regression model:

$$Experience_i = \alpha + \beta_1 Fraud_i + \beta_2 \%Directors\ Depart_i + \beta_3 \%IndDir_i + \beta_4 ExecChairman_I + \beta_5 Ln(Asset)_i + \beta_6 Capex_i + \beta_7 Tobin_i + \beta_8 ROA_i + \varepsilon \quad (1)$$

In this model, the dependent variable *Experience* is a binary variable that equals one if the total number of a director's previous directorships as an outside director is higher than the average number of previous directorships for all appointed directors in the sample. The main variable of interest is *Fraud*, which is an indicator variable that takes the value of one for directors who were appointed by the fraudulent firms and a value of zero for directors appointed by non-fraud control firms.

The regression results on experience of outside directors are presented in Table 5.

[14] Appendix 2 compares the changes in the average experience and proportion of qualified directors of fraudulent and the control sample of firms. Appendix 2 confirms the results in Table 4.

Table 5 Logit regression for the likelihood of the appointment of experienced directors using model (1)					
Variable	Predicted	Three years	T-1	T+1	T+2
		(1)	(2)	(3)	(4)
Fraud	+	**0.283***	**0.599****	**0.472***	-0.027
		(1.837)	**(2.404)**	**(1.812)**	(-0.103)
%Directors depart	?	0.894**	0.902	0.886	1.217**
		(2.293)	(1.039)	(1.127)	(1.965)
CEO departed	?	0.165	0.107	0.118	0.266
		(1.135)	(0.244)	(0.371)	(0.844)
Board Size	?	-0.064*	-0.076	-0.094	-0.045
		(-1.826)	(-1.403)	(-1.624)	(-0.789)
Indprcnt	?	0.853*	0.838	-0.091	3.170***
		(1.740)	(1.231)	(-0.100)	(2.751)
ExecChairman	?	0.167	-0.242	0.166	0.381
		(1.143)	(-0.952)	(0.655)	(1.468)
Ln(Asset)	?	0.223***	0.299***	0.212**	0.190**
		(4.782)	(4.127)	(2.509)	(2.114)
Capex	?	0.086	0.185	-0.011	0.096
		(0.536)	(0.724)	(-0.054)	(0.078)
MTB	?	0.669**	0.976*	-0.072	1.054
		(2.054)	(1.741)	(-0.135)	(1.510)
ROA	?	-0.567	-0.832	0.101	-0.915
		(-1.075)	(-0.980)	(0.121)	(-1.095)
Constant	?	-3.878***	-4.488***	-1.778	-6.258***
		(-4.763)	(-3.275)	(-1.291)	(-3.954)
Directors		1,133	349	389	395
Wald chi2		48.68***	27.42**	17.54*	21.52**
Pseudo R^2		0.0341	0.0538	0.0411	0.0531

This table presents Logit regressions of outside director experience on various firm and director-specific determinants. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. The dependent variable is *Experience*, which is a binary variable that equals one if the total number of a director's previous directorships as an outside director is higher than the average number of previous directorships for all appointed directors in the sample. *Fraud* is an indicator variable and takes the value of one for directors who were appointed by fraudulent firms and zero for directors who were appointed by the control non-fraudulent firms. *%Directorships Depart* is defined as the number of outside directors that departed during the year divided by the total number of outside directors on the board. *CEO Departed* is an indicator variable that equals to one if the CEO leaves the firm during the year. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *ExecChairman* is an indicator variable that equals one if the CEO and the chairman in the firm are the same person and zero otherwise. *LnAssets* is a natural logarithm of total assets. *Capex* is capital expenditures divided by sales. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *ROA* is net income less extraordinary items divided by total assets. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

Column (1) reports the results for all outside directors who joined fraudulent firms during the three-year period around the revelation of fraud. The remaining three columns compare the experiences of appointed directors for each year separately. Since variables are measured at the director level, standard errors are clustered by firm in all regressions. Column (1) demonstrates that the variable *Fraud* is positive and significant at the 10% level, which suggests that fraudulent firms appoint more

experienced directors in comparison to a control sample of firms. A similar result is found in column (2), suggesting that fraudulent firms appoint more experienced outside directors in the year prior to the revelation of fraud. This result could be driven by the fact that the board of directors is likely to be aware of some governance failures even before the fraud is publicly revealed. Therefore, they appoint more experienced directors as this may enhance their ability to deal with these governance failures. Column (3) demonstrates that fraudulent firms appoint more experienced outside directors during the first post-revelation year. This result is consistent with H1, which argues that fraudulent firms have strong incentives to recover their reputation, hence they are likely to appoint more experienced directors to their board as these directors possess stronger monitoring and advisory skills.

In terms of the control variables, the variable *%Director depar*t is positive and significant in columns (1) and (4). This result suggests that there is a positive relation between the number of directors departing during the year and the experience of the replacement directors. *Ln(Asset)* is also positive and significant in all four columns. This is consistent with previous studies, which argue that more experienced directors prefer to serve on the board of larger and more prestigious firms (Masulis and Mobbs, 2014; Knyazeva, Knyazeva, and Masulis, 2013; Fahlenbrach et al., 2010). For example, Masulis and Mobbs (2014) find that directors are more likely to exert more effort and stay on the board of the firm if it represents their largest directorship. Similarly, Knyazeva, Knyazeva, and Masulis (2013) and Fahlenbrach et al. (2010) document that more reputable firms have a greater ability to attract experienced directors from further geographical locations.

Moreover, positive and significant coefficients on the variables *MTB* and *Indprcnt* suggests that firms with more growth opportunities and more independent boards are more likely to attract experienced outside directors to their board. In contrast, the negative and significant coefficient on the variable *Board Size* indicates that firms with larger boards attract less experienced directors.

In additional testing I use an alternative measure of experience, which is the number of board seats previously possessed by an individual director multiplied by the average number of years this director was present on those boards. Similar to equation (1), I use this measure of experience to create an indicator variable *Experience,* which equals one if the directors' years of experience as an outside director exceed the average experience for all appointed directors in the sample. The results are demonstrated in Appendix 3. These results confirm the findings in Table 5 and demonstrate that fraudulent firms are more likely to appoint more experienced directors in the year following the revelation of fraud. However, in contrast to the results in Table 5, the findings in Appendix 3 do not indicate that fraudulent firms appoint more experienced outside directors in the year prior to the revelation of fraud.

4.4 Multivariate Analysis of Directors' Qualifications (H2)

To examine whether following fraud revelation these firms are able to appoint more qualified directors to their board (H2) I specify the following logit regression model:

$$Qualified_i = \alpha + \beta_1 Fraud_i + \beta_2 Qualified\ year\ start_i + \beta_3 Qualified\ departed_i + \beta_4 CEO\ Departed_i + \beta_5 Board\ Size_i + \beta_6 \%IndDir_i + \beta_7 ExecChairman_i + \beta_8 Ln(Asset)_i + \beta_9 Capex_i + \beta_{10} Tobin_i + \beta_{11} ROA_i + \varepsilon \quad (2)$$

The dependent variable *Qualified* refers to the likelihood a company appoints an outside director who is either a legal or an accounting expert. The main variable of interest is *Fraud*, which is a categorical variable that takes the value of one for fraudulent companies and a value of zero for a matched sample of firms. The variables *Qualified Year Start, Lawyers Year Start* and *Accnt Year Start* are used to control for the proportion of qualified outside directors who were present on the board at the beginning of the year in which the new director was appointed to the board. *Qualified departed* is used to control for the number of qualified outside directors who departed during the same year as the newly appointed director.

Table 6 presents results for the analysis of the association between the likelihood of a qualified director appointment and the revelation of fraud.

Table 6: Logit regression for the likelihood of a qualified director appointment using model (2)				
Variable	Predicted	*Qualified*	*Lawyer*	*Accountant*
		(1)	(2)	(3)
Fraud	*+*	**0.305****	0.100	**0.376****
		(2.180)	(0.447)	**(2.566)**
Qualified Year Start	*-*	-1.252***		
		(-3.587)		
Qualified departed	*+*	6.427***		
		(7.571)		
Lawyers Year Start	*-*		0.324	
			(0.400)	
Lawyers departed	*+*		7.237***	
			(4.591)	
Accnt Year Start	*-*			-2.338***
				(-4.415)
Accnt departed	*+*			8.742***
				(6.801)
CEO departed	*?*	0.487***	0.543**	0.421***
		(3.589)	(2.547)	(2.910)
Board Size	*?*	0.044	0.023	0.043
		(1.369)	(0.509)	(1.300)
Indprcnt	*?*	0.005	-0.775	0.386
		(0.011)	(-1.146)	(0.800)
ExecChairman	*?*	-0.118	-0.025	-0.173
		(-0.860)	(-0.116)	(-1.146)
Ln(Asset)	*?*	0.110**	0.113	0.074
		(2.303)	(1.583)	(1.411)
Capex	*?*	0.033	0.138	-0.147
		(0.206)	(0.564)	(-0.687)
MTB	*?*	0.306	-0.186	0.214
		(1.146)	(-0.397)	(0.719)
ROA	*?*	-0.330	-0.286	-0.410
		(-0.959)	(-0.438)	(-1.167)
Constant	*?*	-2.930***	-3.227***	-2.966***
		(-4.247)	(-3.059)	(-3.914)
Firm years		1,566	1,566	1,566
Wald chi^2		106.3***	51.93***	84.31***
Pseudo R^2		0.0641	0.0500	0.0683

This table presents logit regressions of the likelihood that a company appoints a qualified outside director. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. In column (1) the dependent variable is *Qualified*, which is an indicator variable that equals one if a director has legal or accounting expertise. In column (2) the dependent variable is *Lawyer,* which is an indicator variable that equals one if a director is classified as a lawyer. In column (3) dependent variable is *Accountant,* which is an indicator variable that equals one if a director is classified as an accountant. *Fraud* is a categorical variable that takes a value of one for fraudulent companies and a value of zero for matched sample of firms. *Qualified Year Start* represents the proportion of qualified outside directors who were present on the board in the year prior to the appointment of a new outside director. *Qualified departed* is the number of qualified outside directors who *departed* during the same year as the newly appointed director. *CEO Departed* is an indicator variable that equals to one if the CEO leaves the firm during the year. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *ExecChairman* is an indicator variable that equals one if the CEO and the chairman in the firm are the same person and zero otherwise. *LnAssets* is the natural logarithm of total assets. *Capex* is capital expenditures divided by sales. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *ROA* is net income less extraordinary items divided by total assets. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

Column (1) reports the results, with the dependent variable being a combination of accounting and legal experts appointed from one year prior until two years after the revelation of fraud. Columns (2) and (3) demonstrate the results separately for each type of expertise. According to column (1), fraudulent firms are more likely to appoint qualified directors to their board during the three-year period around the revelation of fraud, as demonstrated by the positive and significant coefficient on the variable *Fraud*. Nevertheless, after separating results into different qualifications, the variable *Fraud* is only significant for accounting experts, suggesting that fraudulent firms are significantly more likely to appoint accounting experts to the board but not directors with legal expertise.

Additionally, Table 6 demonstrates that there is a positive significant association between the number of qualified directors who departed during the year and the likelihood of a new qualified director being appointed to the board. The coefficients on *Qualified departed, Lawyers departed* and *Accnt departed* are all significant, which suggests that departed qualified directors are likely to be replaced with directors that possess the same expertise. Column (3) also demonstrates that the number of accounting experts at the beginning of the year is negatively associated with the likelihood of appointing a new accounting expert during that year. A similar result is observed in column (1), with the coefficient on variable *Qualified Year Start* being also negative and significant at the 1% level. Lastly, similar to Table 5, the coefficient on *Ln(Asset)* is positive and significant in column (1), which is consistent with the argument that larger firms have a stronger ability to attract more qualified directors. Lastly, the coefficient on *CEO Departed* is positive and significant in all three columns.

This result is consistent with previous studies (Yermak, 2004) that find a significant increase in the replacement of outside directors when a CEO departs from the firm. The remaining controls are insignificant. I further verify the robustness of these results by interacting *Qualified Year Start* and *Qualified Departed* with *Fraud*, and the results remain unchanged. These results are reported in Appendix 4.

Table 7 further extends the results in Table 6 and investigates the likelihood of a qualified director appointment for each year separately.

Table 7 Logit regression for the likelihood qualified director appointment using model (2)

Variable		Qual T-1	Qual T+1	Qual T+2	Law T-1	Law T+1	Law T+2	Acc T-1	Acc T+1	Acc T+2
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Fraud	+	**0.471****	0.376	0.322	0.298	-0.562	**0.856****	**0.546****	**0.482***	0.378
		(2.021)	(1.618)	(1.309)	(0.718)	(-1.532)	**(1.984)**	**(2.164)**	**(1.948)**	(1.461)
Qualt$_{-1}$	-	-0.807	-1.452**	-1.524**	-3.163**	2.232*	0.275	-1.906**	-3.023***	-1.689*
		(-1.435)	(-2.332)	(-2.345)	(-2.028)	(1.950)	(0.243)	(-2.170)	(-3.355)	(-1.709)
Qual Departed	+	6.204***	6.788***	6.242***	10.319***	5.115	7.551***	7.218***	11.975***	5.945***
		(4.200)	(4.750)	(3.781)	(3.509)	(1.596)	(2.659)	(3.181)	(6.267)	(2.583)
CEO departed	?	-0.785	0.759***	0.433	-0.424	1.188***	-0.032	-0.843	0.503*	0.460
		(-1.641)	(2.798)	(1.334)	(-0.618)	(2.778)	(-0.059)	(-1.526)	(1.847)	(1.390)
Board Size	?	-0.017	0.120**	0.048	0.050	-0.011	0.065	-0.056	0.135**	0.064
		(-0.334)	(2.108)	(0.830)	(0.691)	(-0.160)	(0.841)	(-1.026)	(2.191)	(1.068)
%IndDir	?	0.510	-0.407	0.240	-1.181	-0.286	-1.084	0.632	0.239	0.659
		(0.618)	(-0.568)	(0.264)	(-0.974)	(-0.265)	(-0.954)	(0.673)	(0.320)	(0.630)
ExecChairman	?	0.084	-0.221	-0.432*	0.462	0.012	-0.508	-0.022	-0.360	-0.380
		(0.339)	(-0.962)	(-1.785)	(1.023)	(0.031)	(-1.355)	(-0.079)	(-1.440)	(-1.443)
Ln(Asset)	?	0.130	0.049	0.170**	0.008	0.128	0.217*	0.154*	-0.002	0.099
		(1.556)	(0.617)	(2.030)	(0.060)	(1.012)	(1.732)	(1.668)	(-0.018)	(1.096)
Capex	?	-0.407	0.107	0.213	-0.112	0.186	-0.350	-0.460	-0.157	0.170
		(-1.163)	(0.548)	(0.336)	(-0.195)	(0.603)	(-0.558)	(-1.276)	(-0.567)	(0.238)
Tobin	?	0.336	0.465	0.144	-0.241	-0.525	0.323	0.311	0.477	-0.044
		(0.725)	(0.955)	(0.294)	(-0.388)	(-0.584)	(0.366)	(0.601)	(0.878)	(-0.083)
ROA	?	-0.586	0.036	-0.616	0.145	-0.527	-0.718	-0.990	-0.167	-0.285
		(-0.824)	(0.058)	(-1.020)	(0.084)	(-0.453)	(-0.823)	(-1.512)	(-0.263)	(-0.456)
Constant	?	-3.005**	-2.804**	-3.075***	-2.253	-2.782	-4.840**	-2.980**	-3.182**	-3.143**
		(-2.538)	(-2.349)	(-2.592)	(-1.460)	(-1.378)	(-2.347)	(-2.238)	(-2.392)	(-2.535)
Firm		522	522	522	522	522	522	522	522	522
Wald chi^2		28.62***	44.78***	36.92***	19.81***	30.86***	26.24***	28.79***	53.13***	27.54***
Pseudo R^2		0.0533	0.0840	0.0747	0.0600	0.0854	0.0874	0.0560	0.115	0.0571

This table presents logit regressions for the likelihood of the appointment of a qualified outside director. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. In columns (1) though (3) the dependent variable is *Qualified*, an indicator variable that equals one if a director has legal or accounting expertise. In columns (4) though (6) the dependent variable is *Lawyer,* an indicator variable that equals one if a director is classified as a lawyer. In columns (7) through (9) the dependent variable is *Accountant,* an indicator variable that equals one if a director is classified as an accountant. *Qualt*$_{-1}$ represents the proportion of qualified outside directors who were present on the board at the beginning of the year. *Qualified departed* is the number of qualified outside directors who departed during the same year as the newly appointed director. For columns 4 through 9 *Qualt*$_{-1}$ corresponds to a specific qualification. *CEO Departed* is an indicator variable that equals to one if the CEO leaves the firm during the year. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of outside directors divided by the total number of directors and executives on the board. *ExecChairman* is an indicator variable that equals one if the CEO and the chairman in the firm are the same person and zero otherwise. *LnAssets* is the natural logarithm of total assets. *Capex* is capital expenditures divided by sales. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *ROA* is net income less extraordinary items divided by total assets. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

Columns (1) through (3) report the results, with the dependent variable being the sum of all qualified directors that were appointed in each separate year during the three-year period around the revelation of fraud. Columns (4) through (9) demonstrate the results separately for each type of expertise on a yearly basis. According to columns (1) through (3), fraudulent firms are significantly more likely to appoint a qualified outside director in the year prior to the revelation of fraud but not in the following two years. Similar to the results in Table 5, the positive and significant coefficient on the variable *Fraud* in columns (1) demonstrates that fraudulent firms appoint more qualified directors in the year prior to the revelation of fraud. Specifically, this results are driven primarily by the directors with accounting expertise as demonstrates by the significant coefficient on the variable fraud in column (7) Again, this result suggests that a fraudulent firm's board is likely to be aware of some governance failures before the fraud is publicly revealed and appoint more accounting experts to help them to deal with these governance failures. In addition, the results in column (9) demonstrate that fraudulent firms are more likely to appoint accounting experts in the first post-fraud year.

