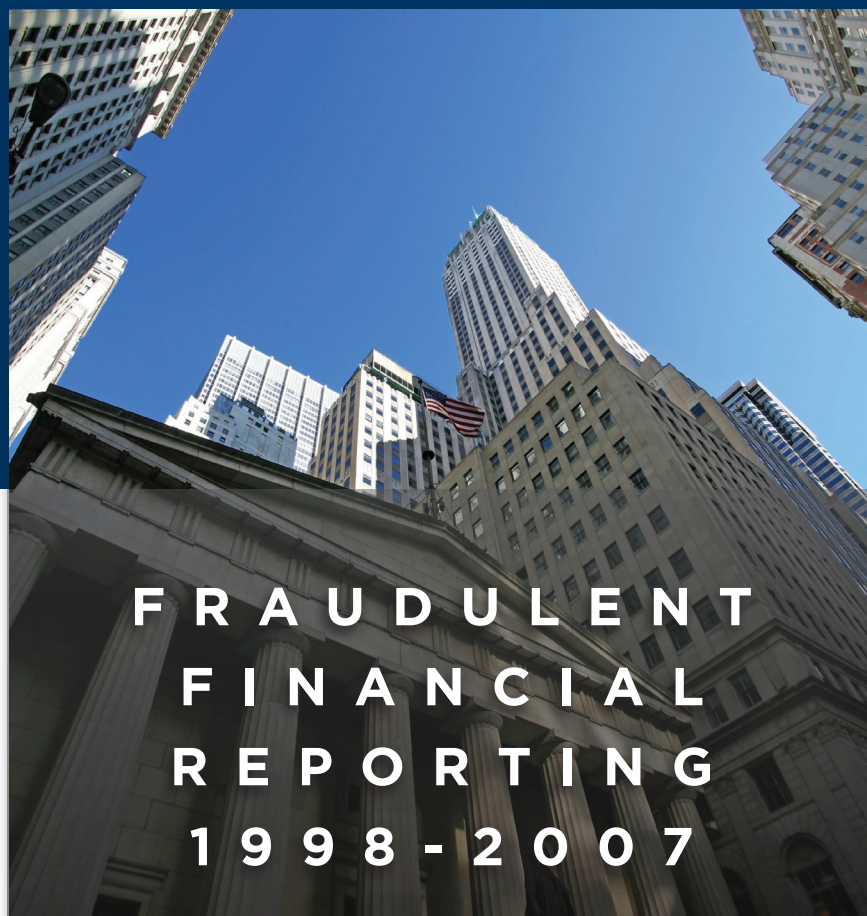




Committee of Sponsoring Organizations of the Treadway Commission



An Analysis of U.S. Public Companies

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Preface

This project was commissioned by COSO, which is dedicated to providing thought leadership through the development of comprehensive frameworks and guidance on enterprise risk management, internal control, and fraud deterrence designed to improve organizational performance and governance and to reduce the extent of fraud in organizations. COSO is a private sector initiative, jointly sponsored and funded by the following organizations:



American Accounting Association (AAA)



American Institute of Certified Public Accountants (AICPA)



Financial Executives International (FEI)



Institute of Management Accountants (IMA)

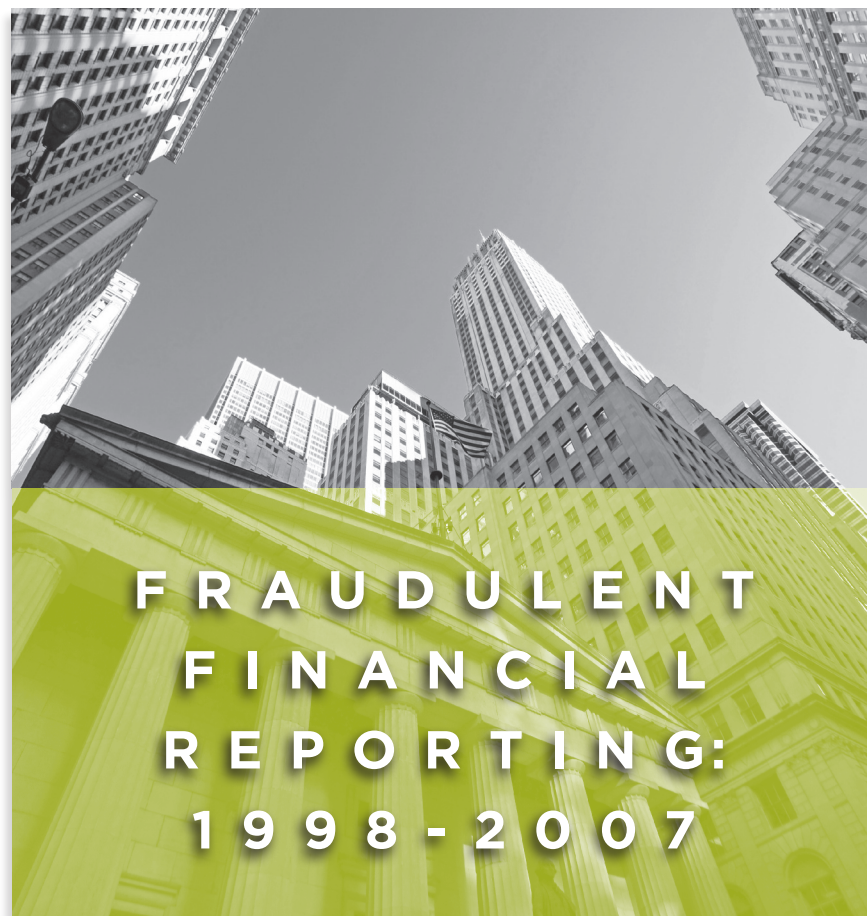


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An Analysis of U.S. Public Companies

Research Commissioned by



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Executive Summary

COSO sponsored this study, *Fraudulent Financial Reporting: 1998-2007*, to provide a comprehensive analysis of fraudulent financial reporting occurrences investigated by the U.S. Securities and Exchange Commission (SEC) between January 1998 and December 2007. This study updates our understanding of fraud since COSO's 1999 issuance of *Fraudulent Financial Reporting: 1987-1997*. Some of the more critical findings of the present study are:

- There were 347 alleged cases of public company fraudulent financial reporting from 1998 to 2007, versus 294 cases from 1987 to 1997. Consistent with the high-profile frauds at Enron, WorldCom, etc., the dollar magnitude of fraudulent financial reporting soared in the last decade, with total cumulative misstatement or misappropriation of nearly \$120 billion across 300 fraud cases with available information (mean of nearly \$400 million per case). This compares to a mean of \$25 million per sample fraud in COSO's 1999 study. While the largest frauds of the early 2000s skewed the 1998-2007 total and mean cumulative misstatement or misappropriation upward, the median fraud of \$12.05 million in the present study also was nearly three times larger than the median fraud of \$4.1 million in the 1999 COSO study.
- The companies allegedly engaging in financial statement fraud had median assets and revenues just under \$100 million. These companies were much larger than fraud companies in the 1999 COSO study, which had median assets and revenues under \$16 million.
- The SEC named the CEO and/or CFO for some level of involvement in 89 percent of the fraud cases, up from 83 percent of cases in 1987-1997. Within two years of the completion of the SEC's investigation, about 20 percent of CEOs/CFOs had been indicted and over 60 percent of those indicted were convicted.
- The most common fraud technique involved improper revenue recognition, followed by the overstatement of existing assets or capitalization of expenses. Revenue frauds accounted for over 60 percent of the cases, versus 50 percent in 1987-1997.
- Relatively few differences in board of director characteristics existed between firms engaging in fraud and similar firms not engaging in fraud. Also, in some instances, noted differences were in directions opposite of what might be expected. These results suggest the importance of research on governance processes and the interaction of various governance mechanisms.
- Twenty-six percent of the fraud firms changed auditors between the last clean financial statements and the last fraudulent financial statements, whereas only 12 percent of no-fraud firms switched auditors during that same time. Sixty percent of the fraud firms that changed auditors did so during the fraud period, while the remaining 40 percent changed in the fiscal period just before the fraud began.
- Initial news in the press of an alleged fraud resulted in an average 16.7 percent abnormal stock price decline in the two days surrounding the news announcement. In addition, news of an SEC or Department of Justice investigation resulted in an average 7.3 percent abnormal stock price decline.
- Long-term negative consequences of fraud were apparent. Companies engaged in fraud often experienced bankruptcy, delisting from a stock exchange, or material asset sales following discovery of fraud – at rates much higher than those experienced by no-fraud firms.

Given the small number of frauds examined in this study that involve time periods subsequent to the issuance of the Sarbanes-Oxley Act of 2002, further research will be needed once sufficient time has passed to allow for more observations of SEC fraud investigations involving post-SOX time periods before any conclusions can be reached about the effectiveness of that legislation in reducing instances of fraudulent financial reporting.

Our hope is that insights contained herein will encourage additional research to better understand organizational behaviors, leadership dynamics, and other important aspects of the financial reporting process that may have an impact on fraud prevention, deterrence, and detection.

We believe the results of this study will be useful to investors, regulators, stock exchanges, boards of directors, external auditors, and other key stakeholders as they seek to prevent, deter, and detect fraudulent financial reporting.

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■ Introduction, Key Findings, and Insights

Fraudulent financial reporting can have significant consequences for the organization and its stakeholders, as well as for public confidence in capital markets. Periodic high profile cases of fraudulent financial reporting raise concerns about the credibility of the U.S. financial reporting process and call into question the roles of management, auditors, regulators, and analysts, among others.

The Committee of Sponsoring Organizations of the Treadway Commission (COSO) sponsored this research project to provide an extensive updated analysis of financial statement fraud occurrences affecting U.S. public companies. In the mid-1980s, the National Commission on Fraudulent Financial Reporting, sponsored by COSO, identified numerous causal factors believed to contribute to financial statement fraud (NCFRR 1987).¹ In addition, the COSO-sponsored study released in 1999, *Fraudulent Financial Reporting: 1987-1997, An Analysis of U.S. Public Companies*, provided a comprehensive analysis of fraudulent financial reporting through the late 1990s (Beasley et al. 1999).

Less is known about the profile of fraudulent financial reporting since 1997.² While the U.S. experienced an unprecedented spate of large company accounting frauds in 2001 and 2002, including those at Enron and WorldCom, it is unclear to what extent the typical fraud profile has changed in the past decade. Thus, COSO commissioned this research project to provide COSO, and others, with recent information that can be used to guide future efforts to combat the problem of financial statement fraud and to provide a better understanding of financial statement fraud cases.

This research has three specific objectives:

- To identify instances of alleged fraudulent financial reporting by registrants of the U.S. Securities and Exchange Commission (SEC) disclosed by the SEC in an Accounting and Auditing Enforcement Release (AAER) issued during the period 1998-2007.
- To examine certain key company and management characteristics for the companies involved in instances of financial statement fraud identified in AAERs and to compare certain fraud company characteristics to those of no-fraud control firms.
- To provide insights related to preventing, deterring, and detecting fraudulent financial reporting.

This study builds on the previous COSO-sponsored study, *Fraudulent Financial Reporting: 1987-1997*. Where possible, we use or adapt language from the prior report, and we compare key findings from this study to our findings in the 1999 study to highlight notable differences.

We analyzed instances of fraudulent financial reporting alleged by the SEC in AAERs issued during the ten-year period between January 1998 and December 2007. The AAERs, which contain summaries of enforcement actions by the SEC against public companies, represent one of the most comprehensive sources of alleged cases of financial statement fraud in the U.S. We focused on AAERs that involved an alleged violation of Rule 10(b)-5 of the 1934 Securities Exchange Act or Section 17(a) of the 1933 Securities Act given that these represent the primary antifraud provisions related to financial reporting for U.S. public companies. Our focus was on cases clearly involving financial statement fraud. We excluded from our analysis restatements of financial statements due to errors or earnings management activities that did not result in a violation of the federal antifraud statutes.

Our search identified 347 companies involved in alleged instances of fraudulent financial reporting during the ten-year period. These 347 alleged fraud instances are described in 1,335 individual AAERs (1,013 AAERs directly relate to fraud, while the other 322 describe non-fraud allegations related to the fraud companies). Findings reported in this study are based on information we obtained from our detailed analysis of (a) AAERs related to each of the sample fraud companies, (b) databases containing selected financial statement data reported in Form 10-Ks filed before and during the period the alleged financial statement fraud occurred, (c) proxy statements issued during the alleged fraud period, and (d) databases containing business press articles about the sample companies after the fraud was disclosed, as well as about the no-fraud control firms.

¹ We use the terms “fraudulent financial reporting” and “financial statement fraud” interchangeably throughout this document to represent the intentional material misstatement of financial statements or financial disclosures (in notes to the financial statements or Securities and Exchange Commission (SEC) filings) or the perpetration of an illegal act that has a material direct effect on the financial statements or financial disclosures.

² Others have studied aspects of fraudulent financial reporting since COSO’s 1999 study was released. For example, see *Report Pursuant to Section 704 of the Sarbanes-Oxley Act* (SEC 2003), *Ten Things About Financial Statement Fraud – Second Edition* (Deloitte 2008a), *Ten Things About the Consequences of Financial Statement Fraud* (Deloitte 2008b), and *Ten Things About Financial Statement Fraud – Third Edition* (Deloitte 2009).

Key Findings and Insights

Several key findings and insights emerge from the detailed analysis of the 347 financial statement fraud cases. COSO hopes that close evaluation of these findings and insights will spawn ideas and further research that will help to strengthen the prevention, deterrence, and detection of fraudulent financial reporting.

Occurrences of Financial Statement Fraud

The vast majority of public companies appear to provide financial reports that are free from material misstatements due to fraud. However, financial statement fraud continued to exist during the 1998-2007 time frame, including the well-publicized frauds at Enron and WorldCom, among others. During the ten-year period 1998-2007, the SEC alleged fraud involving 347 companies as described in 1,335 AAERs. In comparison, the 1999 COSO study spanned 11 years of SEC fraud investigations in which nearly 300 frauds were described in nearly 700 AAERs. Despite thousands of publicly-traded companies filing apparently fairly stated financial statements over the ten-year period, the existence of fraud in any one of the 347 cases is significant to stakeholders of the affected entity. In addition, while the incidence of SEC fraud cases increased somewhat from 1987-1997 to 1998-2007, the magnitude of individual fraud cases increased markedly, as discussed below. Continued focus on finding ways to strengthen financial statement fraud prevention, deterrence, and detection is warranted.

Companies Involved

Fraud affects companies of all sizes. The companies committing fraud had median revenues and total assets just under \$100 million in the period prior to the fraud. While the size of companies in this study was much larger than in COSO's 1999 study, which had median total assets of approximately \$15 million, the range of assets or revenues for companies experiencing fraud was large. Fraud companies included startups with no assets or revenues, as well as companies with just under \$400 billion in assets or over \$100 billion in revenues. Thus, fraud is not limited to companies of a certain size.

Similarly, fraud occurred in a variety of industries. Consistent with COSO's 1999 study, the most frequent industries where fraud occurred included computer hardware and software (20 percent of the fraud companies) and other manufacturing (20 percent). These findings suggest that any actions to prevent, deter, or detect fraud should not be limited to any particular industry.

Most fraud companies' common stock (73 percent³ of the sample) traded in over-the-counter markets and was not listed on the New York or American Stock Exchanges, similar to the frauds examined in COSO's 1999 study. Further study about differences in exchange listing requirements may provide insights as to whether certain requirements for registrants of the larger exchanges are relevant to the over-the-counter markets.