The coefficient on the variable *Fraud* is insignificant in columns (4) and (5) and becomes significant in column (6). These results suggest that there is no significant difference in the likelihood of appointing legal experts between fraudulent firms and the control set of firms in the year prior to revelation of fraud and in the first year after the fraud is revealed. In contrast, fraudulent firms are more likely than control firms to appoint legal experts in the second year after the fraud is revealed. Overall, these results are consistent with H2, which argues that, following the

revelation of fraud, culpable firms are more likely to replace departing directors with accounting and legal experts. The results for controls are similar to those in Table 6.

Although Tables 6 and 7 demonstrate that fraudulent firms are more likely to appoint qualified outside directors, it is not clear whether fraudulent firms achieve a higher proportion of qualified directors on their boards as some qualified directors may also resign. Therefore I estimate the following OLS regression to identify whether this is the case:

$$\%Qualified_i = \alpha + \beta_1 Fraud + \beta_2 \%Qualified\ prior\ year_i + \beta_3 Board\ Size_i + \beta_4 \%IndDir_i + \beta_5 ExecChairman_i + \beta_6 Ln(Asset)_i + \beta_7 Capex_i + \beta_8 Tobin_i + \beta_9 ROA_i + \varepsilon \quad (3)$$

The dependent variable *%Qualified* refers to the proportion of qualified directors on the board to the total number of outside directors. The main variable of interest is *Fraud*, which is a categorical variable that takes a value of one for fraudulent companies and a value of zero for the control sample. $Qualt_{-1}$ is used to control for the percentage of qualified outside directors at the beginning of the year.

Table 8 OLS regression for proportion of the directors present on the board

Variable		Qual T-1	Qual T+1	Qual T+2	Law T-1	Law T+1	Law T+2	Acc T-1	Acc T+1	Acc T+2
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Fraud	+	0.013	**0.018***	**0.021****	0.004	0.001	**0.014****	0.010	**0.017****	0.006
		(1.209)	**(1.781)**	**(2.244)**	(0.594)	(0.191)	**(2.454)**	(1.165)	**(2.120)**	(0.894)
Qualt$_{-1}$	+	0.914***	0.929***	0.925***	0.891***	0.980***	0.940***	0.907***	0.900***	0.933***
		(33.214)	(26.925)	(42.057)	(33.417)	(23.806)	(58.787)	(32.714)	(37.080)	(42.215)
CEO departed	?	-0.044**	0.035**	0.010	-0.015	0.020*	0.010	-0.029*	0.014	0.000
		(-2.118)	(2.051)	(0.686)	(-1.490)	(1.758)	(1.143)	(-1.673)	(1.156)	(0.005)
Board Size	?	-0.004*	-0.000	-0.002	-0.000	-0.000	-0.000	-0.004**	-0.000	-0.001
		(-1.697)	(-0.021)	(-0.879)	(-0.291)	(-0.069)	(-0.345)	(-2.165)	(-0.202)	(-0.878)
%IndDir	?	-0.059	-0.058*	0.012	-0.034	-0.039**	0.003	-0.025	-0.018	0.009
		(-1.456)	(-1.749)	(0.324)	(-1.473)	(-2.014)	(0.145)	(-0.832)	(-0.734)	(0.341)
ExecChairman	?	0.008	-0.017	-0.005	0.006	-0.004	0.000	0.002	-0.014*	-0.005
		(0.702)	(-1.572)	(-0.533)	(1.131)	(-0.607)	(0.000)	(0.232)	(-1.695)	(-0.673)
Ln(Asset)	?	0.004	0.000	0.001	0.001	-0.001	0.001	0.003	0.000	-0.000
		(0.818)	(0.059)	(0.338)	(0.405)	(-0.379)	(0.515)	(0.908)	(0.132)	(-0.075)
Capex	?	-0.006	0.004	0.011	0.006	0.010	0.003	-0.011	-0.007	0.007
		(-0.504)	(0.463)	(0.545)	(0.914)	(1.160)	(0.431)	(-1.305)	(-1.088)	(0.388)
Tobin	?	-0.000	0.026	-0.010	-0.007	-0.001	0.002	0.007	0.026	-0.012
		(-0.018)	(0.996)	(-0.498)	(-0.641)	(-0.071)	(0.201)	(0.364)	(1.625)	(-0.752)
ROA	?	-0.041	0.026	0.003	0.002	0.021	0.004	-0.041	0.004	-0.001
		(-1.166)	(0.956)	(0.110)	(0.091)	(1.085)	(0.294)	(-1.628)	(0.222)	(-0.055)
Constant	?	0.100	0.052	0.048	0.044	0.043	-0.009	0.058	0.018	0.054
		(1.544)	(0.892)	(0.995)	(1.335)	(1.028)	(-0.298)	(1.294)	(0.451)	(1.367)
Firm		522	522	522	522	522	522	522	522	522
F-Stat		148***	87.31***	215.5***	190.2***	109.9***	500.7***	138.6***	198.4***	216.8***
Adj R^2		0.745	0.765	0.815	0.806	0.811	0.863	0.736	0.780	0.798

This table presents an OLS regressions for the proportion of qualified directors present on the board. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. In columns (1) though (3) the dependent variable is *%Qualified* and refers to the proportion of qualified directors on the board to the total number of outside directors. In columns (4) though (6) the dependent variable is *%Lawyer,* which is the proportion of directors with legal expertise on the board to the total number of outside directors. In columns (7) through (9) the dependent variable is *%Accountant,* which is the proportion of directors with accounting expertise on the board to the total number of outside directors. *Qualt*$_{-1}$ represents the proportion of qualified outside directors who were present on the board at the beginning of the year. For columns 4 through 9 *Qualt*$_{-1}$ corresponds to a specific qualification and not aggregate number of qualified directors. *CEO Departed* is an indicator variable that equals to one if the CEO leaves the firm during the year. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *ExecChairman* is an indicator variable that equals one if the CEO and the chairman in the firm are the same person and zero otherwise. *LnAssets* is the natural logarithm of total assets. *Capex* is capital expenditures divided by sales. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *ROA* is net income less extraordinary items divided by total assets. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

Table 8 presents the results for the proportion of qualified directors on the board. Columns (1) through (3) report the results, with the dependent variable being the sum of all qualified directors who were appointed during the three-year period around the revelation of fraud. Columns (4) through (9) demonstrate the results separately for each type of expertise. Columns (1) through (3) demonstrate that fraudulent firms achieve a higher proportion of qualified outside directors on their boards in the first and second year following the revelation of fraud. According to column (6), fraudulent firms have a higher proportion of legal experts in the second year following the revelation of fraud and according to column (8) fraudulent firms are more likely to have a higher proportion of accounting experts in year t+1. This finding is consistent with the results in Tables 6 and 7, which show that fraudulent firms are likely to appoint more qualified directors to their boards.

As expected, the percentage of qualified directors in the previous year is a significant determinant of the proportion of qualified directors in the current year. Furthermore, the negative and significant coefficient on *CEO Departed* in column (7) suggests that the departure of the CEO is associated with a lower proportion of accounting experts on the board in the year prior to the revelation of fraud. In contrast, the positive and significant coefficient on *CEO Departed* in column (5) suggests that, in the year following the revelation of fraud, CEO departure is associated with a higher proportion of legal experts on the board.

4.5 Univariate Analysis of Directors' Career Outcomes (H3)

Table 9 compares the average number of other board seats possessed by the appointed outside directors at the time of the appointment and in the following

three years. The Table breaks down the sample of appointed directors based on the time of their appointment. For example, row Appointed -1 describes other board seats held by directors appointed in the year prior to the revelation of fraud. Specifically, it demonstrates the other board seats held by these directors at the time of their appointment (row Boards T=0) and in the following three years (rows Boards T+1, Boards T+2, Boards T+3) . Similarly rows Appointed +1 and Appointed +2 demonstrate the number of other board seats possessed by the directors appointed in the first and second year following the revelation of fraud.

Table 9: Univariate analysis of other board seats held by outside directors

		Boards T=0	Boards T+1	Boards T+2	Boards T+3
Appointed -1	Fraud	1.072	1.114	1.078	1.020
	Control	0.870	0.857	0.883	0.889
	t-Stat	1.530	**1.969****	1.510	1.021
Appointed+1	Fraud	1.051	1.037	0.995	1.033
	Control	0.885	0.754	0.748	0.735
	t-Stat	1.264	**2.280****	**2.134****	**2.450****
Appointed+2	Fraud	0.878	0.878	0.860	0.864
	Control	0.841	0.804	0.829	0.816
	t-Stat	0.317	0.644	0.284	0.428

This table compares the means of the other board seats possessed by the outside directors who join fraudulent firms and control sample of firms in the year prior to the revelation of fraud and within two years after the fraud was revealed. *t*-statistics are used for the mean comparison. The superscripts ***, **, and * denote significance at 1%, 5%, and 10% confidence levels.

The results in this table suggest that, at the time of their appointment (Boards T=0), there is no statistically significant difference between the number of other board seats held by outside directors from the control sample of firms and fraudulent firms. Nevertheless, directors who are appointed to the board of fraudulent firms one year prior to the revelation of fraud possess more directorships in the year after fraud revelation. However, this difference becomes insignificant in the second and third year after appointment.

Table 9 further demonstrates that, in comparison to the directors from the control sample, directors appointed in the year following the revelation of fraud hold a significantly higher number of directorships one year after the appointment. This difference is sustained over the next two years. This finding is consistent with H3(b), which suggests that directors who join fraudulent firms following the revelation of fraud are likely to be rewarded by additional board seats for the experience that they gain from serving on the boards of these firms.

Appendix 5 demonstrates results for the changes in the directorships of the appointed directors and confirms the results in Table 9. Specifically, Appendix 5 demonstrates that directors who were appointed to the boards of fraudulent firms in the first year following the revelation of fraud experience a significantly lower decline in their directorships in comparison to the directors who were appointed to the boards of the control firms over the same period of time.

4.6 Multivariate Analysis of Directors' Career Outcomes (H3)

To provide evidence on the career outcomes of outside directors who join firms with a tarnished reputation I estimate a variety of regression models using different subsamples of outside directors. I start with the following OLS regression:

$$\text{Directorship Change}_i = \alpha + \beta_1 \text{Fraud}_i + \beta_2 \text{Appoint}_i + \beta_3 \text{Fraud*Appoint}_i + \beta_4 \text{Departed}_i + \beta_5 \text{Fraud*Departed}_i + \beta_6 \text{Boards at t=0}_i + \beta_7 \text{AgeYrs}_i + \beta_8 \text{Board Size}_i + \beta_9 \text{Indprcnt}_i + \beta_{10} \text{LnAsset}_i + \beta_{11} \text{AvgROA}_i + \varepsilon \quad (4)$$

In this regression, I compare the career outcomes of outside directors who were present on the board for more than one year prior to the revelation of fraud to the

career outcomes of outside directors who joined fraudulent firms either within one year prior to the revelation of fraud or during the two-year period after the fraud was revealed. This regression also includes directors from the control sample of firms. Adding these directors enables us to investigate whether joining and serving on the boards of fraudulent firms leads to different economic outcomes in comparison to serving on the boards of non-fraudulent firms.

I estimate this regression three times depending on whether a director was appointed in the year prior to the revelation of fraud, one year after or two years after the fraud was revealed. The dependent variable in this regression is *Directorship Change.* This variable is defined as the raw change in the number of other directorships held by each individual director over a three-year period starting from year 0 and ending in year +3. For directors who were present on the board for more than one year prior to the revelation of fraud, year 0 starts either one year prior to the revelation of fraud, at the date of revelation or one year after the revelation of fraud depending on the regression. In contrast, for the appointed directors, Year 0 starts at the date of the appointment.

I also separately investigate the likelihood of losing or gaining a board seat by estimating two logit regression models. In the first model, the dependent variable is *Directorship Increase* and it takes a value of one if the number of other directorships has increased for an individual director over the same three-year period. In the second regression, the dependent variable is *Directorship Decrease* and takes a value of one if the number of other directorships has decreased for an individual director over the same period of time. Since these regressions include

both control and fraudulent firms the main variable of interest is *Fraud*Appoint*, which is an interaction variable between *Fraud* and *Appoint.* Variable *Fraud* is a binary variable and takes a value of one if an outside director is from a fraudulent firm. The variable *Appoint* is also a binary variable and takes the value of one if a director was appointed one year prior to the revelation of fraud or within two years after the fraud was revealed.

The regression results on the career outcomes of outside directors are presented in Table 10. Columns (1), (4) and (7) present the results for the OLS regression for directors that join the firm in year -1, year +1 and year +2 respectively, where the dependent variable is defined as the raw change in the number of other directorships. Columns (2), (5), (8) present results for the logit regression for year -1, year +1 and year +2 respectively, where the dependent variable takes a value of one if the number of directorships has increased. Columns (3), (6), (9) present the results for year -1, year +1 and year +2 respectively for a logit regression where the dependent variable takes a value of one if the number of directorships has decreased for an individual director.

Table 10: OLS and Logit regressions for the change in directorships of directors from control and fraudulent firms

Variable	OLS Year -1 (1)	Logit I Year -1 (2)	Logit D Year -1 (3)	OLS Year +1 (4)	Logit I Year +1 (5)	Logit D Year +1 (6)	OLS Year +2 (7)	Logit I Year +2 (8)	Logit D Year +2 (9)
Fraud	-0.051*	-0.099	0.224*	-0.020	-0.031	0.154	-0.029	-0.039	0.197
	(-1.688)	(-0.757)	(1.951)	(-0.733)	(-0.217)	(1.290)	(-0.889)	(-0.256)	(1.364)
Appointed	0.033	0.399	0.144	-0.096*	-0.161	0.554**	0.076	0.372	-0.002
	(0.478)	(1.590)	(0.533)	(-1.660)	(-0.604)	(2.285)	(1.153)	(1.407)	(-0.005)
Fraud Appointed*	0.063	0.034	-0.141	**0.194****	**0.590***	**-0.751****	0.026	-0.105	-0.256
	(0.646)	(0.102)	(-0.393)	**(2.422)**	**(1.764)**	**(-2.181)**	(0.306)	(-0.306)	(-0.702)
Departed	-0.236***	-0.180	0.946***	-0.183**	0.058	0.315	-0.066	-0.002	0.184
	(-3.227)	(-0.651)	(4.632)	(-2.179)	(0.191)	(1.283)	(-0.922)	(-0.005)	(0.698)
*Fraud*Departed*	0.065	0.139	-0.480	0.076	-0.367	-0.125	0.101	0.184	-0.339
	(0.532)	(0.372)	(-1.468)	(0.647)	(-0.851)	(-0.354)	(1.105)	(0.392)	(-0.954)
Boards at t=0	-0.320***	0.000	1.017***	-0.238***	0.086***	0.927***	-0.252***	0.018	1.017***
	(-9.378)	(0.004)	(20.025)	(-13.959)	(2.673)	(18.645)	(-14.912)	(0.436)	(19.252)
AgeYrs	-0.010***	-0.036***	0.026***	-0.009***	-0.042***	0.025***	-0.007***	-0.046***	0.019***
	(-7.362)	(-7.211)	(4.681)	(-5.963)	(-7.172)	(4.208)	(-5.125)	(-8.187)	(3.074)
Board Size	-0.010**	-0.065***	-0.017	-0.004	-0.045	-0.001	-0.016**	-0.088***	0.052*
	(-2.035)	(-2.638)	(-0.724)	(-0.794)	(-1.399)	(-0.043)	(-2.217)	(-2.799)	(1.780)
Indprcnt	0.043	0.808*	0.994***	0.127	0.838	0.013	0.098	1.334*	0.432
	(0.488)	(1.894)	(2.997)	(1.582)	(1.519)	(0.035)	(1.004)	(1.849)	(0.842)
LnAssets	0.038***	0.120***	-0.038	0.017*	0.086*	-0.002	0.024**	0.130***	-0.050
	(3.584)	(3.466)	(-1.192)	(1.700)	(1.926)	(-0.053)	(2.172)	(2.993)	(-1.093)
AvgROA	-0.046	-0.307	0.026	-0.122	-0.133	0.509*	-0.037	0.358	0.331
	(-0.444)	(-0.806)	(0.077)	(-1.594)	(-0.373)	(1.697)	(-0.423)	(0.799)	(0.933)
Constant	0.606***	-0.720*	-4.692***	0.458***	-0.595	-4.228***	0.427***	-0.723	-4.277***
	(5.362)	(-1.673)	(-10.596)	(3.971)	(-1.019)	(-8.576)	(3.563)	(-1.065)	(-7.614)
Directors	3,923	3,923	3,923	3,659	3,659	3,659	3,353	3,353	3,353
F-Stat	20.22	86.62	510.9	25.69	84.17	421.5	23.93	104.9	427.1
Adj R^2	0.275	0.0257	0.269	0.184	0.0287	0.233	0.204	0.0372	0.246

This table presents OLS and Logit regressions for the change in the number of other directorships held by each individual directors. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. In columns (1), (4) and (7) the dependent variable is *Directorship Change*, which represents the raw change in the number of other directorships held by each individual director over a three-year period starting from year 0 and ending in year +3. In columns (2), (5) and (8), the dependent variable is *Directorship Increase* and it takes a value of one if the number of other directorships has increased for an individual director over the same three-year period. In columns (3), (6) and (9) the dependent variable is *Directorship Decrease* and takes a value of one if the number of other directorships has decreased for an individual director over the same period of time. *Fraud* is an indicator variable that equals one if a director is from a fraudulent firm. *Appointed* is an indicator variable that equals one if a director is appointed during the year. *Fraud*Appointed* is an interaction variable between *Fraud* and *Appoint. Departed* is an indicator variable that equals one if a director departs during the year. *Fraud*Departed* is an interaction variable between *Fraud* and *Departed. Boards at t=0* is the number of directorships held by a director at t=0. *AgeYrs* is the age of a director in years. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of outside directors divided by the total number of directors and executives on the board. *LnAssets* is the natural logarithm of total assets. *AvgROA* is the average of ROA over a three=year period. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

Table 10 demonstrates that variable *Fraud* is negative and significant in column (1) and positive and significant in column (3). This result is consistent with Brochet and Srinivasan (2014), Ertimur et al. (2012) and Fich and Shivdasani (2007) who find that outside directors experience a decrease in other directorships when they serve on the board of firms that announce accounting restatements or are involved in lawsuit. Variable *Appoint* is insignificant in all columns, except columns (4) and (6). These results suggest that joining a new board does not affect a director's ability to obtain additional directorships, except in the Year +1.