Financial Health of Companies Involved

Some companies committing fraud were experiencing net losses or were in close to break-even positions in periods before the fraud. The lowest quartile reflected companies in a net loss position and suffering from net operating cash flow shortages. Median company net income was \$875,000, while median cash flow from operations was \$317,000. Such closeness to break-even positions is consistent with results in COSO's 1999 study. Thus, pressures of financial strain or distress may have provided incentives for fraudulent activities for some fraud companies. Enhanced skepticism when companies are experiencing financial stress may be warranted for key governance participants, including the board of directors, auditors, and regulators.

Management's Tone at the Top

We gathered information about the types of individuals named by the SEC in the AAERs. The SEC continues to name senior management in AAERs for some level of involvement in the fraud, with the CEO and/or CFO named in almost all cases. These findings have important implications for the control environment.

Executives Named

In 72 percent of the cases, the AAERs named the CEO, and in 65 percent the AAERs named the CFO as being associated with the fraud. When considered together, in 89 percent of the cases, the AAERs named the CEO and/or CFO as being associated with the financial statement fraud. In COSO's 1999 study, the CEO and/or CFO were named in 83 percent of the cases. In addition, although the incidence of enforcement actions against the CEO was the same in the current study as in the 1999 study (72 percent of cases in

each period), enforcement actions against the CFO were approximately 50 percent more likely in the current study (65 percent of cases, versus 43 percent in COSO's 1999 study).

More study is needed to determine if there are leading practices that help to reduce the risk of senior management involvement in financial statement fraud. For example, emerging practices may exist related to the screening and selection of senior executive officers, how they are compensated to avoid excessive fraud risks, and how boards and others oversee senior management. Mechanisms for sharing of those practices with wider audiences may need to be considered. In addition, CPA firms may want to focus additional effort on assessing the integrity of top management and sharing with the profession those approaches that prove effective.

Alleged Motivations

The SEC's most commonly cited motivations for fraud included the need to meet internal or external earnings expectations, an attempt to conceal the company's deteriorating financial condition, the need to increase the stock price, the need to bolster financial performance for pending equity or debt financing, or the desire to increase management compensation based on financial results.

Better understanding of the psyche of individuals who have engaged in fraud may provide insights as to factors that cause an individual to set aside his or her set of beliefs to engage in fraud. More can be learned about behavioral aspects that lead to attitudes and rationalizations that ultimately result in an individual or group of individuals deciding to engage in fraudulent financial reporting (see Ramamoorti 2008). Insights are needed as to factors that might lead an individual known to be of high integrity and to possess strong ethical values to subsequently justify committing a fraudulent act. Perhaps insights from prior research studies about leadership and other organizational behaviors in settings not involving fraud may have insights about possible motivators of fraudulent financial reporting. The academic community may be able to provide analyses or syntheses of findings and insights from prior organizational behavior research that would be helpful in identifying organizational behavior characteristics that may be associated with drivers of fraudulent financial reporting.

More guidance about how management's philosophy, integrity, and ethical culture interact with judgment and decision making is warranted. Insights about these interactions may serve to strengthen assessments of fraud risk conditions, especially

those related to the attitudes and rationalizations of senior management in high fraud risk environments.

Nature of the Frauds

We gathered extensive information from the AAERs about the nature of the frauds, including the amounts involved, the fraud periods, and techniques used.

Size and Time Period of the Frauds

For the period 1998-2007, the total cumulative misstatement or misappropriation was nearly \$120 billion across 300 fraud cases with available information (mean of nearly \$400 million per case). This compares to a mean of \$25 million of misstatement or misappropriation per sample fraud in COSO's 1999 study. While the largest frauds of the early 2000s skewed the 1998-2007 total and mean cumulative misstatement or misappropriation upward, the median fraud of \$12.05 million in the present study also was nearly three times larger than the median fraud of \$4.1 million in the 1999 COSO study. Thus, the magnitude of the fraud problem has increased in the past decade.

Most frauds were not isolated to a single fiscal period. The average fraud period extended 31.4 months, with the median fraud period extending 24 months. This was slightly longer than the average and median fraud periods of 23.7 and 21 months, respectively, reported in COSO's 1999 study. This finding suggests that once fraud is initiated in one financial period (quarterly or annual), management often continues to perpetrate fraud in each quarterly and annual financial statement filing for about two years.

Because there is a significant time lag between the occurrence of fraudulent financial reporting and the issuance of an AAER related to that fraud instance, most of the underlying instances of fraudulent financial reporting described in the AAERs examined in this study occurred before the passage of the Sarbanes-Oxley Act of 2002 (SOX). Only 61 of the 347 fraud companies examined in this study issued fraudulent financial statements involving periods subsequent to 2002, and only a small number of firms were subject to the provisions of Section 404 of SOX. Thus, future research is warranted to understand the impact of SOX on fraudulent financial reporting. It is premature to draw conclusions about the fraud detection impact of that legislation based on the frauds examined in this study. Furthermore, the approach used in this study does not allow us to provide any insights about the effect of SOX in preventing or deterring fraudulent financial reporting.

Fraud Techniques

The two most common techniques used to fraudulently misstate the financial statements involved improper revenue recognition and asset overstatements. The majority of frauds (61 percent) involved revenue recognition, while 51 percent involved overstated assets primarily by overvaluing existing assets or capitalizing expenses. The understatement of expenses and liabilities was much less frequent (31 percent). Misappropriation of assets occurred in 14 percent of the fraud cases, which was similar to the 12 percent reported in COSO's 1999 study.

The occurrence of improper revenue recognition (61 percent) was higher than the rate of occurrence (50 percent) reported in COSO's 1999 study. Close examination of revenue accounting and related fraud techniques is needed to better understand how revenue recognition is used to distort financial statement information. More detailed analysis of revenue fraud risk may be needed within industries to strengthen understanding of how revenue is fraudulently misstated. To the extent that improper revenue recognition involves non-financial executives, better education and training on revenue recognition concepts and SEC reporting obligations are needed.

Valuation issues related to recording existing assets deserve more focus, given that a majority of frauds involved asset overstatements. This concern may be heightened as financial reporting valuations become more dependent on fair value accounting.

Role of the Board of Directors

One of the major contributions of this study is the comparative analysis of board governance characteristics between fraud firms and a similar set of no-fraud firms. This allows us to observe whether certain board characteristics are more likely to be associated with fraud firms relative to no-fraud firms.

Full Board of Directors

The overarching insight from the analysis of differences in board characteristics between fraud and no-fraud firms is the lack of notable differences in many of the governance characteristics that have been the focus of regulators, exchanges, and governance experts in the last several

years. For example, firms engaging in fraudulent financial reporting had more inside directors (i.e., management) than no-fraud firms during the sub-period 1991-1999.⁴ However, following changes in stock exchange listing requirements implemented by the major U.S. exchanges, statistically significant differences in the composition of boards no longer existed between fraud and no-fraud firms in 2001-2004. Furthermore, while there are some differences in certain board characteristics between fraud and no-fraud firms that are statistically significant, in many instances the practical significance of those differences is not overwhelming.

Additional research and information-gathering about board processes may be needed to determine if there are certain board actions or tasks that impact fraud risk oversight, including board group dynamics, process flow, and board judgment and decision making (Beasley et al. 2009). Perhaps processes related to board agenda setting, the manner in which information is shared and discussed among the board members, and interactions between the board and management differ between fraud and no-fraud firms. More study is warranted.

Audit Committee

With all the focus on audit committees in the last decade, one of the important insights from this study is that meaningful differences in audit committee characteristics between fraud and no-fraud firms are generally no longer observed. For example, almost all fraud and no-fraud firms had audit committees; the average audit committee size for both groups was about three members; and on average, audit committees of both groups met nearly four times per year.