The main variable of interest *Fraud*Appointed* is insignificant in years -1 and +2. This result suggests that the director labor market recognizes that newly appointed directors are not responsible for fraud and therefore they do not face similar reputational consequences as directors who have been present on the board while the fraud was occurring. However, this result also suggests that directors who join fraudulent firms in years -1 and +2 do not gain additional board seats for the experience gained from serving on the board of these firms.

Nevertheless, in columns (4) and (5) variable *Fraud*Appoint* is positive and significant. This result supports the experience hypothesis (H3b), which suggests that outside directors who join fraudulent firms are likely to obtain additional directorships as a reward for the experience gained from serving on the boards of troubled firms. In column (6), *Fraud*Appoint* is also negative and significant. This result suggests that directors who were appointed to the boards of the fraudulent firms in the first post-fraud year are less likely to lose their directorships than the

directors from control sample of firms and directors who were present on the board prior to the revelation of fraud.

Moreover, consistent with Ertimur et al. (2012) and Srinivasan (2005), I find that directors who depart from their firm are less likely to obtain directorships on other boards in the future, demonstrated by the negative and significant coefficient on *Departed* in columns (1) and (4). These results are inconsistent with Dou (2015), who demonstrates that directors departing from the boards of troubled firms prior to the revelation of fraud are less likely to obtain additional directorships than remaining directors or directors from the control set of firms. This is demonstrated by an insignificant coefficient on the interaction variable *Fraud*Departed.* This difference in the findings could be driven by substantially different data collection methods.[15] Similarly to previous studies (Dou, 2015; Harford and Schonlau, 2013; Ertimur et al., 2012), I find that the number of other board seats already possessed by a director and director age is negatively associated with the likelihood of obtaining additional board seats. Lastly, I also find evidence that directors who serve on the boards of larger firms obtain more directorships, which is shown by the positive and significant coefficient on *LnAssets*.

Appendix 6 provides further analysis of the results demonstrated in Table 10. I estimate equation (4) and add a number of additional director-level controls. In particular, I control for director accounting and legal expertise using variables

[15] Due to the late revelation date problem in SCAC and GAO databases, in his robustness analysis Dou (2015) uses data described in Karpoff, Koester, et al. (2014). However, the results in Dou (2015) do not hold using that database. The data collection method in this thesis is similar to that described in Karpoff, et al. (2014), which may explain the difference between results in this thesis and Dou (2015).

Lawyer and *Accountant*, respectively. I also control for whether a director is CEO of another company using the variable *CEO*. Lastly, I control for director prior board experience using variable *Prior Exp,* which is defined as the sum of all prior board seats held by an individual director. After including these variables, the results on the interaction variable *Fraud*Appoint* remain significant in columns (4) and (6). In Appendix 6 I also interact variable *Fraud* with variables *Lawyer* and *Accountant.* The interaction variable *Lawyer*Fraud* is positive and significant in columns (2), (4), (5) and (7), while interaction variable *Accountant*Fraud* is positive and significant in columns (4), (5) and (7). These results suggest that accounting and legal experts obtain an even higher amount of other directorships in comparison to other directors that serve on the boards of fraudulent firms.

In Table 11 I use the same regression models as in Table 10, except in these models I restrict my sample only to directors from fraudulent firms. Since these regressions compare career outcomes of the outside directors who were present on the board for more than one year prior to the revelation of fraud to the careers of outside directors who were appointed to the board during the three-year period around the revelation of fraud, the main variable of interest is *Appoint.* This variable is a binary variable and takes the value of one if a director was appointed one year prior to the revelation of fraud in columns (1-3), in the first year after the fraud is revealed in columns (4-6) and in the second year after the fraud is revealed in columns (7-9).

Table 11: OLS and Logit regressions for the change in directorships of directors from fraudulent firms only

Variable	OLS Year -1 (1)	Logit I Year -1 (2)	Logit D Year -1 (3)	OLS Year +1 (4)	Logit I Year +1 (5)	Logit D Year +1 (6)	OLS Year +2 (7)	Logit I Year +2 (8)	Logit D Year +2 (9)
Appointed	0.100	**0.441****	-0.006	**0.094***	**0.432****	-0.207	**0.096***	0.297	-0.202
	(1.463)	**(2.082)**	(-0.026)	**(1.704)**	**(2.053)**	(-0.856)	**(1.828)**	(1.341)	(-0.989)
Departed	-0.164*	-0.037	0.476*	-0.104	-0.314	0.176	0.038	0.176	-0.159
	(-1.833)	(-0.144)	(1.810)	(-1.240)	(-1.037)	(0.708)	(0.657)	(0.608)	(-0.684)
Boards at t=0	-0.369***	0.008	1.040***	-0.214***	0.130***	0.852***	-0.243***	0.047	0.964***
	(-7.154)	(0.190)	(14.569)	(-8.184)	(2.652)	(12.349)	(-9.899)	(0.726)	(12.431)
AgeYrs	-0.009***	-0.035***	0.017**	-0.009***	-0.042***	0.023***	-0.009***	-0.037***	0.028***
	(-4.797)	(-5.061)	(2.085)	(-4.610)	(-5.488)	(2.808)	(-4.575)	(-4.569)	(3.385)
Board Size	0.004	-0.017	-0.027	-0.012	-0.070	0.035	-0.018	-0.067	0.050
	(0.391)	(-0.396)	(-0.821)	(-1.336)	(-1.278)	(0.963)	(-1.549)	(-1.294)	(1.032)
Indprcnt	-0.019	0.903*	0.974**	0.166	0.559	-0.230	0.032	0.365	0.615
	(-0.147)	(1.719)	(2.257)	(1.518)	(0.740)	(-0.490)	(0.221)	(0.405)	(0.832)
LnAssets	0.030*	0.082*	0.004	0.023	0.140**	-0.027	0.024*	0.140**	-0.062
	(1.914)	(1.670)	(0.078)	(1.591)	(1.995)	(-0.483)	(1.683)	(2.302)	(-0.988)
AvgROA	-0.297**	-0.883**	-0.069	-0.271***	-0.850**	0.694	-0.043	-0.148	0.374
	(-2.209)	(-2.125)	(-0.149)	(-2.648)	(-2.091)	(1.635)	(-0.349)	(-0.270)	(0.829)
Constant	0.534***	-1.154**	-4.128***	0.450***	-0.715	-3.776***	0.530***	-0.856	-4.644***
	(3.465)	(-2.301)	(-6.580)	(3.085)	(-1.000)	(-5.723)	(3.307)	(-1.000)	(-5.936)
Directors	1,913	1,913	1,913	1,771	1,771	1,771	1,611	1,611	1,611
F-Stat	13.52	35.99	249	17.80	55.35	204.8	14.15	38.79	188.1
Adj R^2	0.335	0.0238	0.273	0.164	0.0390	0.215	0.200	0.0256	0.236

This table presents OLS and Logit regressions for the change in the number of other directorships held by each individual director. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. In columns (1), (4) and (7) the dependent variable is *Directorship Change*, which represents the raw change in the number of other directorships held by each individual director over a three-year period starting from year 0 and ending in year +3. In columns (2), (5) and (8) the dependent variable is *Directorship Increase* and it takes a value of one if the number of other directorships has increased for an individual director over the same three-year period. In columns (3), (6) and (9) the dependent variable is *Directorship Decrease* and takes a value of one if the number of other directorships has decreased for an individual director over the same period of time. *Fraud* is an indicator variable that equals one if a director is from a fraudulent firm. *Appointed* is an indicator variable that equals one if a director is appointed during the year. *Departed* is an indicator variable that equals one if a director departs during the year. *Boards at t=0* is the number of directorships held by a director at t=0. *AgeYrs* is the age of a director in years. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *LnAssets* is the natural logarithm of total assets. *AvgROA* is the average of ROA over a three-year period. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

The main variable of interest *Appointed* is positive and significant in columns (2), (4), (5) and (7). This result suggests that directors who were appointed one year prior to the revelation of fraud or over the two-year period after the fraud is revealed are more likely to obtain additional directorships in comparison to the directors who were present on the board of fraudulent firms prior to fraud revelation. Although these results are consistent with my expectations, it is not clear whether they are driven by the reputational penalty faced by the directors who were present on the board prior to the revelation of fraud or the experience that is gained by newly appointed directors.

In Appendix 7 I further investigate the robustness of the results reported in Table 11. Similar to Appendix 6, I add the following director-level controls: *Accountant, Lawyer, CEO* and *Prior exp.* The variable *Appointed* remains positive and significant in columns (2), (5) and (7). Additionally, in Appendix 8, I investigate whether directors' legal and accounting expertise affects their ability to obtain additional board seats. Accordingly, I remove variable *Appointed* from the regression and include two additional variables, which are *Lawyer*Appointed* and *Accountant*Appointed.* Results in Appendix 8 demonstrate that newly appointed legal experts do not obtain more directorships than other directors on the board, which is demonstrated by the insignificant coefficient on *Lawyer*Appointed* in all columns. However, accounting experts who are appointed in the year following the revelation of fraud obtain significantly higher directorships than other directors, which is demonstrated by the significant coefficient in columns (4) and (5).

To isolate the experience effect from the reputation effect I further compare career outcomes between the directors appointed to the boards of fraudulent firms and directors appointed to the boards of the control sample of firms. Holding all other factors constant, joining a control firm should lead to the same career outcomes as joining fraudulent firms. However, if directors who join fraudulent firms are able to obtain additional board seats in the future, this will suggest that the director labour market rewards these directors for the experience that they gain from serving on the boards of these firms. Hence, I estimate a regression model in which I include appointed directors for both sets of firms, with the main variable of interest being *Fraud*. Similar to Table 10, the variable *Fraud* is a binary variable and takes the value of one if an outside director is from a fraudulent firm.

Table 12: OLS and Logit regressions for the change in directorships of appointed directors from control and fraudulent firms

Variable	OLS Year -1 (1)	Logit I Year -1 (2)	Logit D Year -1 (3)	OLS Year +1 (4)	Logit I Year +1 (5)	Logit D Year +1 (6)	OLS Year +2 (7)	Logit I Year +2 (8)	Logit D Year +2 (9)
Fraud	0.014	-0.082	0.122	**0.164****	**0.571***	**-0.618***	0.007	-0.091	0.008
	(0.152)	(-0.263)	(0.334)	**(2.043)**	**(1.747)**	**(-1.817)**	(0.101)	(-0.307)	(0.024)
Boards at t=0	-0.309***	-0.272**	1.209***	-0.258***	-0.170	1.037***	-0.306***	-0.368**	1.236***
	(-6.154)	(-1.990)	(7.914)	(-4.772)	(-1.159)	(5.085)	(-7.297)	(-2.507)	(6.904)
AgeYrs	-0.004	0.011	0.019	-0.001	0.007	0.010	0.003	-0.006	-0.046*
	(-0.857)	(0.635)	(0.913)	(-0.259)	(0.370)	(0.408)	(0.614)	(-0.332)	(-1.874)
Board Size	0.027	-0.023	-0.295***	-0.007	-0.112	-0.033	-0.019	-0.016	0.141*
	(1.118)	(-0.238)	(-2.694)	(-0.445)	(-1.552)	(-0.510)	(-1.181)	(-0.235)	(1.914)
Indprcnt	0.425	1.862*	1.794	0.577**	2.141	-1.625	0.108	0.992	1.455
	(1.520)	(1.899)	(1.412)	(2.192)	(1.591)	(-1.531)	(0.457)	(0.630)	(0.898)
LnAssets	0.018	0.106	0.063	-0.014	0.122	0.214*	0.023	0.086	-0.061
	(0.554)	(0.948)	(0.503)	(-0.515)	(1.282)	(1.862)	(0.956)	(0.901)	(-0.522)
AvgROA	-0.336	-1.304	-0.071	-0.305	-0.564	2.360	0.233	0.245	-0.694
	(-1.350)	(-1.338)	(-0.074)	(-1.217)	(-0.629)	(1.195)	(0.793)	(0.264)	(-0.827)
Constant	-0.183	-3.758***	-3.328**	-0.105	-3.877**	-3.160*	0.016	-2.375	-2.640
	(-0.605)	(-3.212)	(-2.045)	(-0.308)	(-2.485)	(-1.663)	(0.049)	(-1.451)	(-1.464)
Directors	346	346	346	382	382	382	379	379	379
F-Stat	6.559	8.941	73.72	8.039	12.21	37.24	7.807	7.802	56.07
Adj R^2	0.172	0.0329	0.290	0.203	0.0356	0.308	0.196	0.0248	0.295

This table presents OLS and Logit regressions for the change in the number of other directorships held by each individual director. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. In columns (1), (4) and (7) the dependent variable is *Directorship Change*, which represents the raw change in the number of other directorships held by each individual director over a three-year period starting from year 0 and ending in year +3. In columns (2), (5) and (8) the dependent variable is *Directorship Increase* and it takes a value of one if the number of other directorships has increased for an individual director over the same three-year period. In columns (3), (6) and (9), the dependent variable is *Directorship Decrease* and takes a value of one if the number of other directorships has decreased for an individual director over the same period of time. *Fraud* is an indicator variable that equals one if a director is from a fraudulent firm. *Appointed* is an indicator variable that equals one if a director is appointed during the year. *Departed* is an indicator variable that equals one if a director departs during the year. *Boards at t=0* is the number of directorships held by a director at t=0. *AgeYrs* is the age of a director in years. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *LnAssets* is the natural logarithm of total assets. *AvgROA* is the the average of ROA over a three-year period. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

Table 12 demonstrates that the variable *Fraud* is positive and significant in columns (4) and (5). This result suggests that directors who join fraudulent firms in the year following the revelation of fraud obtain more directorships in the following three years in comparison to directors who join a control firm over the same period of time. This result is consistent with the results in Tables 10 and 11 and supports the argument that directors are rewarded by the director labour market for the experience that they gain from serving on the board in the post-fraud period. In addition, the variable *Fraud* is negative and significant in column (6), which demonstrates that directors who join fraudulent firms are also less likely to lose their directorships in the following three years in comparison to directors who join a control firm. This result is also consistent with the hypothesis that the director labour market rewards directors for joining fraudulent firms.

Similar to Appendices 6 and 7, I verify the robustness of the results in Table 12 by including the following variables: *Accountant, Lawyer, CEO* and *Prior exp.* The results are demonstrated in Appendix 9. After including these variables, the main variable of interest *Fraud* remains significant in column (1). Lastly, in Appendix 10, I investigate how directors' legal and accounting expertise affects their ability to obtain additional board seats. Accordingly, I remove the variable *Fraud* and include two variables, which are *Lawyer*Fraud* and *Accountant*Fraud.* Results in Appendix 10 demonstrate that legal experts appointed to the boards of fraudulent firms do not obtain more directorships than legal experts appointed to the boards of the control sample. This is demonstrated by the insignificant coefficient on *Fraud*Lawyer* in all columns. However, accounting experts who are appointed to

the boards of fraudulent firms in the year following the revelation of fraud obtain significantly higher directorships than accounting experts appointed by the control sample of firms. This is demonstrated by the significant coefficient on *Fraud*Accountant* in column (4).

4.7 Univariate Analysis of Directors' Compensation (H4)

The compensation sample starts from 2006. Before 2006, public companies were only required to provide narrative disclosure of director compensation and did not provide information on the compensation of each individual board member. In addition, prior to 2006, the estimation of the equity component of director compensation required a large number of assumptions. For example, most public companies did not disclose the dollar value of director equity awards and the basic terms of these awards such as award date, stock price when awarded, vesting requirements, or restrictions on sale. However, in 2006, the SEC adopted Rule 33-8732a, which significantly enhanced disclosure on equity awards and required public companies to provide director compensation for each individual director. Moreover, public firms were required to disclose details on all of the components of director compensation, which are: cash, stock, stock options, pensions, non-equity incentives and "other". I take advantage of these disclosure requirements and use this information to investigate the compensation offered to outside directors.

Table 13 compares means and medians of the different components of compensation obtained by outside directors from fraudulent firms and control

firms over a four-year period starting from one year prior to the revelation of fraud and in the following three years.

Table 13: Univariate analysis of average compensation received by outside directors from fraudulent firms and control sample

Variable		Mean				Median			
		Year -1	Year 0	Year +1	Year +2	Year 0	Year -1	Year +1	Year +2
Cash	Fraud	65.116	67.005	71.878	72.167	55.375	55.75	61.25	62.5
	Control	58.513	58.073	56.227	57.588	53	55	53	54
	Difference	6.603	8.931	15.651	14.579	2.375	0.75	8.25	8.5
	t/z-test	**2.208****	**3.849*****	**8.030*****	**8.627*****	**2.888*****	0.752	**6.339*****	**7.026*****
Stock	Fraud	52.046	43.182	48.044	52.992	11.135	11.7	28.749	37.912
	Control	49.760	50.433	52.780	47.664	28.597	28.036	31.639	22.5
	Difference	2.285	-7.250	-4.735	5.327	-17.462	-16.336	-2.89	15.412
	t/z-test	0.344	**-2.388****	**-1.706***	**2.373****	**-2.482****	**-2.002****	1.297	**1.297****
Options	Fraud	52.864	50.382	45.064	35.570	15.506	16.758	11.706	0
	Control	29.744	42.208	34.532	33.599	0	0	0	0
	Difference	23.120	8.174	10.531	1.970	15.506	16.758	11.706	0
	t/z-test	**5.850*****	**1.871***	**3.116*****	0.766	**5.492*****	**6.115*****	**6.798*****	**2.658*****
Cash + Equity	Fraud	170.027	160.570	164.987	160.731	143.776	140.98	149.506	149.449
	Control	138.067	150.715	143.54	138.853	129.573	123.735	126.718	132.468
	Difference	31.960	9.855	21.447	21.877	14.203	17.245	22.788	16.981
	t/z-test	**3.845*****	**1.674***	**4.692*****	**5.842*****	**3.256*****	**3.634*****	**4.612*****	**5.284*****
Cash+Equity+Other	Fraud	209.413	166.540	170.892	167.229	145.35	144.511	153.439	152.753
	Control	155.567	162.234	150.055	141.083	135.014	125.171	129.948	133.772
	Difference	53.846	4.305	20.836	26.146	10.336	19.34	23.491	18.981
	t/z-test	**2.741*****	0.552	**4.136*****	**6.425*****	**2.633*****	**3.672*****	**4.487*****	**5.335*****

This table compares means and medians of different compensation components received by outside directors from fraudulent and control sample of firms at the end of each individual fiscal year, starting from one year prior to the revelation of fraud up until two years after the fraud was revealed. *t*-statistics are used for the mean comparison and the Wilcoxon rank sum tests are used for the median difference. The superscripts ***, **, and * denote significance at 1%, 5%, and 10% confidence levels.

Table 13 demonstrates that fraudulent firms offer a significantly larger amount of cash to their outside directors. In the year prior to the revelation of fraud, fraudulent firms offer $6,603 more to each individual director. However, in the year following the revelation of fraud, the difference increases to $15,651 per director. Similarly, in the year prior to the revelation of fraud, an individual director from a fraudulent firm receives on average $23,120 more in the form of options than a director from control firms. This difference decreases to $10,531 and becomes insignificant in the second year post-fraud.

In contrast, fraudulent firms offer a significantly lower amount of compensation in the form of stock. In the year prior to the revelation of fraud there is no statistically significant difference between the average amount of stock offered by fraudulent firms and control firms. However, the median value of stock received by an individual director from a fraudulent firm is $17,463 lower in the year prior to revelation of fraud and $16,336 lower in the year when the fraud was revealed. However, by the second year post-fraud, this trend reverses and fraudulent firms provide their directors with a higher amount of stock than control firms. Specifically, the median stock value offered to outside directors from fraudulent firms is $15,412 higher than the median stock value offered to directors from control firms, while the mean stock value offered to directors from fraudulent firms is $5,327 higher.

4.8 Multivariate Analysis of Directors' Compensation (H4)

To provide evidence for the compensation offered to outside directors who join fraudulent firms after the revelation of fraud I use the following OLS regression:

$$\text{Total Compensation}_i = \alpha + \beta_1\text{Fraud} + \beta_2\text{Departed} + \beta_3\text{Appointed} + \beta_4\text{LnAssets} + \beta_5\text{MTB} +$$
$$+ \beta_6\text{R\&Dexp} + \beta_7\text{Capex} + \beta_8\text{ROA} + \beta_9\text{Leverage} + \beta_9\text{Board Size} + \beta_{10}\text{Indprcnt} + \varepsilon \quad (5)$$

Since previous research focuses primarily on the cash and equity components of director compensation, in the main analysis I define *Total Compensation* as the sum of cash and equity pay per director, where equity pay includes options and stock awards. However, in a separate analysis I redefine *Total Compensation* by adding pensions, non-equity incentives and "other" components of compensation. The main variable of interest in the regression is *Fraud*. Similar to prior tests, the variable *Fraud* is a binary variable and takes the value of one if an outside director is from a fraudulent firm and 0 if a director is from a control firm.

The regression results for the compensation of outside directors are presented in Table 14. Column (1) compares the compensation of outside directors in the fiscal year ending immediately prior to the revelation of fraud. Column (2) presents the results for the fiscal year in which fraud is revealed. Columns (3) and (4) demonstrate the results for the one and two fiscal years following the revelation of fraud respectively. Since variables are measured at the director level, standard errors are clustered by firm in all regressions.

Table 14: OLS regressions for the compensation of outside directors

Variable	Compensation year -1	Compensation year 0	Compensation year +1	Compensation year +2
	(1)	(2)	(3)	(4)
Fraud	10.731	-3.757	**21.346****	**27.972*****
	(0.781)	(-0.265)	**(2.415)**	**(3.464)**
Departed	-56.466***	-79.435***	-91.885***	-83.202***
	(-2.922)	(-4.567)	(-11.062)	(-10.046)
Appointed	-65.114***	-48.831***	-54.799***	-44.487***
	(-3.508)	(-4.195)	(-5.648)	(-5.701)
LnAssets	24.703***	34.177***	27.065***	24.875***
	(4.548)	(7.532)	(8.409)	(7.607)
MTB	25.329*	16.268***	23.013***	9.742***
	(1.754)	(3.183)	(5.117)	(2.775)
R&Dexp	120.008	158.411	67.975	117.286***
	(1.011)	(1.499)	(1.158)	(2.607)
Capex	150.515	222.231	227.114***	224.139**
	(0.910)	(1.584)	(2.646)	(2.461)
ROA	-49.831	-29.007	-27.616	29.149
	(-0.564)	(-0.556)	(-1.067)	(1.387)
Leverage	154.335*	-32.431	-24.376	2.219
	(1.709)	(-1.200)	(-1.592)	(0.167)
Board Size	-7.360*	-11.862***	-6.540**	-6.756***
	(-1.878)	(-3.412)	(-2.485)	(-2.935)
IndPrcnt	33.354	99.080**	121.628***	121.175***
	(0.537)	(2.093)	(3.507)	(3.557)
Constant	-79.761	-89.808***	-126.026***	-100.584***
	(-1.373)	(-2.943)	(-4.445)	(-3.708)
Directors	1,217	1,693	2,274	3,006
F-Stat	5.396	13.87	26.20	27.28
Adj R^2	0.219	0.227	0.240	0.253

This table presents OLS regressions for the compensation of outside directors. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. The dependent variable is *Total Compensation*, which is the sum of cash, stock and stock awards obtained by a director during the year. *Fraud* is an indicator variable that equals one if a director is from a fraudulent firm. *Departed* is an indicator variable that equals one if a director departs during the year. *Appointed* is an indicator variable that equals one if a director is appointed during the year. *LnAssets* is a natural logarithm of total assets. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *R&Dexp* is the ratio of research and development expenses to total assets. *Capex* is capital expenditures divided by sales. *ROA* is net income less extraordinary items divided by total assets. *Leverage* is the ratio of long-term and short-term debt over total assets. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

As predicted the variable *Fraud* is insignificant in the first two columns and becomes significant in columns (3) and (4). This result suggests that fraudulent firms offer significantly higher compensation one year and two years following the revelation of fraud compared with the control firms. Specifically, in the first year

after the fraud is revealed, culpable firms offer on average around $21,000 more for each director than control firms, while in the second post-fraud year these firms offer around $28,000 more. Moreover, as expected, directors who depart or are appointed during the fiscal year receive significantly lower compensation. This is demonstrated by the negative coefficients on *Departed* and *Appointed* in all four columns.

Consistent with previous studies, larger firms (*LnAssets)*, growth firms (*MTB)* and firms with more investment opportunities (*R&Dexp* and *Capex*) offer higher director pay (Brick et al., 2006; Linn and Park, 2005; Bryan et al., 2000a). The effect of *ROA* and *Leverage* is mostly insignificant in all columns, with the exception of column (1). In this column *Leverage* is positive and significant at the 10% level suggesting that more levered firms offer higher compensation to their directors. Lastly, consistent with expectations, *Board Size* is negative and significant in all four columns, while *IndPrcnt* is significant in columns (2) through (4). The negative coefficient on *Board Size* suggests that larger boards require less effort from each individual director and hence are likely to offer lower pay. On the other hand, the positive coefficient on *IndPrcnt* suggests that the higher proportion of outside directors on the board provides them with higher bargaining power, which enables them to obtain higher compensation. In Appendix 11 I investigate the robustness of the results by logging the dependent variable; however, the interpretation from the results remain unchanged.

Table 15 further extends the results in Table 14 and investigates the effect of fraud on each individual component of compensation.

Table 15: OLS regressions for the different components of compensation of outside directors

Variable		Cash t=-1	Cash t=0	Cash t=1	Cash t=2	Opt t=-1	Opt t=0	Opt t=+1	Opt t=+2	Stock t=-1	Stock t=0	Stock t=0	Stock t=+1
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Fraud	+	5.383	6.446	**15.511*** **	**16.180*** **	**15.049***	-2.851	8.688	3.350	-9.624	-7.442	-2.852	8.443
		(1.074)	(1.505)	**(4.349)**	**(4.990)**	**(1.920)**	(-0.255)	(1.228)	(0.522)	(-0.815)	(-1.000)	(-0.436)	(1.611)
Departed	+	-22.778***	-35.921***	-41.409***	-36.598***	-20.148**	-19.299	-24.505***	-20.688***	-13.531	-24.787***	-25.970***	-25.888***
		(-3.256)	(-7.202)	(-11.532)	(-11.100)	(-2.035)	(-1.388)	(-4.064)	(-4.661)	(-0.976)	(-4.554)	(-5.222)	(-4.273)
Appointed	?	-32.494***	-25.961***	-33.669***	-27.957***	-5.035	-5.346	-6.503	-10.517**	-27.567**	-17.512***	-14.627***	-5.985
		(-8.578)	(-6.431)	(-10.056)	(-7.590)	(-0.352)	(-0.661)	(-0.788)	(-2.360)	(-2.585)	(-2.971)	(-2.753)	(-1.191)
LnAssets	?	11.800***	11.597***	11.297***	9.652***	5.046	13.313***	6.563**	3.863	7.805*	9.275***	9.205***	11.354***
		(5.662)	(7.197)	(7.526)	(6.956)	(1.601)	(3.699)	(2.327)	(1.456)	(1.781)	(3.215)	(3.467)	(5.132)
MTB	?	2.506	2.171	-1.473	-0.732	6.346*	12.372***	21.397***	7.805**	16.466	1.722	3.089	2.663
		(0.951)	(1.179)	(-0.951)	(-0.531)	(1.824)	(2.750)	(3.861)	(2.295)	(1.134)	(0.847)	(0.942)	(1.273)
R&Dexp	?	8.242	-43.394	1.362	15.919	139.113	266.285***	63.972	103.668***	-27.280	-64.945*	2.642	-2.313
		(0.205)	(-1.373)	(0.077)	(1.122)	(1.440)	(2.694)	(1.276)	(3.481)	(-0.285)	(-1.818)	(0.063)	(-0.067)
Capex	?	15.592	35.831	-1.061	74.667	55.677	63.579	99.747	-11.764	79.859	123.098*	128.428	161.563**
		(0.256)	(0.550)	(-0.035)	(1.581)	(0.689)	(0.513)	(1.395)	(-0.161)	(0.566)	(1.670)	(1.584)	(2.059)
ROA	?	-23.381	-19.624	-3.945	-1.054	53.656*	25.206	-22.103	39.247**	-79.995	-34.997	-1.569	-9.080
		(-1.224)	(-1.039)	(-0.445)	(-0.130)	(1.721)	(0.641)	(-0.842)	(2.282)	(-0.898)	(-1.642)	(-0.083)	(-0.647)
Leverage	?	-3.050	2.080	-1.821	13.371	31.728	-28.438*	-17.335	-5.330	125.823	-5.971	-5.220	-5.763
		(-0.218)	(0.175)	(-0.205)	(1.200)	(1.337)	(-1.656)	(-1.352)	(-0.448)	(1.392)	(-0.345)	(-0.415)	(-0.550)
Board Size	?	-2.369*	-4.461***	-3.572***	-2.035**	-5.006***	-8.105***	-3.194*	-3.768**	0.043	0.700	0.225	-0.950
		(-1.708)	(-2.898)	(-2.676)	(-2.117)	(-2.899)	(-3.722)	(-1.670)	(-2.257)	(0.013)	(0.303)	(0.116)	(-0.603)
IndPrcnt	?	48.557***	59.938***	48.156***	35.811**	9.630	-22.954	19.916	8.421	-24.981	62.415**	53.556**	77.168***
		(3.125)	(3.189)	(3.038)	(2.534)	(0.314)	(-0.568)	(0.713)	(0.332)	(-0.479)	(2.509)	(2.174)	(3.043)
Constant		-44.828***	-29.020**	-22.181*	-23.207*	7.541	10.583	-38.512	17.905	-42.360	-71.609***	-65.333***	-95.494***
		(-2.922)	(-2.243)	(-1.776)	(-1.955)	(0.325)	(0.399)	(-1.414)	(0.787)	(-0.824)	(-3.857)	(-3.094)	(-4.794)
Directors		1,217	1,694	2,274	3,008	1,218	1,694	2,274	3,008	1,217	1,694	2,274	3,008
F-Stat		13.58	14.63	25.92	24.88	0.138	0.158	0.114	0.069	2.232	7.147	5.645	8.313
Adj R^2		0.176	0.239	0.255	0.229	3.408	4.410	4.747	5.879	0.127	0.154	0.0998	0.169

This table presents OLS regressions for the compensation of outside directors. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. In columns (1) through (4) the dependent variable is *Cash,* which is the total amount of cash received by a director during the year. In columns (5) through (8) the dependent variable is *Options,* which equals the dollar amount of options received by a director during the year. In columns (9) through (12) the dependent variable is *Stock,* which equals to the dollar amount of stock received by a director during the year. *Fraud* is an indicator variable that equals one if a director is from a fraudulent firm. *Departed* is an indicator variable that equals one if a director departs during the year. *Appointed* is an indicator variable that equals one if a director is appointed during the year. *LnAssets* is a natural logarithm of total assets. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *R&Dexp* is the ratio of research and development expenses to total assets. *Capex* is capital expenditures divided by sales. *ROA* is net income less extraordinary items divided by total assets. *Leverage is* the ratio of long-term and short-term debt over total asset. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

Results for the cash component of the compensation are presented in columns (1) through 4. Results for the option component are shown in columns (5) through (8), and stock component results in columns (9) through (12). The results in Table 12 demonstrate that the increase in compensation in the years following the revelation of fraud is primarily driven by the cash component of compensation. This is demonstrated by the positive and significant coefficients on the variable *Fraud* in columns (3) and (4). Specifically, these results demonstrate that, in the first post-fraud year, culpable firms offer on average around $15,500 more for each director than control firms, while in the second post-fraud year these firms offer around $16,000 more.

Moreover, the results in column (5) demonstrate that fraudulent firms provide their outside directors with a significantly higher amount of options in the year prior to the revelation of fraud. This result is consistent with Archambeault et al. (2008) who document a positive relation between stock option grants for audit committee members and the likelihood of restatements. Interestingly, results in columns (6) through (8) demonstrate that there is no statistically significant difference between the amount of options offered by fraudulent firms and the control sample of firms in the year of the revelation of fraud and in the subsequent two years. This suggests that fraudulent firms change the structure of directors' compensation following the revelation of fraud, by reducing the amount of options offered to their directors.

Results for the control variables are similar to those in Table 14. In addition to the results in Table 14 I find that the positive association between *R&Dexp* and *MTB* and total compensation is primarily driven by the option component of

compensation. This result is consistent with Linck et al. (2009) and Linn and Park (2005) who also find that firms with higher research and development expenditure and more growth opportunities offer more options to their outside directors.

Appendix 12 provides results with logged dependent variables. After logging the different components of compensation the results remain similar to those in Table 15. However, after the logging dependent variables, *Fraud* becomes significant in columns (7) and (12). This result suggests that fraudulent firms provide more compensation in the form of options in the year following the revelation of fraud and more compensation in the form of stock in the second year after the fraud is revealed.

In additional testing, I redefine the dependent variable *Total Compensation* by including other compensation such as pensions and non-equity incentive rewards. The results are reported in Appendix 13 and are similar to the results reported in Table 14. Lastly, in Appendix 14 I restrict my sample to appointed directors on both the fraudulent and control firms and investigate the compensation that they receive a year following their appointment. The results in Appendix 14 are similar to those in Table 15. However, the magnitude of the coefficient *Fraud* increases from 15.511 to 27.426 for cash compensation in the year following the revelation of fraud and from 16.180 to 21.969 in the second year after the fraud is revealed.