While many audit committee characteristics have been the focus of audit committee reform and regulation over the past decade, there is little evidence that these characteristics are associated with the occurrence of fraudulent financial reporting. Although we no longer see meaningful differences in most audit committee characteristics between fraud and no-fraud firms, this does not mean that all audit committees are similarly effective with respect to preventing, deterring, and detecting fraudulent financial reporting. Future research may be needed that focuses on the interaction of other governance mechanisms (e.g., the nominating committee) with the audit committee's ability to prevent, deter, and detect fraudulent financial reporting (see Carcello et al. 2010). And, future research about audit committee processes may be

⁴ Our sample period overlapped the widely recognized *Report and Recommendations of the Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees* (Blue Ribbon Committee (BRC) 1999). That report resulted in several changes in stock exchange listing requirements related to board governance made in 2000 by both the NYSE and NASDAQ. As a result, we partitioned our analysis of the data into two sub-periods, 1991-1999 and 2001-2004, based on the first fraud year. As explained later in this document, we excluded from this sub-analysis frauds occurring in the year 2000 because the stock exchanges made changes to their listing requirements in 2000.

needed to determine if other characteristics and behaviors of audit committees have an impact on the prevention, deterrence, or detection of fraudulent financial reporting.

Compensation Committee

Greater focus on the roles and processes used by compensation committees may provide helpful insights as to how boards consider the impact of compensation policies on the risk of fraud. Most fraud and no-fraud firms maintained a compensation committee, and there were few differences in compensation committee characteristics between fraud firms and no-fraud firms. Because compensation arrangements for senior executives are often tied to financial statement measures, more study about the effect of compensation policies and processes on fraud risk and board oversight of that risk may be needed.

Related Party Transactions

Fraud firms disclosed significantly more related party transactions than no-fraud firms. Seventy-nine percent of fraud firms had disclosed a related party transaction in the proxy statement filed during the first fraud period compared to 71 percent of no-fraud firms for the comparable time period. The higher frequency of related party transactions for fraud firms suggests that the presence of related party transactions may reflect heightened fraud risk. Greater scrutiny of related party transactions may be warranted to determine if the nature of those transactions has broader implications regarding management's integrity, philosophy, and ethical culture.

Auditor Considerations

Fraud goes undetected by auditors of all types and sizes. Big Six/Four firms audited 79 percent of the fraud companies during the fraud period (similar for the no-fraud firms at 83 percent). The challenges of detecting fraudulent misstatements of financial information affect auditors of entities spanning numerous industries and different sizes.

Type of Auditor Opinion on the Financial Statements

Virtually all of the fraud firms received an unqualified opinion on the last set of fraudulently misstated financial statements. However, the unqualified audit report of fraud firms was more likely (56 percent) to contain additional explanatory language than for no-fraud firms (36 percent). More research is needed to examine the nature of the audit report modification and to determine if there is any relation between the report modification and the nature of the fraud technique employed.

Section 404 of the Sarbanes-Oxley Act of 2002

Because of the significant time lag between the occurrence of fraud and the subsequent issuance by the SEC of an AAER, only a small number of the 347 instances of fraud affected accelerated filers subject to Section 404 of SOX. For those firms, the nature of the Section 404 internal control opinions did not foreshadow future financial reporting problems. The Section 404 opinions indicated effective internal controls unless there had already been a restatement or other correction of a 10-K announced. Therefore, adverse Section 404 opinions for the small sample examined were not diagnostic of future reporting problems, but instead only highlighted already-announced reporting problems.

The small sample size available for analysis limits our ability to draw any significant insights about auditors' ability to detect internal control weaknesses that may lead to fraud in the future. It also is important to note that we are unable to measure the impact of Section 404 in preventing or deterring management from engaging in fraudulent financial reporting.

Auditor Change and Auditor Implications

The rate of auditor changes for fraud firms was double the rate of auditor changes for the similar set of no-fraud firms. Twenty-six percent of the fraud firms versus 12 percent of the no-fraud firms changed auditors between the period that the company issued the last clean financial statements and the period the company issued the last set of fraudulent financial statements. Sixty percent of the auditor changes for fraud firms occurred during the fraud period, while the remaining 40 percent of fraud firms that changed auditors did so during the fiscal period just before the fraud began. A detailed hindsight analysis of auditor changes involving known instances of fraud may provide helpful insights about potential relations between conditions leading to auditor changes and conditions related to fraud occurrences.

Financial statement fraud sometimes implicated the external auditor. Auditors were named in the AAERs for 78 of the 342 fraud cases (23 percent) where AAERs named individuals. This was somewhat lower than what was reported (29 percent) in COSO's 1999 study. When auditors were named in the AAERs, about 39 percent of those named were charged with violating the anti-fraud statutes, while the remaining 61 percent were charged with violating non-fraud provisions including Rule 102(e) of the 1934 Securities Exchange Act. National audit firms were less likely to be named in an SEC enforcement action than were non-national firms, even though national firms audited most of the fraud companies.

Consequences for Individuals and Firms Engaged in Fraud

We gathered extensive data about consequences affecting both individuals serving in management roles and the companies as a whole for a period of two years subsequent to the issuance of the last AAER about the fraud. The pairing of fraud firms with no-fraud firms allowed us to analyze whether subsequent events affecting individuals and the company as a whole were significantly different for fraud firms relative to no-fraud firms.

Consequences for Individuals

The consequences associated with financial statement fraud were severe for individuals allegedly involved. In almost half of the cases (47 percent), the SEC barred one or more individuals from serving as an officer or director of a public company. Civil fines were imposed in 65 percent of the fraud cases, and disgorgements were imposed in 43 percent of the cases. The average fine imposed by the SEC was \$12.4 million, and the average disgorgement was \$18.1 million. The cumulative amount of fines for all fraud companies was \$2.74 billion, while the cumulative amount of disgorgements was \$2.65 billion. The median fine was \$100,000, and the median disgorgement was \$195,000.

Most CEOs and CFOs (80 percent or more) left the company within two years of the SEC's last AAER related to the fraud. Twenty-one percent of CEOs were indicted within that time period, and 64 percent of the indicted CEOs were convicted. Similarly, 17 percent of CFOs were indicted, with 75 percent of the indicted CFOs being convicted.

Despite the magnitude of these individual consequences, the severity of the penalties may not be a sufficient deterrent. More understanding about the mindset of fraud perpetrators may be needed to understand the factors individuals take into account when they engage in fraudulent activity. Better understanding of their perceptions about possible long-term consequences for engaging in fraud may provide useful perspectives about the deterrence effect of personal consequences.

Consequences for Companies Committing Fraud

Severe consequences also awaited companies committing fraud. Companies experienced significant abnormal stock price declines as news of the alleged frauds first emerged. The average fraud company's stock price dropped by an abnormal 16.7 percent in the two days surrounding the initial

press disclosures of an alleged fraud. Fraud company stock prices also abnormally declined an average of 7.3 percent in the two days surrounding the announcement of a fraud investigation by the SEC or Department of Justice.

In addition to the negative stock market reactions to news announcements about alleged fraud or fraud investigations, many fraud firms suffered long-term consequences, including bankruptcy, delisting by national exchanges, and material asset sales. Twenty-eight percent of fraud firms were bankrupt or liquidated within two years from the year in which the SEC issued the last AAER related to the fraud, and 47 percent were delisted from a national stock exchange. Material asset sales also affected about 62 percent of fraud companies. These rates of occurrence were significantly higher than the experiences of no-fraud firms during those same time periods.

Conclusion

Detailed analyses of the findings described above are provided in the remainder of this report. We encourage parties involved in financial reporting to carefully consider the detailed information presented in this report. We also encourage further research to better understand many of the underlying factors likely to affect the prevention, deterrence, and detection of fraudulent financial reporting. COSO hopes numerous parties will recommit their efforts to improve the prevention, deterrence, and detection of fraudulent financial reporting.

Overview of Report

The remainder of this report is organized as follows. Section II provides a description of the approach we took to identify the cases of fraudulent financial reporting and contains a summary of the sources and methods used to gather data related to each case. Section III presents the results from our detailed analysis of the 347 cases of fraudulent financial reporting. Section IV provides concluding comments, and Section V contains a brief description of the authors who conducted this study.

We are confident that this report, *Fraudulent Financial Reporting: 1998-2007*, will prove helpful to parties concerned with corporate financial reporting and will add to the insights provided by COSO's 1999 study, *Fraudulent Financial Reporting: 1987-1997*. We hope the study will stimulate greater awareness of new opportunities for improvements in the corporate financial reporting process, as well as avenues for future research.