4.9 Market reaction to director appointments (H5)

To identify the exact date of the initial announcement of a director appointment I use information from BoardEx, Factiva, proxy statements and 8-K filings.[16] Using this information I identify the appointment date for 1,112 directors. I delete 75 appointments due to the non-availability of market data from CRSP. I then use the EDGAR database and Factiva retrieval system to search for newspaper stories and press releases to ensure that outside director appointment announcements are not confounded by other news. I search for all news that appears during the three-day event window (-1, +1), where day zero is the director appointment announcement date. Next, I classify all confounding news into different types of events, according to the nature of the event.[17]

Consequently, I remove 190 appointments that were announced in the proxy statements, 132 appointments that were announced on the same day as financial results and 153 appointments that were announced on the same day as a major strategic decision such as an M&A, share repurchase, dividend increase etc. In addition, I further remove 36 appointments that occurred simultaneously with analyst forecasts, 47 appointments that coincided with executive appointments or resignations and 57 appointments that were announced on the same day as a new agreement such as auditor ratification or legal settlements. After all the deletions the final sample consists of 421 appointments that are not confounded by any major news. I use the CRSP database to calculate cumulative abnormal returns (CARs). The CARs are estimated over the three-day event window (-1, +1), using the

[16] Since August 2004 firms are required to disclose director appointment dates under the item 5.02 in 8-K filings.
[17] This allows us to verify the robustness of the results using different subsamples.

equal-weighted CRSP market portfolio. The parameters of the market model are estimated from -250 to -20 trading days prior to the event.

Table 16: Univariate analysis of means and median of CARs around the director appointment announcement

	Fraud Appointment	Control Firm Appointment	P-Value (mean) Z-Value(median)
All appointments	216	205	
Mean CAR (-1,1)/ P-value	0.27% (0.184)	0.41% (0.258)	0.731
Median CAR (-1,1)/Z-value	0.05% (0.541)	-0.04% (0.347)	0.881
Year -1 Appointment	63	70	
Mean CAR (-1,1)/ P-value	1.22% (**0.003*****)	0.63% (**0.053***)	0.259
Median CAR (-1,1)/Z-value	0.63% (**0.009*****)	0.43% (**0.068***)	0.394
Year +1 Appointment	70	76	
Mean CAR (-1,1)/ P-value	-1.85% (**0.004*****)	0.41% (0.237)	**0.002*****
Median CAR (-1,1)/Z-value	-1.10% (**0.003*****)	0.18% (0.330)	**0.003*****
Year +2 Appointment	83	59	
Mean CAR (-1,1)/ P-value	1.72% (**0.014****)	-0.35% (0.365)	**0.020****
Median CAR (-1,1)/Z-value	0.38% (**0.089***)	-0.34% (0.141)	**0.064***

This table compares means and medians of CARs (-1, +1) around the director appointment announcement for fraudulent firms and control sample of firms. *t*-statistics are used for the mean comparison and the Wilcoxon rank sum tests are used for the median difference. The superscripts ***, **, and * denote significance at 1%, 5%, and 10% confidence levels.

Table 16 compares the mean and median $CARs_{(-1,+1)}$ around the director appointment announcements. This table demonstrates that the market reaction around the director appointment announcement is not statistically significant from zero for both fraudulent firms and the control sample of firms using the total sample of the appointments. However, after partitioning the full sample based on the year of the appointment, the significance of the results becomes more pronounced. For example, in Year -1 both fraudulent firms and control firms experienced a positive and statistically significant market reaction around the director appointment announcement. However, when comparing the mean and the median CARs produced by each of the samples, there is no statistically significant difference between the two sets of firms.

In contrast, in Year +1 the market reaction is negative and statistically significant for fraudulent firms and it is insignificant for the control sample of firms. The difference in the market reaction between the two samples of firms is significant at the one percent level. This result demonstrates that, in the first year after the revelation of fraud, the market perceives the appointment of outside directors to be value destructive for culpable firms. This finding is inconsistent with the view that the director replacement process is likely to increase the value of fraudulent firms, which is against the prediction in H3. Nevertheless, in Year +2 the market reaction becomes positive for fraudulent firms and it also becomes statistically higher than the market reaction for the control sample of firms. Overall, these results suggest that although the director replacement process is not perceived to be value enhancing in the first year after the revelation of fraud, this process has a positive effect on the value of fraudulent firms in the second year.

Since previous research suggests that the director replacement process is undertaken by fraudulent firms to recover their value, the negative stock market reaction in the first year post-fraud is unexpected. This result could be driven by the significant amount of uncertainty regarding the charges levied against culpable firms during the post-revelation period (Karpoff et al., 2008). When the uncertainty is high the stock market may interpret the increase in the outside director turnover as an indication of rising costs. Therefore, even when fraudulent firms appoint qualified and experienced directors, the market reaction is likely to be negative until the uncertainty is resolved.

To verify the robustness of the results reported in Table 16 I create four different subsamples of appointment announcements based on the confounding events that occurred simultaneously. Appendix 15 provides the results for this analysis. The results in four different samples are similar to the results reported in Table 16.

Table 17 presents the results of a multivariate analysis of the market reaction to the appointment of the replacement directors (H3) using the following ordinary least squares regression:

$$CAR_{(-1.+1)i} = \alpha + \beta_1 Fraud + \beta_2 Ln(Asset)_i + \beta_3 MTB_i + \beta_4 ROA_i + \varepsilon \qquad (6)$$

Column (1) reports the result for the market reaction to all outside directors who joined fraudulent firms during the three-year period around the revelation of fraud. The remaining three columns compare the CARs around the director appointment announcement for each year separately. Since variables are measured at the director level, standard errors are clustered by firm in all regressions.

Table 17: OLS regression for the CARs around the director appointment announcement					
Variable	Predicted	Three years	T-1	T+1	T+2
		(1)	(2)	(3)	(4)
Fraud	?	-0.0321	0.495	**-2.165****	**1.704***
		(-0.0661)	(0.877)	**(-2.481)**	**(1.803)**
Ln(Asset)	?	-0.0722	0.00774	0.206	-0.219
		(-0.790)	(0.0592)	(1.335)	(-1.444)
MTB	?	-0.682	1.261	-1.453**	-0.102
		(-1.185)	(1.142)	(-2.259)	(-0.154)
ROA	?	-1.212	-2.722	0.994	-4.276**
		(-0.490)	(-1.448)	(0.248)	(-2.007)
Constant	?	1.849	-1.234	0.841	1.516
		(1.465)	(-0.513)	(0.565)	(0.969)
Directors		421	133	146	142
F-stat		0.580	1.541	2.865**	3.928***
Adj R^2		-0.001	0.011	0.101	0.052

This table presents OLS regressions (grouped by firm) of CARs around the appointment of outside directors on various firm-specific determinants. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. The dependent variable is *CAR (-1, +1),* which are the cumulative abnormal stock market returns over a three-day period around the director appointment announcement. *Fraud* is an indicator variable and takes a value of one for directors who were appointed by fraudulent firms and zero for directors who were appointed by the control non-fraud firms. *LnAssets* is the natural logarithm of total assets. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *ROA* is net income less extraordinary items divided by total assets. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

The results in Table 17 are consistent with the univariate analysis in Table 16. Similar to Table 16, there is no statistically significant difference in the market reaction between the two sets of firms using the aggregated sample of appointments. This is demonstrated by an insignificant coefficient on the variable *Fraud* in column (1). The coefficient on the variable *Fraud* is also insignificant in column (2). This suggests that, in the year prior to the revelation of fraud, the market reaction to the director appointment announcement in fraudulent firms is not statistically different to the corresponding market reaction in the control sample of firms. Moreover, column (3) demonstrates that fraudulent firms experience a significantly lower market reaction around the director appointment announcement in the first year after the revelation of fraud, while column (4) demonstrates that fraudulent firms experience a significantly higher market reaction in the Year +2. Overall, similarly to Table 16, the results in Table 17 are not

entirely consistent with H3, which predicts that director replacement is expected to result in a positive market reaction.

In Appendix 17 I investigate whether characteristics of the appointed directors affect the market reaction around their appointment by including variables *Experience, Lawyer* and *Accountant* in equation (6). The coefficients on these variables are insignificant, suggesting that these characteristics of outside directors do not affect the market reaction around the appointment of outside directors.

Chapter 5

Conclusions

Existing literature demonstrates that the revelation of fraud is followed by a significant increase in outside director departures (Brochet and Srinivasan, 2014; Marcel and Cowen, 2014; Karpoff et al., 2008; Arthaud-Day et al., 2006, Srinivasan, 2005). These studies suggest that troubled firms have a strong incentive to improve the monitoring and advising ability of their board and remove directors with a questionable ability to provide these services. In addition, these findings imply that fraudulent firms have a strong incentive to replace departing directors with more qualified and experienced directors who have better monitoring and advising skills. Since qualified and experienced directors may choose to avoid joining fraudulent firms I investigate the characteristics of the directors that are appointed by fraudulent firms following the revelation of fraud.

I find that, in comparison to a control sample of firms, fraudulent firms appoint more experienced outside directors in the year prior and one year after the revelation of fraud. Fraudulent firms are also significantly more likely to appoint qualified outside directors in the year prior to the revelation of fraud and also in the following two years. The result is particularly strong for directors with accounting expertise. As a result, one year after the fraud is revealed, the proportion of qualified directors on the board of the fraudulent firms becomes statistically higher than the proportion of qualified directors on the board of the control sample of firms.

Moreover, the higher proportion of qualified directors is sustained by fraudulent firms up until three years after the fraud is revealed. This divergence in the proportions of qualified directors between the two sets of firms is driven by both

legal and accounting experts. Therefore, although the results from previous research imply that firms may struggle to appoint qualified and experienced directors, I find that this is not the case. The results in this thesis support the idea that, in the post-fraud period, culpable firms remove less qualified directors from their board and replace them with more qualified and experienced directors.

Next, I investigate the incentives of outside directors to join fraudulent firms. I find that outside directors who join fraudulent firms within the three-year period around the revelation of fraud obtain more directorships than directors who were present on the board prior to the revelation of fraud and directors from the control sample of firms. This result is particularly strong for directors who joined fraudulent firms within the first year after the fraud is revealed. In addition, I find that fraudulent firms offer higher compensation to their outside directors in the years following the revelation of fraud. Specifically, in the first year after the fraud is revealed, culpable firms offer on average around $21,000 more for each director than control firms, while in the second post-fraud year these firms offer around $28,000 more.

Lastly, this thesis explores whether the stock market reacts positively to the appointment of the replacement directors. The results of the thesis demonstrate that, on average, the stock market reacts negatively to the appointment of new outside directors in the first year after the fraud is revealed and the market reaction becomes positive in the second year. Although previous research suggests that the director replacement process is a part of recovery actions and should enhance shareholders' value (Brochet and Srinivasan, 2014; Marcel and Cowen, 2014;

Arthaud-Day et al., 2006), the relation between the market reaction and appointment of the replacement directors is not positive in both years.

I caution that there are a number of caveats to my findings. First, one limitation of using class action lawsuits to identify financial fraud is that the sample of frauds may include frivolous cases. All cases settled before reaching a court verdict and settlement almost always involve no admission of wrongdoing (Dyck et al., 2010). As a result, it is impossible to establish whether there was an actual fraud, negligence or a mistake. Therefore, my sample of fraudulent firms contains events were fraud is alleged, but not actually proven. In this thesis I refer to lawsuit fillings as financial fraud, but it should be noted that my sample includes only cases where fraud is alleged to have occurred.

In an attempt to overcome this limitation, I restrict my attention to settled lawsuits and disregard ongoing or dismissed lawsuits as this reduces the likelihood of including frivolous cases in the sample (Dyck et al., 2010). I also collect data on settlement amounts. Following, Fich and Shivdasani (2007) I consider the presence of high subsequent settlement as evidence of the fraud occurrence. In additional testing, I investigate whether the size of the penalty affects the results of this thesis; however, the results remain unchanged.

Another caveat in this thesis is that the results may be affected by some unobservable covariates between the fraudulent firms and control firms, which is a common problem in corporate governance literature. In an attempt to alleviate this concern, I verify all the results using fraudulent firms as their own control. Specifically, I compare the variables of interest (proportion of qualified and

experienced directors on the board, compensation, number of other boards held by outside directors, market reaction) for fraudulent firms prior to the revelation of fraud and over the three year after the fraud is revealed. I find that there are significant changes in these variables over time and these changes are consistent with my expectations. This provides further confidence that the findings are not driven by unobservable differences between the control firms and fraudulent firms.

The findings of this thesis provide a number of avenues for future research. For example, it is important to provide a more in depth analysis on the careers of outside directors who join fraudulent firms. Specifically, investigating the characteristics of the companies that the replacement directors join and the roles that they obtain in those companies may provide further understanding of the director labour market incentives. It is also important to understand whether the interlocked firms suffer from their directors accepting the board seats on the board of fraudulent firms. Since fraudulent firms require additional workload, outside directors may spend less time providing their services to their other directorships, after joining fraudulent firm s.

Moreover, this thesis focuses on the director replacement process only in the context of financial fraud. However, directors are likely to be replaced in other settings, such as a significant decline in firm performance or firm restructuring. As each of the events is likely to require directors with a particular skillset, the implications of the director replacement process are likely to be different in each of these settings. Last, I find that fraudulent firms that continue to operate are likely to attract qualified and experienced directors and these directors benefit from

joining these firms. However, it is not clear whether fraudulent firms that are delisted within three years after the revelation of fraud also engage in the director replacement process. And if they do, it is also not clear whether the incentives and characteristics of the replacement directors that join these firms are similar to those documented in this thesis. Addressing these questions can provide further evidence on the importance of the director replacement process and the incentives provided by the director labour market.

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APPENDIX 1

Correlation matrix

Variable	*Fraud*	Average Exp	Appointed Qual	*Qual Year Start*	*Qual departed*	CEO Departed	*Board Size*	*%IndDir*	*ExecChairman*	*Ln(Asset)*	*Capex*	*MTB*	*ROA*
Fraud	1												
Average Exp	-0.095	1											
Appointed Qual	0.071	0.040	1										
Qual Year Start	0.111	-0.004	-0.033	1									
Qual Departed	0.042	0.018	0.193	0.206	1								
CEO Departed	0.250	-0.012	0.121	0.049	0.052	1							
Board Size	-0.084	0.248	0.111	0.001	0.003	0.050	1						
%IndDir	-0.091	0.142	0.011	0.011	0.018	0.011	0.053	1					
ExecChairman	-0.071	0.040	-0.026	0.001	0.004	-0.211	0.094	-0.102	1				
Ln(Asset)	-0.026	0.328	0.100	0.066	0.006	0.021	0.697	0.125	0.152	1			
Capex	0.091	0.022	-0.000	0.006	-0.019	-0.046	-0.052	-0.004	-0.054	-0.095	1		
MTB	-0.050	-0.087	-0.041	-0.059	-0.035	-0.065	-0.385	-0.021	-0.034	-0.459	-0.034	1	
ROA	-0.202	0.013	-0.008	0.031	-0.011	-0.064	0.124	-0.027	0.143	0.316	-0.287	0.093	1

Fraud is a dummy variable that equals one for fraudulent firms. *Average Exp* is the average number of previous board seats possessed by all outside directors on the board. *Appointed Qual* is a number of qualified outside directors appointed to the board. *Qualified Year Start* represents the proportion of qualified outside directors who were present on the board in the year prior to the appointment of a new outside director. *Qualified departed* is the number of qualified outside directors who *departed* during the same year as the newly appointed director. *CEO Departed* is a dummy variable that equals to one if the CEO leaves the firm during the year. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *ExecChairman* is a dummy variable that equals one if the CEO and the chairman in the firm are the same person and zero otherwise. *LnAssets* is the natural logarithm of total assets. *Capex* is capital expenditures divided by sales. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *ROA* is net income less extraordinary items divided by total assets.

APPENDIX 2

Univariate analysis of director turnover and changes in director experience and qualifications					
Variable	Firm	Change -1 to end of -1	Change +1 to end of +1	Change +2 to end of +2	Change +3 to end of +3
		Mean	Mean	Mean	Mean
Turnover	Fraud	0.097	0.111	0.105	0.088
	Control	0.086	0.070	0.080	0.068
	(t-stat)	0.807	**3.320*** **	**1.794***	**1.716***
Exp	Fraud	0.091	0.047	-0.019	0.107
	Control	0.051	0.003	0.032	0.030
	(t-stat)	0.911	1.065	0.618	0.968
%Qual	Fraud	0.044	0.037	0.042	0.029
	Control	0.022	0.043	0.014	0.012
	(t-stat)	1.293	0.271	**1.991** **	1.339
%Law	Fraud	0.005	0.008	0.006	0.002
	Control	0.003	0.004	-0.006	-0.003
	(t-stat)	0.495	0.742	**2.580*** **	1.006
%Acc	Fraud	0.027	0.029	0.017	0.008
	Control	0.016	0.013	0.011	0.016
	(t-stat)	1.325	**2.240** **	0.966	-1.092

This table compares director turnover, changes in average director experience and the mean proportion of qualified directors for fraudulent and control sample of firms in the year prior and three years after the revelation of fraud. *t*-statistics are used for the mean comparison and the Wilcoxon rank sum tests are used for the median difference. The superscripts ***, **, and * denote significance at 1%, 5%, and 10% confidence levels.

APPENDIX 3

Logit regression for the likelihood of the appointment of an experienced director					
Variable	Predicted	Three years	T-1	T+1	T+2
		(1)	(2)	(3)	(4)
Fraud	+	0.133	0.296	**0.478***	-0.260
		(0.931)	(1.281)	**(1.907)**	(-1.075)
%Directors depart	?	0.835**	0.836	1.606**	0.599
		(2.152)	(1.020)	(2.159)	(0.981)
CEO departed	?	0.068	0.051	-0.211	-0.227
		(0.491)	(0.132)	(-0.693)	(-0.823)
Board Size	?	-0.100***	-0.105*	-0.155***	-0.102*
		(-3.189)	(-1.889)	(-2.695)	(-1.905)
Indprcnt	?	0.029	0.553	-1.938**	1.478*
		(0.079)	(0.934)	(-2.222)	(1.882)
ExecChairman	?	0.014	-0.228	-0.112	0.194
		(0.107)	(-0.979)	(-0.440)	(0.813)
Ln(Asset)	?	0.268***	0.202***	0.408***	0.270***
		(6.148)	(3.001)	(5.100)	(3.335)
Capex	?	-0.015	0.025	-0.134	-1.322
		(-0.113)	(0.087)	(-0.793)	(-0.928)
MTB	?	0.727***	0.679	0.832	0.657
		(2.735)	(1.232)	(1.630)	(1.385)
ROA	?	-0.763*	-0.532	-1.201**	-0.846
		(-1.687)	(-0.691)	(-2.045)	(-1.070)
Constant	?	-2.443***	-2.037	-1.841	-3.203***
		(-3.765)	(-1.552)	(-1.490)	(-2.623)
Directors		1,133	349	389	395
Wald chi2		48.08***	13.79	37.82***	20.77**
Pseudo R^2		0.0317	0.0268	0.0791	0.0404

This table presents Logit regressions of outside director experience on various firm and director-specific determinants. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. The dependent variable is *Experience*, which is a binary variable that equals one if a director's years of experience as an outside director exceed the average years of experience for all appointed directors in the sample. *Fraud* is an indicator variable and takes the value of one for directors who were appointed by fraudulent firms and zero for directors who were appointed by the control non-fraudulent firms. *%Directorships Depart* is defined as the number of outside directors departed during the year divided by the total number of outside directors on the board. *CEO Departed* is a dummy variable that equals to one if the CEO leaves the firm during the year. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *ExecChairman* is a dummy variable that equals one if the CEO and the chairman in the firm are the same person and zero otherwise. *LnAssets* is the natural logarithm of total assets. *Capex* is capital expenditures divided by sales. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *ROA* is net income less extraordinary items divided by total assets. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

APPENDIX 4

Logit regression for the likelihood of a qualified director appointment

Dependent Variable	Predicted	*Qualified*	*Lawyers*	*Accountants*
		(1)	(2)	(3)
Fraud	+	**0.830*** **	0.262	**0.827*** **
		(4.359)	(0.817)	**(3.617)**
Qualified Year Start	-	-0.516		
		(-1.332)		
Qualified departed	+	5.451***		
		(4.092)		
*Fraud*Qual Year Start*	+	-2.434***		
		(-3.176)		
*Fraud*Qualified departed*	+	2.124		
		(1.184)		
Lawyers Year Start	-		0.529	
			(0.414)	
Lawyers departed	+		6.492**	
			(2.483)	
*Fraud*Lawyers Year Start*	+		-0.355	
			(-0.216)	
*Fraud*Lawyers departed*	+		1.568	
			(0.484)	
Accnt Year Start	-			-1.214*
				(-1.709)
Accnt departed	+			8.483***
				(4.306)
*Fraud*Accnt Year Start*	+			-1.929*
				(-1.846)
*Fraud*Accnt departed*	+			0.767
				(0.293)
Board Size	?	0.049	0.029	0.050
		(1.491)	(0.671)	(1.475)
%IndDir	?	0.057	-0.789	0.410
		(0.124)	(-1.150)	(0.818)
ExecChairman	?	-0.196	-0.124	-0.219
		(-1.470)	(-0.586)	(-1.497)
Ln(Size)	?	0.101**	0.109	0.073
		(2.061)	(1.555)	(1.355)
Capex	?	-0.066	0.063	-0.212
		(-0.410)	(0.247)	(-1.007)
Tobin	?	0.263	-0.217	0.182
		(0.942)	(-0.443)	(0.591)
ROA	?	-0.385	-0.303	-0.457
		(-1.078)	(-0.446)	(-1.273)
Constant	?	-2.870***	-2.967***	-3.026***
		(-3.980)	(-2.771)	(-3.751)
Firm years		1,566	1,566	1,566
Wald chi^2		95.70***	47.13***	84.09***
Pseudo R^2		0.0640	0.0422	0.0653

This table presents logit regressions (grouped by firm) of the likelihood that a company appoints a qualified outside director. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at 1% level. *Fraud* is a categorical variable that takes a value of one for fraudulent companies and value of zero for matched sample of firms. *Qualified Year Start* represents the proportion qualified outside directors who were present on the board in the year prior to the appointment of a new outside director. *Qualified departed* is the number of qualified outside directors who *departed* during the same year as the newly appointed director. All other variables are defined in Table 1. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

APPENDIX 5

Univariate analysis of changes in outside directors' other board seats					
		Change T0 to T+1	**Change T+1 to T+2**	**Change T+2 to T+3**	**3 year change**
Appoint -1	Fraud	0.041	-0.036	-0.057	-0.052
	Control	-0.012	0.025	0.006	0.019
	t-Stat	0.804	-1.056	-1.259	-0.732
Appoint+1	Fraud	-0.014	-0.042	0.057	-0.0192
	Control	-0.131	-0.005	-0.017	-0.155
	t-Stat	**2.350****	-0.866	1.549	**1.683***
Appoint+2	Fraud	0	-0.021	-0.009	-0.018
	Control	-0.036	0.024	-0.012	-0.018
	t-Stat	0.643	-0.948	0.076	0.010

This table compares the means of changes in the other board seats held by the outside directors who join fraudulent firms and the control sample of firms in the year prior to the revelation of fraud and within two years after the fraud was revealed. T-statistics are used for the mean comparison. The superscripts ***, ** and * denote significance at 1%, 5% and 10% confidence level.

APPENDIX 6

OLS and Logit regressions for the change in directorships of directors from control and fraudulent firms

VARIABLES	OLS Year -1 (1)	Logit I Year -1 (2)	Logit D Year -1 (3)	OLS Year +1 (4)	Logit I Year +1 (5)	Logit D Year +1 (6)	OLS Year +2 (7)	Logit I Year +2 (8)	Logit D Year +2 (9)
Fraud	-0.065**	-0.218	0.181	-0.078***	-0.365**	0.280**	-0.080**	-0.192	0.362**
	(-2.064)	(-1.405)	(1.434)	(-2.593)	(-2.229)	(2.140)	(-2.195)	(-1.101)	(2.364)
Appoint	0.038	0.413*	0.156	-0.093	-0.114	0.548**	0.079	0.375	-0.056
	(0.567)	(1.648)	(0.590)	(-1.610)	(-0.427)	(2.230)	(1.217)	(1.414)	(-0.190)
Fraud*Appoint	0.055	0.044	-0.141	**0.180****	0.531	**-0.748****	0.030	-0.071	-0.202
	(0.579)	(0.131)	(-0.396)	**(2.248)**	(1.584)	**(-2.148)**	(0.361)	(-0.205)	(-0.557)
Departed	-0.225***	-0.129	0.913***	-0.190**	0.017	0.333	-0.071	-0.047	0.236
	(-3.128)	(-0.464)	(4.456)	(-2.308)	(0.056)	(1.351)	(-1.009)	(-0.129)	(0.880)
Fraud*Departed	0.078	0.168	-0.463	0.101	-0.260	-0.195	0.117	0.230	-0.450
	(0.677)	(0.448)	(-1.417)	(0.869)	(-0.613)	(-0.556)	(1.310)	(0.498)	(-1.279)
Boards at t=0	-0.437***	-0.371***	1.041***	-0.295***	-0.244***	0.952***	-0.294***	-0.269***	1.022***
	(-7.869)	(-5.649)	(13.632)	(-12.603)	(-3.794)	(12.521)	(-12.773)	(-4.050)	(13.401)
AgeYrs	-0.010***	-0.040***	0.026***	-0.009***	-0.048***	0.027***	-0.008***	-0.050***	0.021***
	(-7.399)	(-7.343)	(4.621)	(-6.162)	(-7.976)	(4.292)	(-5.508)	(-8.591)	(3.349)
Lawyer	0.067	-0.150	-0.341	-0.022	-0.385	-0.234	-0.016	-0.210	-0.276
	(1.364)	(-0.697)	(-1.632)	(-0.452)	(-1.531)	(-1.277)	(-0.307)	(-0.760)	(-1.200)
Lawyer*Fraud	0.018	0.563**	0.159	0.158**	0.732**	-0.369	0.153**	0.319	-0.494
	(0.240)	(2.056)	(0.516)	(2.154)	(2.341)	(-1.175)	(2.154)	(0.903)	(-1.384)
Accountant	0.209***	0.681***	-0.462***	0.051	0.222	-0.035	0.010	0.026	0.037
	(4.000)	(4.215)	(-2.727)	(1.092)	(1.267)	(-0.220)	(0.222)	(0.125)	(0.210)
Accountant*Fraud	0.008	-0.002	0.192	0.130**	0.616***	-0.280	0.106*	0.320	-0.361
	(0.112)	(-0.010)	(0.803)	(2.075)	(2.687)	(-1.131)	(1.845)	(1.160)	(-1.425)
CEO	0.153**	0.419**	0.156	-0.012	-0.194	0.306	-0.066	-0.055	0.570***
	(2.540)	(2.193)	(0.833)	(-0.207)	(-0.798)	(1.571)	(-1.156)	(-0.211)	(3.059)
Prior Exp	0.084***	0.241***	-0.008	0.036***	0.206***	-0.010	0.026***	0.169***	0.003
	(3.612)	(6.317)	(-0.190)	(3.355)	(5.573)	(-0.283)	(2.720)	(4.602)	(0.110)
Board Size	-0.006	-0.051**	-0.018	-0.003	-0.039	0.000	-0.014**	-0.078**	0.052*
	(-1.165)	(-2.115)	(-0.768)	(-0.571)	(-1.211)	(0.019)	(-2.022)	(-2.469)	(1.793)
Indprcnt	-0.037	0.594	1.015***	0.106	0.789	0.041	0.094	1.282*	0.413
	(-0.414)	(1.395)	(3.023)	(1.332)	(1.419)	(0.111)	(0.951)	(1.845)	(0.812)
LnAssets	0.031***	0.107***	-0.039	0.016	0.089*	-0.007	0.022**	0.125***	-0.055
	(3.225)	(3.054)	(-1.197)	(1.617)	(1.934)	(-0.188)	(2.053)	(2.806)	(-1.207)
AvgROA	-0.044	-0.372	0.028	-0.129*	-0.201	0.531*	-0.039	0.345	0.361
	(-0.432)	(-0.945)	(0.084)	(-1.692)	(-0.564)	(1.741)	(-0.449)	(0.756)	(1.032)
Constant	0.516***	-0.938**	-4.578***	0.441***	-0.621	-4.322***	0.429***	-0.714	-4.427***
	(4.567)	(-2.156)	(-10.139)	(3.853)	(-1.091)	(-8.504)	(3.579)	(-1.097)	(-7.750)
Observations	3,923	3,923	3,923	3,659	3,659	3,659	3,353	3,353	3,353
F-statistic	16.02	159.2	519.3	18.54	139	443.4	17.34	127.5	489.4
Adj R-squared	0.301	0.0604	0.273	0.194	0.0564	0.237	0.210	0.0519	0.254

Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. *Fraud* is a dummy variable that equals one if a director is from a fraudulent firm. *Appoint* is a dummy variable that equals one if a director is appointed during the year. *Fraud*Appoint* is an interaction variable between *Fraud* and *Appoint. Departed* is a dummy variable that equals one if a director is appointed during the year. *Fraud*Departed* is an interaction variable between *Fraud* and *Departed. Boards at t=0* is the number of directorships held by a director at t=0. *AgeYrs* is the age of a director in years. *Lawyer*Fraud* is an interaction variable between *Lawyer* and *Fraud. Accountant* is a dummy variable that equals one if a director is classified as an accountant. *CEO* is a dummy variable that equals one if a director is also a CEO of another company. *Accountant *Fraud* is an interaction variable between *Accountant* and *Fraud. Prior Exp* is the number of board positions previously held by a director. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *LnAssets* is the natural logarithm of total assets. *AvgROA* is the average of ROA over a three-year period.

APPENDIX 7

OLS and Logit regressions for the change in directorships of directors from fraudulent firms only

VARIABLES	OLS Year -1 (1)	Logit I Year -1 (2)	Logit D Year -1 (3)	OLS Year +1 (4)	Logit I Year +1 (5)	Logit D Year +1 (6)	OLS Year +2 (7)	Logit I Year +2 (8)	Logit D Year +2 (9)
Appointed	0.099	**0.471****	0.021	0.084	**0.415****	-0.220	**0.103****	0.339	-0.207
	(1.467)	**(2.183)**	(0.087)	(1.537)	**(1.962)**	(-0.892)	**(1.982)**	(1.500)	(-1.026)
Departed	-0.139*	0.050	0.458*	-0.086	-0.244	0.127	0.049	0.180	-0.206
	(-1.688)	(0.199)	(1.753)	(-1.022)	(-0.804)	(0.523)	(0.884)	(0.631)	(-0.919)
Boards at t=0	-0.500***	-0.400***	0.999***	-0.265***	-0.135	0.889***	-0.283***	-0.249***	1.042***
	(-6.156)	(-4.092)	(8.564)	(-7.647)	(-1.434)	(7.998)	(-8.055)	(-2.617)	(9.374)
AgeYrs	-0.010***	-0.039***	0.016**	-0.010***	-0.046***	0.025***	-0.009***	-0.041***	0.033***
	(-4.886)	(-5.252)	(2.044)	(-4.634)	(-5.873)	(2.904)	(-4.847)	(-4.996)	(3.798)
Lawyer	0.099	0.417**	-0.176	0.134**	0.325*	-0.585**	0.135***	0.084	-0.756***
	(1.647)	(2.444)	(-0.766)	(2.479)	(1.742)	(-2.403)	(2.803)	(0.389)	(-2.920)
Accountant	0.227***	0.692***	-0.284	0.176***	0.833***	-0.284	0.112***	0.362**	-0.292
	(4.387)	(4.224)	(-1.597)	(4.300)	(5.577)	(-1.537)	(2.869)	(2.023)	(-1.593)
CEO	0.144	0.462	0.124	-0.042	-0.367	0.334	-0.096	-0.503	0.658**
	(1.533)	(1.575)	(0.455)	(-0.472)	(-0.898)	(1.097)	(-1.262)	(-1.136)	(2.336)
Prior Exp	0.099***	0.267***	0.034	0.031*	0.161***	-0.011	0.022	0.175***	-0.032
	(2.816)	(5.222)	(0.665)	(1.900)	(3.222)	(-0.234)	(1.456)	(4.229)	(-0.777)
Board Size	0.009	0.001	-0.026	-0.011	-0.067	0.039	-0.016	-0.054	0.053
	(0.814)	(0.011)	(-0.780)	(-1.252)	(-1.207)	(1.055)	(-1.458)	(-1.000)	(1.090)
Indprcnt	-0.112	0.657	0.963**	0.143	0.486	-0.204	0.035	0.327	0.648
	(-0.832)	(1.260)	(2.232)	(1.316)	(0.631)	(-0.428)	(0.241)	(0.391)	(0.879)
LnAssets	0.022	0.063	-0.002	0.022	0.144**	-0.039	0.023	0.135**	-0.074
	(1.504)	(1.208)	(-0.032)	(1.539)	(1.970)	(-0.688)	(1.645)	(2.136)	(-1.187)
AvgROA	-0.286**	-0.953**	-0.032	-0.280***	-0.939**	0.759*	-0.050	-0.160	0.432
	(-2.168)	(-2.263)	(-0.069)	(-2.773)	(-2.314)	(1.759)	(-0.406)	(-0.288)	(0.973)
Constant	0.425***	-1.490***	-4.061***	0.378***	-1.018	-3.732***	0.475***	-1.069	-4.725***
	(2.680)	(-2.966)	(-6.422)	(2.613)	(-1.430)	(-5.467)	(2.955)	(-1.345)	(-5.821)
Observations	1,913	1,913	1,913	1,771	1,771	1,771	1,611	1,611	1,611
F-statistic	14.30	73.43	269.9	13.87	93.19	225	11.52	62.45	232.4
r2_a	0.363	0.0635	0.275	0.177	0.0693	0.222	0.209	0.0447	0.248

Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. *Appoint* is a dummy variable that equals one if a director is appointed during the year. *Departed* is a dummy variable that equals one if a director departs during the year. *Boards at t=0* is the number of directorships held by a director at t=0. *AgeYrs* is the age of a director in years. *Lawyer* is a dummy variable that equals one if a director is classified as a lawyer. *Accountant* is a dummy variable that equals one if a director is classified as an accountant. *CEO* is a dummy variable that equals one if a director is also a CEO of another company. *Prior Exp* is the number of board positions previously held by a director. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *LnAssets* is the natural logarithm of total assets. *AvgROA* is the average of ROA over a three-year period.