II. Description of Research Approach

This study builds on the previous COSO-sponsored study, *Fraudulent Financial Reporting: 1987-1997*, by presenting findings related to fraudulent financial reporting for the period 1998-2007. The data collection effort was conducted under the direction of four accounting researchers (“the authors”) who oversaw the entire study including generation of this monograph. The authors worked with two research managers, who monitored and reviewed the work of a data collection team (“the team”). The research managers reported to and consulted with the authors throughout the entire research process.

The first step in this research project involved the identification of all alleged instances of fraudulent financial reporting captured by the SEC in an AAER issued during the period 1998-2007. In order to obtain detailed publicly-available information about company-wide and management characteristics of companies involved, the focus of this study was on instances of fraudulent financial reporting allegedly committed by SEC registrants that ultimately led to the issuance of an AAER.⁵

To identify instances of fraudulent financial reporting investigated by the SEC in the period 1998-2007, the team read all AAERs issued by the SEC between January 1998 and December 2007. From the reading, the team identified all AAERs that involved an alleged violation of Rule 10(b)-5 of the 1934 Securities Exchange Act or Section 17(a) of the 1933 Securities Act. We focused on violations of these securities laws given that these sections of the 1933 Securities Act and 1934 Securities Exchange Act are the primary antifraud provisions related to financial statement reporting. Because violations of these securities provisions generally require the intent to deceive, manipulate, or defraud, they more specifically indicate alleged instances of financial statement fraud than do other provisions of the securities laws.⁶

The AAERs represent one of the most comprehensive sources of alleged, discovered cases of financial statement fraud in the U.S. However, such an approach does limit the ability to generalize the results of this study to other settings. Because the identification of fraud cases was based on a review of AAERs, the findings are potentially biased by the enforcement strategies employed by the staff of the SEC. Because the SEC is faced with constrained resources, there is the possibility that not all cases of identified fraud occurring in the U.S. were addressed in the AAERs. There may be a heavier concentration of companies contained in the AAERs where the SEC assessed the probability of a successful finding of financial statement fraud as high. Also, the SEC may choose to conduct “sweeps” of particular industries or types of transactions, which may impact the distribution of fraud instances reported in AAERs. In addition, the cases contained in the AAERs represent instances where the SEC alleged the presence of financial

statement fraud. In most instances, the company and/or individuals named neither admitted nor denied guilt. To the extent that enforcement biases are present, the results of this study are limited. However, given no better publicly-available source of alleged financial statement fraud instances, we believe that this approach was optimal under the circumstances. Furthermore, any SEC fraud investigation is a significant event in the life of the affected company and individuals involved in the financial reporting process, including boards of directors and auditors. Thus, insight as to fraud occurrences investigated by the SEC is informative, regardless of any inherent biases that may be present in how the SEC selects its enforcement cases.

For purposes of this report, the term “fraudulent financial reporting” represents the intentional material misstatement of financial statements or financial disclosures (in notes to the financial statements or SEC filings) or the perpetration of an illegal act that has a material direct effect on the financial statements or financial disclosures. The term financial statement fraud was distinguished from other causes of materially misleading financial statements, such as unintentional errors and other corporate improprieties that do not necessarily cause material inaccuracies in financial statements. Throughout this report, references to fraudulent financial reporting are all in the context of material misstatements. Our study excludes restatements of financial statements due to errors or earnings management activities that did not result in a violation of the federal antifraud securities provisions.

The team’s reading of AAERs during this period allowed us to develop a comprehensive list of companies investigated by the SEC during 1998-2007 for alleged financial statement fraud. The team read 1,759 AAERs, beginning with AAER #1004 and ending with AAER #2762. From this process, we identified 347 companies (1,335 total AAERs for these 347 companies) involved in alleged instances of fraudulent financial reporting. For each of these companies, we accumulated information about the specific securities law violation to ensure that the case involved an alleged violation of Rule 10(b)-5 of the 1934 Securities Exchange Act or Section 17(a) of the 1933 Securities Act.

⁵ Publicly-traded partnerships, broker-dealers, and unit investment trusts were excluded from this study.

⁶ We did not include other violations of laws whose only consequence gave rise to a potential contingent liability (e.g., an “indirect effect illegal act” such as a violation of Environmental Protection Agency regulations).

For each of the 347 companies, the team collected extensive information to create a comprehensive database of company and management characteristics surrounding instances of financial statement fraud from (a) AAERs related to the alleged fraud, (b) databases containing selected financial statement data reported in Form 10-Ks filed before and during the period the alleged financial statement fraud occurred, (c) proxy statements issued during the alleged fraud period, and (d) databases of business press articles written about the sample companies after the fraud was revealed, as well as about the no-fraud control firms.

SEC AAERs issued
from 1998-2007
addressed
347 instances
of fraudulent financial
reporting.



Data Obtained from AAERs

The team read all AAERs issued during 1998-2007 related to the alleged financial statement fraud for each of the sample companies. In many cases, several AAERs related to a single fraud at one company. From the reading, the team attempted to capture the following information:

1. A list of the specific annual financial statements (contained in Form 10-Ks) or quarterly financial statements (contained in Form 10-Qs) fraudulently misstated and other filings with the SEC (e.g., S-1 registration statements) that incorporated fraudulently misstated financial statements. From this, we were able to determine the length of time the alleged fraud occurred.
2. A brief description of the nature of the fraud allegations including a description of how the fraud was allegedly perpetrated.
3. The dollar amounts of the fraud and the primary accounts affected.
4. Identification of types of personnel and outsiders involved in the fraud.
5. An indication of the alleged motivation for committing the fraud.
6. The industry in which the company operated.
7. A summary of the reported outcome of the SEC's investigation, including disciplinary action against senior management personnel.

Audited Financial Statement Data

We obtained selected audited financial statement data from annual financial statements filed in a Form 10-K with the SEC. We used Standard and Poor's COMPUSTAT® database to obtain selected balance sheet and income statement amounts from the audited financial statements included in the Form 10-K filed with the SEC for the fiscal period preceding the first known instance of fraudulently misstated financial statements for each of the sample companies ("last clean financial statements"). This provided us information about the financial position and results of operations in the period just before the period in which the fraud allegedly first occurred.

We also obtained from COMPUSTAT® the name of the audit firm responsible for auditing the financial statements issued during the fraud period and the nature of the auditor's opinion on those financial statements. If the fraud period extended more than one fiscal year, we obtained the name of the audit firm and the type of audit opinion issued for the last fiscal year of the fraud period.

Data Obtained from Proxy Statements

We obtained copies of the first proxy statement sent to shareholders during the period in which the alleged financial statement fraud was in process. We reviewed these proxy statements to gather information about the characteristics of the board of directors and its audit and compensation committees (composition, number of meetings, etc.) that were in place during the fraud period.

Data from Business Press Articles

To obtain information about consequences for the company, senior management, and board members subsequent to the revelation of the financial statement fraud, we performed an extensive search of the Factiva database of financial press articles. Among the many news sources included in Factiva are over 5,000 newspapers, journals, and magazines, including *The Wall Street Journal*, *The New York Times*, *The Financial Times*, and *The Economist*, and over 500 newswires including Dow Jones, Reuters, PR Newswire, and The Associated Press.

For each fraud, we performed a search for subsequent consequences to the company, senior management, and board members using a series of key word search strings. Our search began with the first day of the last fiscal year in which the fraud occurred, and ended on the last day of the fiscal year ending two fiscal years after the fiscal year in which the last AAER related to the fraud was issued.