APPENDIX 8

OLS and Logit regressions for the change in directorships of directors from fraudulent firms only

VARIABLES	OLS Year -1 (1)	Logit I Year -1 (2)	Logit D Year -1 (3)	OLS Year +1 (4)	Logit I Year +1 (5)	Logit D Year +1 (6)	OLS Year +2 (7)	Logit I Year +2 (8)	Logit D Year +2 (9)
Departed	-0.149*	0.016	0.479*	-0.091	-0.286	0.133	0.040	0.156	-0.173
	(-1.792)	(0.061)	(1.842)	(-1.084)	(-0.954)	(0.552)	(0.720)	(0.551)	(-0.789)
Boards at t=0	-0.499***	-0.394***	0.997***	-0.264***	-0.123	0.887***	-0.282***	-0.246***	1.038***
	(-6.131)	(-4.033)	(8.526)	(-7.569)	(-1.275)	(7.940)	(-8.043)	(-2.601)	(9.340)
AgeYrs	-0.010***	-0.039***	0.017**	-0.010***	-0.048***	0.025***	-0.010***	-0.042***	0.036***
	(-4.931)	(-5.309)	(2.082)	(-4.765)	(-6.196)	(2.953)	(-5.094)	(-5.139)	(4.097)
Lawyer	0.106*	0.370**	-0.210	0.149**	0.445**	-0.590**	0.135***	0.045	-0.856***
	(1.669)	(2.078)	(-0.906)	(2.467)	(2.297)	(-2.362)	(2.782)	(0.191)	(-2.938)
Lawyer*Appointed	-0.080	0.454	0.447	-0.106	-1.033	0.000	0.013	0.338	0.739
	(-0.495)	(0.755)	(0.741)	(-0.766)	(-1.309)	(0.000)	(0.084)	(0.628)	(1.305)
Accountant	0.225***	0.651***	-0.375*	0.149***	0.721***	-0.203	0.093**	0.254	-0.301
	(4.109)	(3.737)	(-1.932)	(3.267)	(4.266)	(-1.026)	(2.227)	(1.289)	(-1.555)
Accountant*Appointed	0.042	0.423	0.594	**0.183***	**0.666****	-0.632	0.134	0.644	0.206
	(0.290)	(1.148)	(1.553)	**(1.653)**	**(1.980)**	(-1.273)	(1.043)	(1.400)	(0.399)
CEO	0.146	0.476	0.133	-0.038	-0.347	0.329	-0.099	-0.495	0.690**
	(1.560)	(1.637)	(0.492)	(-0.432)	(-0.866)	(1.097)	(-1.287)	(-1.133)	(2.458)
Prior Exp	0.099***	0.264***	0.036	0.030*	0.157***	-0.011	0.022	0.172***	-0.030
	(2.797)	(5.145)	(0.697)	(1.892)	(3.129)	(-0.240)	(1.424)	(4.149)	(-0.729)
Board Size	0.008	-0.000	-0.026	-0.011	-0.068	0.038	-0.017	-0.056	0.055
	(0.769)	(-0.009)	(-0.779)	(-1.252)	(-1.229)	(1.055)	(-1.468)	(-1.027)	(1.140)
Indprcnt	-0.123	0.610	0.999**	0.134	0.432	-0.184	0.033	0.307	0.642
	(-0.906)	(1.180)	(2.300)	(1.254)	(0.570)	(-0.388)	(0.226)	(0.369)	(0.873)
LnAssets	0.022	0.064	0.002	0.021	0.139*	-0.038	0.024*	0.139**	-0.077
	(1.491)	(1.226)	(0.044)	(1.486)	(1.919)	(-0.674)	(1.704)	(2.170)	(-1.238)
AvgROA	-0.284**	-0.953**	-0.044	-0.280***	-0.935**	0.765*	-0.059	-0.207	0.446
	(-2.155)	(-2.267)	(-0.094)	(-2.758)	(-2.308)	(1.781)	(-0.477)	(-0.371)	(0.999)
Constant	0.459***	-1.386***	-4.140***	0.423***	-0.750	-3.809***	0.522***	-0.971	-4.942***
	(2.871)	(-2.774)	(-6.584)	(2.934)	(-1.106)	(-5.575)	(3.275)	(-1.212)	(-6.036)
Observations	1,913	1,913	1,913	1,771	1,771	1,771	1,611	1,611	1,611
F-statistic	13.20	74.23	280.4	12.90	96.43	228.2	10.73	62.88	263.4
r2_a	0.362	0.0619	0.277	0.177	0.0709	0.223	0.207	0.0452	0.249

Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. *Appoint* is a dummy variable that equals one if a director is appointed during the year. *Departed* is a dummy variable that equals one if a director departs during the year. *Boards at t=0* is the number of directorships held by a director at t=0. *AgeYrs* is the age of a director in years. *Accountant* is a dummy variable that equals one if a director is classified as an accountant. *CEO* is a dummy variable that equals one if a director is also CEO of another company. *Prior Exp* is the number of board positions previously held by a director. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *LnAssets* is the natural logarithm of total assets. *AvgROA* is the average of ROA over a three-year period.

APPENDIX 9

OLS and Logit regressions for the change in directorships for only appointed directors from fraudulent and control firms

VARIABLES	OLS Year -1 (1)	Logit I Year -1 (2)	Logit D Year -1 (3)	OLS Year +1 (4)	Logit I Year +1 (5)	Logit D Year +1 (6)	OLS Year +2 (7)	Logit I Year +2 (8)	Logit D Year +2 (9)
Fraud	0.004	-0.120	0.136	**0.140***	0.446	-0.508	0.004	-0.093	0.032
	(0.048)	(-0.382)	(0.366)	**(1.747)**	(1.367)	(-1.463)	(0.055)	(-0.304)	(0.091)
Boards at t=0	-0.424***	-0.748***	1.382***	-0.309***	-0.361	1.301***	-0.353***	-0.659***	1.429***
	(-5.704)	(-3.012)	(5.993)	(-3.044)	(-1.188)	(3.181)	(-6.018)	(-2.826)	(4.832)
AgeYrs	-0.006	0.004	0.021	-0.003	-0.000	0.012	0.002	-0.008	-0.040
	(-1.300)	(0.221)	(0.979)	(-0.634)	(-0.017)	(0.510)	(0.492)	(-0.435)	(-1.585)
Lawyer	0.006	0.320	-0.239	-0.032	-0.765	-0.355	0.057	0.161	0.103
	(0.052)	(0.773)	(-0.461)	(-0.369)	(-1.383)	(-0.749)	(0.479)	(0.360)	(0.215)
Accountant	0.177*	0.661**	-0.230	0.197**	0.634**	-0.768*	0.017	0.361	0.512
	(1.668)	(2.002)	(-0.604)	(2.380)	(2.105)	(-1.843)	(0.182)	(0.985)	(1.216)
CEO	0.066	0.437	-0.331	-0.057	-1.072	-0.210	-0.020	-0.236	0.276
	(0.344)	(0.686)	(-0.466)	(-0.508)	(-1.429)	(-0.394)	(-0.156)	(-0.343)	(0.540)
Prior Exp	0.088**	0.315***	-0.120	0.041	0.161	-0.168	0.030	0.176*	-0.126
	(2.035)	(2.618)	(-0.905)	(0.837)	(1.195)	(-0.976)	(1.005)	(1.705)	(-1.197)
Board Size	0.033	0.012	-0.303***	-0.008	-0.132*	-0.037	-0.017	-0.006	0.128*
	(1.384)	(0.127)	(-2.790)	(-0.511)	(-1.856)	(-0.560)	(-1.043)	(-0.086)	(1.733)
Indprcnt	0.383	1.763*	1.880	0.543**	2.222	-1.509	0.091	0.842	1.366
	(1.443)	(1.827)	(1.502)	(2.070)	(1.636)	(-1.412)	(0.373)	(0.529)	(0.813)
LnAssets	0.006	0.055	0.084	-0.012	0.155	0.215*	0.022	0.083	-0.041
	(0.179)	(0.487)	(0.629)	(-0.460)	(1.611)	(1.793)	(0.864)	(0.824)	(-0.347)
AvgROA	-0.297	-1.187	-0.087	-0.341	-0.787	2.765	0.245	0.253	-0.905
	(-1.171)	(-1.210)	(-0.089)	(-1.340)	(-0.850)	(1.329)	(0.801)	(0.262)	(-1.006)
Constant	-0.173	-3.938***	-3.311*	-0.088	-3.853**	-2.915	0.002	-2.573	-2.961
	(-0.565)	(-3.190)	(-1.945)	(-0.252)	(-2.335)	(-1.532)	(0.006)	(-1.555)	(-1.543)
Observations	346	346	346	382	382	382	379	379	379
F-statistic	5.535	22.13	79.46	5.678	19.14	46.61	5.383	12.68	68.72
r2_a	0.183	0.0658	0.294	0.213	0.0726	0.324	0.191	0.0387	0.304

Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. *Appoint* is a dummy variable that equals one if a director is appointed during the year. *Boards at t=0* is the number of directorships held by a director at t=0. *AgeYrs* is the age of a director in years. *Lawyer* is a dummy variable that equals one if a director is classified as a lawyer. *Accountant* is a dummy variable that equals one if a director is classified as an accountant. *CEO* is a dummy variable that equals one if a director is also CEO of another company. *Prior Exp* is the number of board positions previously held by a director. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *LnAssets* is the natural logarithm of total assets. *AvgROA* is the average of ROA over a three-year period.

APPENDIX 10

OLS and Logit regressions for the change in directorships for only appointed directors from fraudulent and control firms

VARIABLES	OLS Year -1 (1)	Logit I Year -1 (2)	Logit D Year -1 (3)	OLS Year +1 (4)	Logit I Year +1 (5)	Logit D Year +1 (6)	OLS Year +2 (7)	Logit I Year +2 (8)	Logit D Year +2 (9)
Boards at t=0	-0.427***	-0.753***	1.457***	-0.311***	-0.385	1.310***	-0.356***	-0.663***	1.429***
	(-5.747)	(-3.072)	(6.308)	(-3.009)	(-1.234)	(3.037)	(-6.057)	(-2.849)	(4.841)
AgeYrs	-0.006	0.003	0.021	-0.003	-0.002	0.013	0.002	-0.008	-0.039
	(-1.299)	(0.202)	(0.962)	(-0.690)	(-0.106)	(0.534)	(0.476)	(-0.439)	(-1.581)
Lawyer	0.105	0.359	-1.155	-0.081	-0.644	0.007	0.024	0.164	-0.103
	(0.672)	(0.653)	(-1.510)	(-0.697)	(-0.848)	(0.014)	(0.180)	(0.197)	(-0.130)
Fraud*Lawyer	-0.165	-0.082	1.452	0.099	-0.199	-1.022	0.047	-0.007	0.287
	(-0.782)	(-0.109)	(1.569)	(0.588)	(-0.188)	(-0.773)	(0.240)	(-0.007)	(0.314)
Accountant	0.219	0.645	-1.387	0.071	0.190	-0.363	-0.115	-0.096	0.629
	(1.568)	(1.424)	(-1.450)	(0.709)	(0.398)	(-0.703)	(-0.988)	(-0.184)	(1.279)
Fraud*Accountant	-0.065	0.017	1.585	**0.233***	0.729	-0.814	0.252	0.817	-0.223
	(-0.335)	(0.032)	(1.565)	**(1.730)**	(1.397)	(-1.086)	(1.526)	(1.296)	(-0.322)
CEO	0.070	0.433	-0.423	-0.060	-1.055	-0.195	-0.008	-0.188	0.266
	(0.365)	(0.676)	(-0.621)	(-0.545)	(-1.430)	(-0.374)	(-0.064)	(-0.275)	(0.513)
Prior Exp	0.091**	0.315***	-0.167	0.043	0.169	-0.168	0.029	0.170	-0.127
	(2.109)	(2.641)	(-1.290)	(0.861)	(1.261)	(-0.945)	(0.981)	(1.638)	(-1.200)
Board Size	0.033	0.012	-0.324***	-0.008	-0.125*	-0.037	-0.013	0.019	0.121
	(1.410)	(0.132)	(-3.218)	(-0.520)	(-1.779)	(-0.555)	(-0.788)	(0.273)	(1.535)
Indprcnt	0.358	1.834*	2.373*	0.527**	2.157	-1.448	0.107	0.872	1.316
	(1.336)	(1.865)	(1.814)	(2.063)	(1.600)	(-1.319)	(0.439)	(0.549)	(0.784)
LnAssets	0.005	0.056	0.137	-0.014	0.142	0.221*	0.017	0.052	-0.034
	(0.152)	(0.481)	(1.011)	(-0.501)	(1.474)	(1.840)	(0.678)	(0.519)	(-0.290)
AvgROA	-0.303	-1.109	-0.218	-0.380	-0.908	3.103	0.255	0.323	-0.929
	(-1.242)	(-1.149)	(-0.210)	(-1.591)	(-1.021)	(1.419)	(0.817)	(0.329)	(-1.060)
Constant	-0.162	-4.036***	-3.680**	0.016	-3.435**	-3.294*	-0.004	-2.628	-2.905
	(-0.526)	(-3.279)	(-2.095)	(0.046)	(-2.128)	(-1.697)	(-0.012)	(-1.587)	(-1.479)
Observations	346	346	346	382	382	382	379	379	379
F-statistic	5.116	21.94	83.66	5.567	19.39	49.52	4.964	14.92	70.55
r2_a	0.182	0.0653	0.313	0.210	0.0727	0.325	0.195	0.0441	0.305

Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. *Appoint* is a dummy variable that equals one if a director is appointed during the year. *Boards at t=0* is the number of directorships held by a director at t=0. *AgeYrs* is the age of a director in years. *Lawyer* is a dummy variable that equals one if a director is classified as a lawyer. *Accountant* is a dummy variable that equals one if a director is classified as an accountant. *CEO* is a dummy variable that equals one if a director is also CEO of another company. *Prior Exp* is the number of board position previously held by a director. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. *LnAssets* is the natural logarithm of total assets. *AvgROA* is the average of ROA over a three-year period.

APPENDIX 11

OLS regressions for the logged compensation of outside directors				
Variable	Compensation year -1	Compensation year 0	Compensation year +1	Compensation year +2
	(1)	(2)	(3)	(4)
Fraud	0.060	-0.009	0.144**	0.219***
	(0.636)	(-0.096)	(2.284)	(3.403)
Departed	-0.353**	-1.052***	-1.016***	-0.959***
	(-1.988)	(-7.400)	(-9.444)	(-9.136)
Appointed	-0.921***	-0.706***	-0.751***	-0.659***
	(-5.249)	(-6.127)	(-6.617)	(-4.854)
LnAssets	0.186***	0.250***	0.189***	0.180***
	(5.437)	(8.664)	(7.546)	(5.106)
MTB	0.068*	0.134***	0.142***	0.088***
	(1.863)	(4.621)	(4.776)	(3.390)
R&Dexp	1.506**	1.064**	0.637	0.725*
	(2.326)	(2.024)	(1.561)	(1.858)
Capex	2.320**	1.217	1.727***	2.659***
	(2.035)	(1.278)	(3.091)	(3.936)
ROA	0.306	-0.036	-0.065	0.216
	(0.846)	(-0.137)	(-0.393)	(1.270)
Leverage	0.502*	-0.074	-0.182	0.110
	(1.729)	(-0.424)	(-1.222)	(0.918)
Board Size	-0.032	-0.068**	-0.026	-0.038*
	(-1.058)	(-2.441)	(-1.113)	(-1.726)
IndPrcnt	1.086***	1.112***	1.568***	1.520***
	(2.695)	(3.521)	(3.479)	(4.735)
Constant	2.456***	2.476***	2.140***	2.237***
	(7.518)	(10.762)	(6.210)	(9.216)
Directors	1,217	1,693	2,274	3,006
F-Stat	10.17	21.64	25.39	38.56
Adj R^2	0.222	0.305	0.286	0.247

This table presents OLS regressions for the compensation of outside directors. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. Dependent variable is *Total Compensation*, which is logged sum of cash, stock and stock awards obtained by a director during the year. *Fraud* is a dummy variable that equals one if a director is from a fraudulent firm. *Departed* is a dummy variable that equals one if a director departs during the year. *Appointed* is a dummy variable that equals one if a director is appointed during the year. *LnAssets* is a natural logarithm of total assets. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *R&Dexp* is the ratio of research and development expenses to total assets. *Capex* is capital expenditures divided by sales. *ROA* is net income less extraordinary items divided by total assets. *Leverage is* the ratio of long-term and short-term debt over total asset. *Board Size* number of directors and executives on the board. *Indprcnt* number of outside directors divided by the total number of directors and executives on the board. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

APPENDIX 12

OLS regressions for the different components of logged compensation of outside directors

Variable		Cash t=-1	Cash t=0	Cash t=1	Cash t=2	Opt t=-1	Opt t=0	Opt t=+1	Opt t=+2	Stock t=-1	Stock t=0	Stock t=0	Stock t=+1
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Fraud	+	0.011	0.076	**0.213*****	**0.267*****	**0.478***	0.351	**0.519****	0.199	-0.177	-0.129	0.018	**0.391****
		(0.105)	(0.838)	**(2.725)**	**(3.777)**	**(1.676)**	(1.356)	**(2.409)**	(1.085)	(-0.592)	(-0.501)	(0.080)	**(2.180)**
Departed	+	-0.388**	-0.980***	-0.920***	-0.874***	-0.548	-0.826***	-0.828***	-0.651***	0.041	-1.083***	-0.923***	-1.254***
		(-2.464)	(-6.536)	(-10.432)	(-7.862)	(-1.139)	(-3.506)	(-3.831)	(-3.885)	(0.088)	(-5.292)	(-3.757)	(-6.141)
Appointed	?	-1.037***	-0.749***	-0.877***	-0.702***	-0.389	-0.120	-0.333**	-0.351**	-0.891***	-0.697***	-0.428**	-0.397**
		(-7.402)	(-6.852)	(-8.144)	(-6.191)	(-1.651)	(-0.577)	(-1.983)	(-2.345)	(-4.280)	(-3.083)	(-2.474)	(-2.535)
LnAssets	?	0.234***	0.226***	0.179***	0.149***	0.088	0.211**	0.081	0.005	0.248**	0.241**	0.203**	0.240***
		(5.934)	(7.540)	(5.939)	(4.573)	(0.726)	(2.234)	(0.941)	(0.077)	(2.142)	(2.551)	(2.295)	(3.445)
MTB	?	0.020	0.048	-0.015	-0.011	0.229***	0.322***	0.391***	0.151*	-0.049	0.045	-0.036	0.044
		(0.661)	(1.338)	(-0.332)	(-0.353)	(2.722)	(4.244)	(3.856)	(1.815)	(-0.487)	(0.554)	(-0.321)	(0.520)
R&Dexp	?	0.313	-0.667	-0.248	0.360	3.679*	6.459***	4.873***	4.949***	-0.417	-3.545***	-1.638	-2.426**
		(0.477)	(-1.273)	(-0.575)	(1.087)	(1.796)	(4.826)	(4.585)	(4.911)	(-0.219)	(-2.723)	(-1.205)	(-2.462)
Capex	?	1.272	0.952	0.707	1.832*	-0.339	-0.285	0.985	0.541	7.117**	4.651*	2.858	4.518*
		(1.206)	(1.101)	(0.778)	(1.836)	(-0.111)	(-0.111)	(0.394)	(0.225)	(2.046)	(1.733)	(1.119)	(1.962)
ROA	?	-0.494	-0.243	-0.188	0.199	1.091	1.006	0.399	1.440***	-0.341	-0.935	-0.139	-0.406
		(-1.521)	(-0.922)	(-0.730)	(1.065)	(0.944)	(1.336)	(0.722)	(2.625)	(-0.388)	(-1.376)	(-0.238)	(-0.796)
Leverage	?	-0.224	-0.305	-0.387	0.086	0.783	-0.028	-0.056	-0.031	1.719**	0.359	0.304	0.099
		(-0.697)	(-1.127)	(-1.219)	(0.358)	(1.042)	(-0.064)	(-0.132)	(-0.082)	(2.075)	(0.613)	(0.660)	(0.247)
Board Size	?	-0.058	-0.106***	-0.067*	-0.035	-0.143**	-0.174***	-0.142**	-0.144***	0.019	0.071	0.071	0.063
		(-1.280)	(-2.649)	(-1.922)	(-1.350)	(-2.144)	(-2.804)	(-2.469)	(-3.394)	(0.180)	(0.976)	(1.166)	(1.074)
IndPrcnt	?	1.220*	1.253***	1.354***	1.269***	0.839	-0.267	0.493	0.261	2.150*	3.024***	2.942***	3.963***
		(1.955)	(2.813)	(2.880)	(3.219)	(0.765)	(-0.285)	(0.589)	(0.375)	(1.681)	(3.204)	(3.257)	(4.902)
Constant	?	1.717***	2.239***	2.222***	1.985***	1.110	1.316*	1.050	2.263***	-1.611*	-2.342***	-1.868**	-3.134***
		(5.384)	(8.750)	(6.834)	(6.797)	(1.186)	(1.768)	(1.411)	(3.477)	(-1.738)	(-3.358)	(-2.408)	(-4.779)
Directors		1,217	1,694	2,274	3,008	1,218	1,692	2,274	3,008	1,208	1,689	2,274	3,008
F-Stat		13.53	18.48	29.24	19.76	4.320	8.939	10.48	10.62	8.822	11.50	6.294	15.99
Adj R^2		0.225	0.214	0.194	0.169	0.149	0.184	0.167	0.136	0.169	0.199	0.134	0.219

This table presents OLS regressions for the compensation of outside directors. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. In columns (1) through (4) the dependent variable is *Cash,* which is the total amount of cash received by a director during the year. In columns (5) through (8) the dependent variable is *Options,* which equals to the dollar amount of options received by a director during the year. In columns (9) through (12) the dependent variable is *Stock,* which equals to the dollar amount of stock received by a director during the year. *Fraud* is a dummy variable that equals one if a director is from a fraudulent firm. *Departed* is a dummy variable that equals one if a director departs during the year. *Appointed* is a dummy variable that equals one if a director is appointed during the year. *LnAssets* is the natural logarithm of total assets. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *R&Dexp* is the ratio of research and development expenses to total assets. *Capex* is capital expenditures divided by sales. *ROA* is net income less extraordinary items divided by total assets. *Leverage* is the ratio of long-term and short-term debt over total assets. *Board Size* is the number of directors on the board. *Indprcnt* is the number of independent directors divided by the total number of directors on the board. Superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

APPENDIX 13

OLS regressions for the compensation of outside directors, including other compensation				
Variable	Compensation year -1	Compensation year 0	Compensation year +1	Compensation year +2
	(1)	(2)	(3)	(4)
Fraud	29.056	-15.057	21.498**	32.590***
	(0.798)	(-0.866)	(2.351)	(3.895)
Departed	-81.774***	-81.807***	-78.041***	-84.266***
	(-2.762)	(-4.096)	(-5.190)	(-6.130)
Appointed	-92.558***	-55.459***	-54.385***	-44.585***
	(-2.947)	(-4.147)	(-5.597)	(-4.943)
LnAssets	23.896***	38.015***	28.161***	26.720***
	(3.144)	(7.129)	(8.535)	(7.650)
MTB	53.273	13.246**	23.781***	9.370***
	(1.618)	(2.343)	(5.157)	(2.714)
R&Dexp	-291.375	158.513	79.107	136.845***
	(-0.667)	(1.320)	(1.349)	(3.103)
Capex	191.563	479.495	322.298**	249.913***
	(0.686)	(1.497)	(2.552)	(2.625)
ROA	28.159	-40.801	-20.911	35.357*
	(0.270)	(-0.639)	(-0.808)	(1.654)
Leverage	169.428	-17.125	-26.467	2.237
	(1.649)	(-0.569)	(-1.642)	(0.160)
Board Size	-13.751**	-14.767***	-5.742**	-7.037***
	(-2.213)	(-3.521)	(-2.022)	(-2.948)
IndPrcnt	137.065	92.177	126.543***	117.372***
	(0.928)	(1.623)	(3.507)	(3.359)
Constant	-116.772	-79.410**	-144.779***	-107.509***
	(-1.051)	(-2.256)	(-4.937)	(-3.871)
Directors	1,217	1,693	2,274	3,006
F-Stat	3.887	12.12	23.96	23.03
Adj R^2	0.0724	0.155	0.215	0.241

This table presents OLS regressions for the compensation of outside directors. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. The dependent variable is *Total Compensation*, which is the sum of cash, stock and stock awards obtained by a director during the year. *Fraud* is a dummy variable that equals one if a director is from a fraudulent firm. *Departed* is a dummy variable that equals one if a director departs during the year. *Appointed* is a dummy variable that equals one if a director is appointed during the year. *LnAssets* is the natural logarithm of total assets. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *R&Dexp* is the ratio of research and development expenses to total assets. *Capex* is capital expenditures divided by sales. *ROA* is net income less extraordinary items divided by total assets. *Leverage is* the ratio of long-term and short-term debt over total asset. *Board Size* is the number of directors and executives on the board. *Indprcnt* is the number of independent directors divided by the total number of directors and executives on the board. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

APPENDIX 14

OLS regressions for the different components of compensation of appointed outside directors

Variable		Cash t=0	Cash t=1	Cash t=2	Opt t=0	Opt t=+1	Opt t=+2	Stock t=0	Stock t=0	Stock t=+1
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Fraud	+	11.711	27.426***	21.969***	2.024	-4.907	-0.704	-6.075	-4.052	-5.707
		(1.635)	(4.391)	(3.336)	(0.148)	(-0.376)	(-0.098)	(-0.457)	(-0.342)	(-0.431)
Departed	+	-37.870***	-47.695***	-34.539***	-9.842	-46.573***	-17.974*	-29.789	-40.405***	-20.772
		(-3.506)	(-7.385)	(-4.520)	(-0.421)	(-3.683)	(-1.673)	(-0.975)	(-2.799)	(-1.445)
LnAssets	?	9.717***	10.366***	10.774***	7.976	9.377**	9.935***	15.601**	3.207	0.885
		(2.976)	(5.427)	(4.214)	(1.109)	(2.248)	(3.712)	(2.527)	(0.752)	(0.398)
MTB	?	6.594	-2.171	1.878	-0.936	2.987	2.857	23.191***	20.479**	5.584
		(1.319)	(-0.855)	(1.033)	(-0.253)	(0.558)	(1.113)	(4.293)	(2.353)	(1.413)
R&Dexp	?	-94.940	45.110	-29.001	40.707	-74.491	-3.484	176.389	137.523	106.947*
		(-1.109)	(1.381)	(-0.895)	(0.353)	(-1.459)	(-0.083)	(1.233)	(1.368)	(1.908)
Capex	?	-51.320	-27.820	161.307	47.144	176.244	170.910	-146.840	34.578	-132.899
		(-0.532)	(-0.614)	(1.243)	(0.333)	(1.581)	(1.261)	(-1.321)	(0.392)	(-1.492)
ROA	?	13.658	35.885*	-30.248	17.281	8.229	8.311	40.498	-91.322	49.780*
		(0.377)	(1.802)	(-1.601)	(0.497)	(0.323)	(0.549)	(0.953)	(-1.403)	(1.959)
Leverage	?	10.284	8.030	31.602**	21.133	-36.717*	-8.532	-16.982	18.285	-16.387
		(0.447)	(0.512)	(2.276)	(0.873)	(-1.661)	(-0.795)	(-0.778)	(0.647)	(-0.978)
Board Size	?	-6.087**	-0.107	0.529	2.679	0.779	-1.381	-8.004**	-1.563	-1.943
		(-1.989)	(-0.043)	(0.367)	(0.479)	(0.252)	(-0.748)	(-2.131)	(-0.445)	(-1.076)
IndPrcnt	?	84.580**	-25.510	-5.753	23.654	52.023	102.968***	-45.913	-6.715	-105.563
		(2.180)	(-0.939)	(-0.184)	(0.369)	(1.231)	(3.281)	(-0.759)	(-0.146)	(-1.208)
Constant	?	-37.517	-0.061	-36.444	-57.199	-58.525	-96.684***	-8.495	-3.327	127.005
		(-1.580)	(-0.003)	(-1.170)	(-1.414)	(-1.429)	(-3.071)	(-0.222)	(-0.066)	(1.652)
Directors		132	218	283	132	218	283	132	218	283
F-Stat		6.621***	14.58***	8.457***	2.398**	4.982***	6.552***	4.554***	3.424***	1.745*
Adj R^2		0.237	0.215	0.253	0.0320	0.142	0.162	0.163	0.189	0.0502

This table presents OLS regressions for the compensation of outside directors. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. In columns (1) through (4) the dependent variable is *Cash,* which is the total amount of cash received by a director during the year. In columns (5) through (8) the dependent variable is *Options,* which equals to the dollar amount of options received by a director during the year. In columns (9) through (12) the dependent variable is *Stock,* which equals to the dollar amount of stock received by a director during the year. *Fraud* is a dummy variable that equals one if a director is from a fraudulent firm. *Departed* is a dummy variable that equals one if a director departs during the year. *Appointed* is a dummy variable that equals one if a director is appointed during the year. *LnAssets* is the natural logarithm of total assets. *MTB* is the sum of total assets and market value of equity less the book value of equity, divided by total assets. *R&Dexp* is the ratio of research and development expenses to total assets. *Capex* is capital expenditures divided by sales. *ROA* is net income less extraordinary items divided by total assets. *Leverage is* the ratio of long-term and short-term debt over total asset. *Board Size* number of directors on the board. *Indprcnt* is the number of independent directors divided by total number of directors on the board. Superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.

APPENDIX 15

Removed the following simultaneous announcements: **DEF14A, Analyst Forecasts, Financial Results and Major Strategic decisions.**

Univariate analysis of means and median of CARs around the director appointment announcement			
	Fraud Appointment	Control Firm Appointment	P-Value (mean) Z-Value(median)
All appointments	286	239	
Mean CAR (-1,1)/ P-value	0.57% (**0.064***)	0.22% (0.270)	0.362
Year -1 Appointment	76	78	
Mean CAR (-1,1)/ P-value	1.29% (**0.001*****)	0.35% (0.317)	**0.066***
Year +1 Appointment	97	85	
Mean CAR (-1,1)/ P-value	-1.04% (**0.055***)	0.30% (0.372)	**0.041****
Year +2 Appointment	113	76	
Mean CAR (-1,1)/ P-value	1.48% (**0.009*****)	0.00% (0.999)	**0.048****

The table compares means and medians of CARs (-1, +1) around the director appointment announcement for fraudulent firms and control sample of firms. *t*-statistics are used for the mean comparison and the Wilcoxon rank sum tests are used for the median difference. The superscripts ***, **, and * denote significance at 1%, 5%, and 10% confidence levels.

Removed the following simultaneous announcements: DEF14A, Analyst Forecasts, Financial Results, Major Strategic decisions, **Appointment and Resignation of Executives.**

Univariate analysis of means and median of CARs around the director appointment announcement			
	Fraud Appointment	Control Firm Appointment	P-Value (mean) Z-Value(median)
All appointments	253	225	
Mean CAR (-1,1)/ P-value	0.69% (**0.041****)	0.32% (0.106)	0.911
Year -1 Appointment	68	73	
Mean CAR (-1,1)/ P-value	1.33% (**0.001*****)	0.50% (0.131)	0.102
Year +1 Appointment	84	79	
Mean CAR (-1,1)/ P-value	-1.08% (**0.078***)	0.39% (0.242)	**0.037****
Year +2 Appointment	101	73	
Mean CAR (-1,1)/ P-value	1.73% (**0.005*****)	0.06% (0.859)	**0.033****

The table compares means and medians of CARs (-1, +1) around the director appointment announcement for fraudulent firms and control sample of firms. *t*-statistics are used for the mean comparison and the Wilcoxon rank sum tests are used for the median difference. The superscripts ***, **, and * denote significance at 1%, 5%, and 10% confidence levels.

Removed the following simultaneous announcements: DEF14A, Analyst Forecasts, Financial Results, Major Strategic decisions, Appointment and Resignation of Executives, Contracts, **Dividends.**

Univariate analysis of means and median of CARs around the director appointment announcement			
	Fraud Appointment	Control Firm Appointment	P-Value (mean) Z-Value(median)
All appointments	206	182	
Mean CAR (-1,1)/ P-value	0.41 (0.287)	0.34% (0.128)	0.871
Year -1 Appointment	58	61	
Mean CAR (-1,1)/ P-value	1.25 (**0.005*****)	0.56 (0.112)	0.210
Year +1 Appointment	67	67	
Mean CAR (-1,1)/ P-value	-1.98 (**0.003*****)	0.65 (**0.090***)	**0.001*****
Year +2 Appointment	81	54	
Mean CAR (-1,1)/ P-value	1.79 (**0.013****)	-0.31 (0.455)	**0.025****

The table compares means and medians of CARs (-1, +1) around the director appointment announcement for fraudulent firms and control sample of firms. *t*-statistics are used for the mean comparison and the Wilcoxon rank sum tests are used for the median difference. The superscripts ***, **, and * denote significance at 1%, 5%, and 10% confidence levels.

Removed the following simultaneous announcements: DEF14A, Analyst Forecasts, Financial Results, Major Strategic decisions, Appointment and Resignation of Executives, Contracts, Dividends, **Resignation of outside director.**

Univariate analysis of means and median of CARs around the director appointment announcement			
	Fraud Appointment	Control Firm Appointment	P-Value (mean) Z-Value(median)
All appointments	182	160	
Mean CAR (-1,1)/ P-value	0.56% (0.187)	0.44% (**0.068***)	0.809
Year -1 Appointment	51	57	
Mean CAR (-1,1)/ P-value	1.17 (**0.010*****)	0.60 (0.102)	0.317
Year +1 Appointment	54	59	
Mean CAR (-1,1)/ P-value	-1.90 (**0.016****)	0.87 (**0.033****)	**0.001*****
Year +2 Appointment	77	44	
Mean CAR (-1,1)/ P-value	1.89 (**0.013****)	-0.36 (0.467)	**0.034****

The table compares means and medians of CARs (-1, +1) around the director appointment announcement for fraudulent firms and control sample of firms. *t*-statistics are used for the mean comparison and the Wilcoxon rank sum tests are used for the median difference. The superscripts ***, **, and * denote significance at 1%, 5%, and 10% confidence levels.

APPENDIX 16

OLS regression of the CARs around the director appointment announcement					
Variable	Predicted	Three years	T-1	T+1	T+2
		(1)	(2)	(3)	(4)
Fraud	?	0.005	0.515	**-2.164****	**1.871****
		(0.010)	(0.918)	**(-2.489)**	**(2.013)**
Experience	+	-0.194	-0.176	-0.330	-0.418
		(-0.471)	(-0.330)	(-0.482)	(-0.460)
Lawyer	+	-0.980	-0.201	-0.379	-2.249
		(-1.352)	(-0.198)	(-0.404)	(-1.519)
Accountant	+	-0.447	0.0777	-0.310	-1.092
		(-0.966)	(0.139)	(-0.432)	(-1.256)
Ln(Asset)	?	-0.0680	0.0149	0.219	-0.228
		(-0.751)	(0.113)	(1.378)	(-1.565)
Tobin	?	-0.757	1.273	-1.484**	-0.392
		(-1.280)	(1.132)	(-2.160)	(-0.607)
ROA	?	-1.340	-2.740	0.896	-4.261**
		(-0.551)	(-1.439)	(0.225)	(-2.105)
Constant	?	2.240*	-1.251	1.057	2.719*
		(1.694)	(-0.522)	(0.657)	(1.697)
Directors		421	133	146	142
F-stat		0.689	0.977	1.619	3.518***
Adj R^2		-0.001	-0.011	0.085	0.060

This table presents OLS regressions (grouped by firm) of CARs around the appointment of outside directors on various firm-specific determinants. Standard errors are clustered by firm and adjusted for heteroskedasticity. All financial variables are winsorized at the 1% level. *Fraud* is an indicator variable and takes a value of one for directors who were appointed by fraudulent firms and zero for directors who were appointed by the control non-fraud firms. All other variables are defined in Table 1. The superscripts ***, **, and * indicate significance at the 1%, 5% and 10% confidence levels.