We reviewed each instance where an article or press release was identified as a result of the application of key word search strings. We captured information about whether the company had experienced financial difficulty to the point of filing for bankruptcy, being placed in conservatorship, or liquidating. We also determined whether the company was delisted from a national stock exchange or a national securities association, or engaged in a material asset sale (including a sale of the company). We also captured information about the consequences of the alleged fraud for senior management and members of the board of directors, including resignation, termination, and other turnover. In addition, we captured whether members of senior management were criminally indicted and convicted. Finally, to examine abnormal stock price effects linked to public disclosures of the alleged fraud, we captured the first public disclosure that suggested that material accounting improprieties may have occurred, and the first public disclosure of an SEC or Department of Justice investigation.

Data Limitations

Readers should recognize that, despite the best efforts to collect complete data for all sample companies, the data sources used were often incomplete, and sometimes inconsistent. For example, AAERs were uneven in their level of disclosure, and other sources (e.g., Form 10-Ks, proxies, etc.) sometimes were not available. Additionally, the analysis is limited by the accuracy and completeness of information that is reported in these sources.

In addition to data availability issues, readers should also recognize that a great deal of professional judgment was necessary when collecting, categorizing, and synthesizing the data. Written summaries prepared from our analysis of the data obtained from the AAERs comprise several thousand pages of text, and the team incurred over 10,000 hours to gather and summarize the data underlying this study. We believe that we have been reasonable and consistent in our judgments, but the research approach was limited by the quality of our judgments.

Finally, the authors and research managers performed a great deal of data review to ensure the quality of the team's efforts. Much of the team's work was subjected to layers of reperformance, review, and reasonableness testing to promote sound and consistent data collection and summarization.

Given the various limitations above, we encourage readers to view the results as sound approximations of the underlying reality. With the large number of individuals on the team involved, and with the need for a large amount of professional judgment due to the nature of the underlying data, the results of the study should be viewed as providing a broad profile of fraudulent financial reporting during this period rather than perfectly precise dollar amounts or percentages for all data points included in this monograph.

Detailed Analysis of Instances of Fraudulent Financial Reporting: 1998-2007

We analyzed instances of fraudulent financial reporting reported by the SEC in AAERs issued between January 1998 and December 2007. After reading 1,759 AAERs, we identified 347 companies involved in alleged instances of fraudulent financial reporting.⁷ In most instances, these fraud cases represent allegations of financial statement fraud made by the SEC without the company and/or individuals named in the AAER admitting guilt.

This section contains the findings from our reading of (a) AAERs related to each of the 347 companies, (b) databases containing selected financial statement data reported in Form 10-Ks filed before and during the period the alleged financial statement fraud occurred, (c) proxy statements issued during the alleged fraud period, and (d) databases of business press articles written about the sample companies after the fraud was disclosed. This section contains extensive information about each of the following items:

- Nature of the companies involved
- Characteristics of the alleged fraud perpetrators
- Nature of the frauds
- Board governance characteristics, including the nature of the audit committee and compensation committee
- Issues related to the external auditor
- Consequences to fraud companies and perpetrators subsequent to discovery.

To examine whether certain board governance characteristics and whether certain events affecting fraud firms subsequent to the revelation of a fraud event are unique to fraud companies, we gathered a sample of similar no-fraud firms to examine whether differences exist between fraud firms and no-fraud firms. Our methodology for selecting and evaluating information related to no-fraud firms is described later in this document in the section “Board Governance Characteristics.”

Nature of Companies Involved

Financial Profile of Sample Companies

We were able to obtain the last clean financial statements for 313 of the 347 sample companies.⁸ Table 1 highlights selected financial statement information for these fraud companies.

While total assets, total revenues, and stockholders’ equity averaged \$5.772 billion, \$2.557 billion, and \$1.001 billion, respectively, the median of total assets was \$93.1 million, the median of total revenues was \$72.4 million, and the median of stockholders’ equity was \$39.5 million in the period before the fraud began. Given third quartiles of total assets of \$674 million, total revenues of \$466 million, and stockholders’ equity of \$242 million, most of the sample companies operated under the \$500 million size range.⁹

Fraud affected companies of all sizes. Fraud companies ranged from startups with no assets or revenues to companies with just under \$400 billion in assets or over \$100 billion in revenues. Similarly, stockholders’ equity ranged from negative equity of over \$1 billion to positive equity of over \$53 billion. However, the typical size of the fraud companies noted above is substantially larger than the fraud companies in COSO’s 1999 study.

The sample companies in the 1999 study had total assets, total revenues, and stockholders’ equity that averaged \$533 million, \$233 million, and \$86 million, respectively. The median of total assets in the 1999 study was only \$15.7 million, the median of total revenues was only \$13 million, and the median of stockholders’ equity was only \$5 million in the period before the fraud began. Given third quartiles of total assets of \$74 million, total revenues of \$53 million, and stockholders’ equity of \$17 million, most of the sample fraud companies in the 1999 study operated well under the \$100 million size range, which is substantially smaller than the sample fraud companies from the current study, even considering the effects of inflation.

Fraud companies’ median assets and revenues were just

under **\$100** million in the year preceding the first fraud period.



⁷ Generally there were multiple Accounting and Auditing Enforcement Releases (AAERs) related to the fraud at a single company.

⁸ Our primary source of previously issued financial statements was the COMPUTSTAT® database. There were slight differences in availability of certain financial statement items. Thus, we were unable to locate each data item for all of the 313 sample companies available on COMPUTSTAT®, as shown in the last row of Table 1.

⁹ Because some high-profile frauds involving very large companies (e.g., Enron, WorldCom, etc.) are included in this ten-year period, the means are inflated. Therefore, we winsorized the sample by setting all observations above the 95th percentile to equal the value for the observation at the 95th percentile. The winsorized means were \$1.9 billion for total assets, \$1.6 billion for revenues, \$478 million for stockholders’ equity, \$49 million for net income, and \$84 million for cash flow from operations.

Some of the sample companies were financially stressed in the period preceding the fraud period. The median net income was only \$875,000, with the 25th percentile facing net losses of nearly \$2.1 million. The 75th percentile had net income just over \$18 million in the year before the

fraud allegedly began. Similarly, cash flow from operations averaged \$246 million, while median cash flow from operations was only \$317,000. This closeness to break-even positions was consistent with what was observed in COSO's 1999 study.

Table 1. Financial Profile of Sample Companies

Last Financial Statements Prior to Beginning of Fraud Period

	Total Assets	Revenues	Stockholders' Equity (Deficit) (in \$000s)	Net Income (Loss)	Cash Flow From Operations
Mean	\$5,771,693	\$2,557,298	\$1,000,508	\$140,097	\$246,332
Median	\$93,112	\$72,360	\$39,457	\$875	\$317
Minimum value	\$0	(\$23)	(\$1,021,747)	(\$2,687,000)	(\$1,214,000)
1st quartile	\$14,806	\$9,468	\$4,765	(\$2,136)	(\$2,007)
3rd quartile	\$673,805	\$465,870	\$242,261	\$18,090	\$37,384
Maximum value	\$391,673,000	\$128,313,000	\$53,206,590	\$8,897,000	\$16,654,000
Companies	313	311	312	311	303

National Stock Exchange Listing

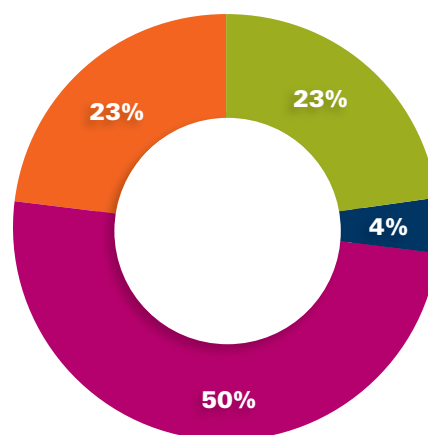
We reviewed the last clean financial statements and CRSP database to identify the national stock exchange where each company's stock traded. We were able to identify the stock exchange listing for 313 of the 347 sample companies. As indicated by the pie chart in Table 2, most (50 percent) were traded on the NASDAQ exchange. Twenty-three percent of the companies' stock traded on the New York Stock Exchange, and four percent of the companies' stock traded on the American Stock Exchange. Finally, 23 percent of the companies' stock traded on electronic bulletin boards, pink sheets, and other over-the-counter markets.

According to the *2006 Final Report of the Advisory Committee on Smaller Public Companies* (Advisory Committee 2006), approximately 19.5 percent of all publicly-traded companies are registered on the New York Stock Exchange, 5.7 percent are registered on the American Stock Exchange, and 24.2 percent trade in the NASDAQ National Market or NASDAQ Capital Market. The remainder trade on the over-the-counter bulletin boards (22.6 percent) or pink sheets (28.0 percent). Thus, the mix of fraud firms trading in NASDAQ markets (50 percent) is higher than the overall profile of public companies on NASDAQ (24 percent).

Table 2. Sample Companies' National Stock Exchange Listing

(n = 313 with Available Information)

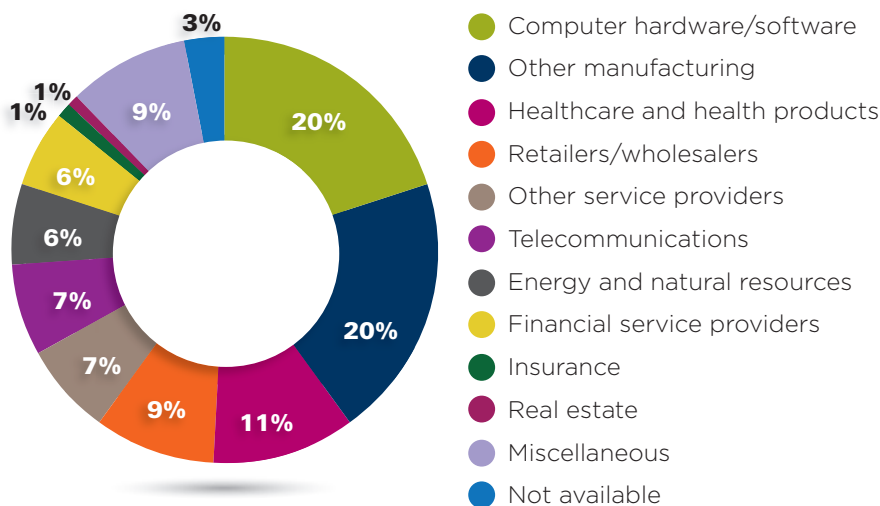
- New York Stock Exchange
- American Stock Exchange
- NASDAQ
- Electronic bulletin boards, pink sheets, and other over-the-counter markets



The percentage of companies (73 percent) whose stock traded on any over-the-counter market (NASDAQ, electronic bulletin boards, pink sheets, etc.) was in line with the 78 percent of companies in the 1999 COSO study whose stock traded on any of the over-the-counter markets. The

percentage of companies in COSO's 1999 study whose stock traded on the New York Stock Exchange (15 percent) or American Stock Exchange (7 percent) also was fairly similar to the present study.

Table 3. Primary Industries of Sample Fraud Companies



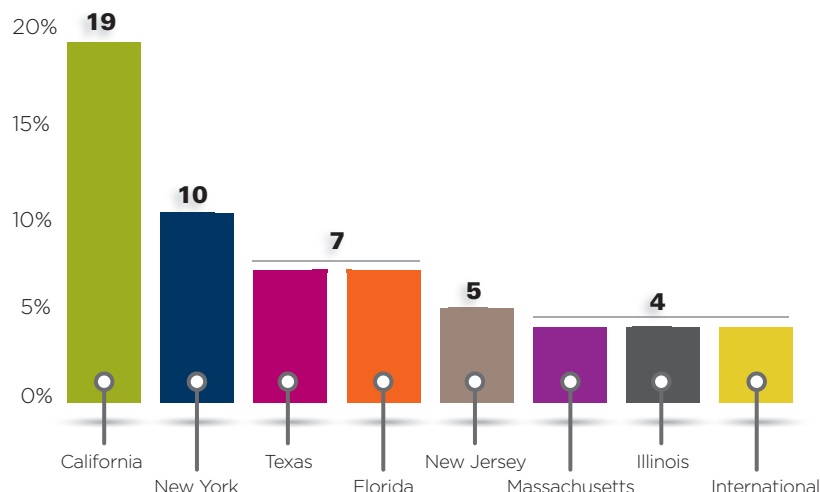
Industries for Companies Involved

We reviewed the information included in the AAERs to determine the primary industry in which the fraud companies operated. Similar to our findings in the 1999 COSO study, the two most frequent industries cited were computer hardware and software (20 percent) and other manufacturing (20 percent). Other frequently-cited industries in the current study were healthcare/health products (11 percent), retailers/wholesalers (9 percent), other service providers (7 percent), and telecommunications (7 percent). See the pie chart in Table 3.

Geographic Location of Sample Companies

We reviewed the AAERs to identify the geographic location of the fraud companies. Most of the frauds were committed at or directed from the companies' headquarters locations. We were able to identify the headquarters location for 329 of the 347 fraud companies. Table 4 contains information about the frequency of cases for states in which at least 10 fraud companies were located. Similar to sample fraud companies examined in COSO's 1999 study, the highest percentages of frauds involved companies headquartered in California and New York. In the current study, the most fraud companies were located in California (19 percent of the fraud cases), New York (10 percent), Texas (7 percent), Florida (7 percent), New Jersey (5 percent), Massachusetts (4 percent), and Illinois (4 percent). This pattern is consistent with centers of business activity in the U.S.

Table 4. Locations of Fraud Companies' Headquarters
(n = 329 with available information)



Alleged Fraud Perpetrators

Individuals Named in the AAERs

From our reading of the AAERs, we captured information about the types of company representatives and outsiders named in an AAER related to each instance of alleged fraudulent financial reporting. We captured names of all individuals listed in any of the AAERs related to an instance of fraudulent financial reporting, whether these individuals were charged with fraud or charged with other lesser violations. The SEC named in the AAERs individuals involved in the alleged fraud for 342 of the 347 fraud companies. Even though these individuals were named in an AAER, there was no certain evidence that all the named participants violated the antifraud statutes, and other individuals not named in an AAER may have been involved in the fraud. In addition, most of the named participants neither admitted nor denied guilt of any kind.

Using the highest managerial title for an individual, we summarized the typical employee positions named in the AAER. For example, if one individual had the titles of chief financial officer (CFO) and controller, we reported that as involving strictly the CFO position in our reporting in Table 5 on the next page. As noted in Table 5, the senior executive most frequently named in an AAER was the chief executive officer (CEO). The CEO was named as one of the parties involved in 246 of 342

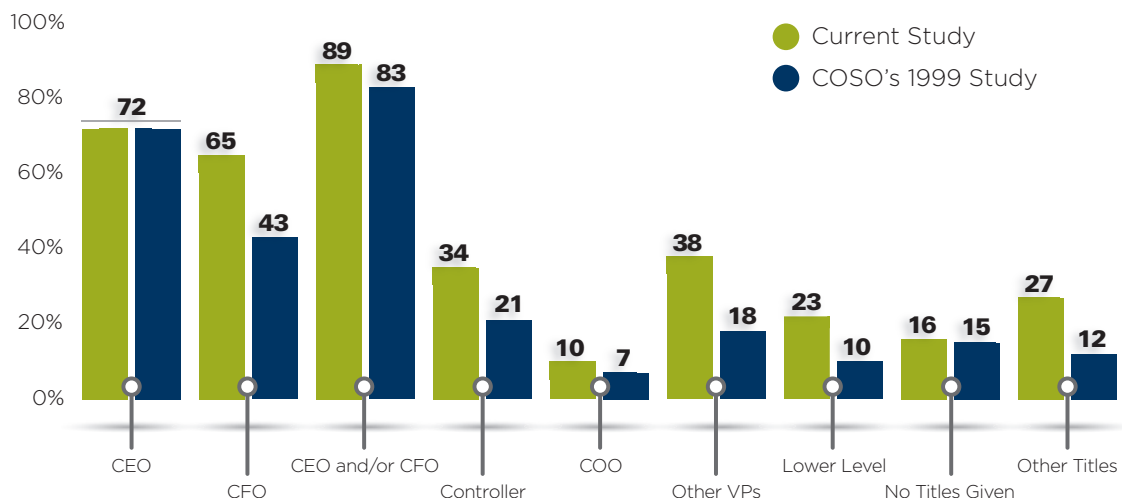
fraud companies, representing 72 percent of the sample companies with available information. The second most frequently identified senior executive was the CFO. The CFO was named in 222 of the 342 fraud companies, which represents 65 percent of the companies involved. When considered together, the CEO and/or CFO were named in 305 of the 342 cases (89 percent).

The company controller was named in 115 of the 342 frauds, representing 34 percent of the fraud instances. The chief operating officer (COO) was named in 10 percent of the frauds (35 of 342), and other vice presidents were named in 129 of the 342 frauds (38 percent of the cases). Lower level personnel were named in 23 percent of the cases (80 of 342 fraud instances). Recall that our classification scheme tracked the highest named position for an individual. Thus, the noted percentages associated with less senior positions may be understated. In addition, because of the relatively small size of some of the fraud firms in this sample, some of the noted positions (e.g., COO) may not have been filled. Finally, SEC enforcement actions may target top executives more frequently than lower level employees. These factors may contribute to the lower percentages noted for these positions.

The frequency with which the AAERs name the CEO as being allegedly involved in the fraud was the same (72 percent of fraud companies) for the current study and the 1999 COSO study. However, the frequency with which the AAERs named

The **CEO** and/or **CFO** were named in an AAER for **89%** of the fraud companies.



Table 5. Types and Frequencies of Individuals Named in AAERs

Note: In many cases the AAERs cited board members for their involvement in the fraud. The vast majority of these individuals appeared to be company managers serving on the board, including CEOs serving as Board Chair.

the CEO and/or CFO in the current study (89 percent) is slightly higher than in the 1999 COSO study (83 percent). In addition, the CFO was approximately 50 percent more likely to be subject to an SEC enforcement action in the current study than in the 1999 study (named in 65 percent of cases in the current study, versus 43 percent of cases in COSO's 1999 study). Finally, the frequency with which the SEC named other individuals in the AAERs was generally higher in the current study as compared to the 1999 COSO study.

In addition to the results in Table 5, individuals named in the AAERs extended beyond company executives. In 81 of the 342 fraud companies (24 percent of the cases), outsiders were named, generally customers and vendors. The external auditor was named in the AAER for 78 of the 342 fraud companies (23 percent of the fraud cases with information about perpetrators), and members of the audit committee were named in 7 of the 342 fraud companies (2 percent of the cases).

Alleged Motivation for the Fraud

In some instances, the SEC provided discussion in the AAERs about the alleged motivation for the fraud. Because the SEC did not consistently describe the alleged motivations in each fraud instance and there were often multiple motivations for a single fraud, we do not provide summary

statistics about the rate of particular motivations. However, among those noted, the most commonly cited reasons summarized by the SEC in the AAERs include committing the fraud to –

- Meet external earnings expectations of analysts and others
- Meet internally set financial targets or make the company look better
- Conceal the company's deteriorating financial condition
- Increase the stock price
- Bolster financial position for pending equity or debt financing
- Increase management compensation through achievement of bonus targets and through enhanced stock appreciation
- Cover up assets misappropriated for personal gain.

Nature of the Frauds

Total Amount of the Fraud

In an attempt to obtain a judgmental measure of the typical size of the financial statement frauds, we accumulated information from the AAERs that provided some indication of the amounts involved. In some cases, the AAERs did not disclose the dollar amounts involved. As a result, we were only able to obtain some measure of the dollar amounts involved for 300 of the 347 fraud companies. As reported in Table 6, the average fraud involved \$397.68 million of cumulative misstatement or

misappropriation over the fraud period, while the median fraud involved \$12.05 million.¹⁰ The smallest fraud was \$47,200, while the largest totaled \$25.8 billion.¹¹ The first

and third quartiles of cumulative misstatements or misappropriations were \$3.65 million and \$55.95 million, respectively.¹² The wide variance between the mean and median fraud amounts is due to a few large high-profile frauds during the period, such as the frauds at Enron and WorldCom.

The average cumulative misstatement amount was **\$397.68** million, while the median cumulative misstatement was **\$12.05** million.

Table 6. Cumulative Dollar Amount of Fraud for a Single Company

	# of Sample Companies with Information	Mean Cumulative Misstatement or Misappropriation (in \$ millions)	Median Cumulative Misstatement or Misappropriation (in \$ millions)
Cumulative amount of fraud for a single company	300	\$397.68	\$12.05
Minimum = \$47,200; Maximum = \$25.8 billion; 1 st quartile = \$3.65 million; 3 rd quartile = \$55.95 million			

The size of the cumulative misstatement or misappropriation in the current study was substantially larger than the cumulative misstatement or misappropriation summarized in COSO's 1999 study. For the sample fraud companies in the 1999 COSO study, the average cumulative misstatement was only \$25.0 million, while the median cumulative misstatement was \$4.1 million. The first and third quartiles of cumulative misstatements or misappropriations for the 1999 COSO study were \$1.6 million and \$11.76 million, respectively.

For the period 1998-2007, the total cumulative misstatement or misappropriation was nearly \$120 billion across 300 fraud cases with available information. This large total is driven by the numerous large company frauds of the early 2000s, including Enron, WorldCom, and others. It is clear that the magnitude of the fraud cases was much greater in 1998-2007 than in 1987-1997.

Unfortunately, the AAERs do not consistently report the dollar amounts involved in each fraud. In some instances, the AAERs report the dollar amounts of the fraud by noting the extent to which assets were misstated. In other cases, the AAERs report the amounts that revenues, net income, pre-tax income, or other items were misstated. We used the nature of the data presented in the AAER to develop a reasonable measure of the fraud amount; however, we caution the reader that a great deal of judgment was used. In addition, this analysis was dependent on which figures the SEC chose to disclose in the AAERs. Accordingly, the categories and figures below should be viewed as reasonable estimates of fraud amounts (i.e., not exact point estimates). Information about the amounts involved by fraud type is provided on the next page in Table 7.

¹⁰ To evaluate the impact of large outliers, we winsorized the data by setting the cumulative misstatement or misappropriation amount for those frauds above the 95th percentile to be equal to the value for the 95th percentile. The winsorized average was \$203.7 million.

¹¹ For two high-profile frauds, Royal Ahold and WorldCom, the cumulative fraud amounts provided in the AAERs were somewhat lower than amounts we noticed in either an SEC press release or in media descriptions of the case. For consistency, in Table 6 we always used the amounts presented in the AAERs, rather than including any larger fraud amounts discussed in press releases or media stories.

¹² Ideally, we would report misstatement information in percentage rather than dollar terms. However, we are unable to report percentages for most companies due to the limited amount of information provided in the AAERs about dollar misstatements and the lack of available financial statements for all fraud periods (which reflect misstated values anyway) for those companies with AAERs reporting misstatement information.

Asset misstatements averaged \$226.74 million, with a median of \$7.9 million. The average misstatements of revenues, expenses, pre-tax income, and net income ranged from \$91.44 million to \$958.98 million, with medians ranging from

\$10.2 million to \$21.5 million. The average misappropriation of assets (i.e., theft of assets) was \$16.3 million, while the median misappropriation of assets was \$4.0 million.

Table 7. Dollar Amount of Misstatements by Fraud Type

Misstatement Type	# of Fraud Companies with Information	Mean Cumulative Misstatement (in \$ millions)	Median Cumulative Misstatement (in \$ millions)
Assets	44	\$226.74	\$7.9
Revenue or gain	132	\$455.04	\$10.3
Expense	26	\$91.44	\$19.8
Pre-tax income	20	\$958.98	\$21.5
Net income	36	\$525.21	\$10.2
Misappropriation of assets	15	\$16.30	\$4.0

Note: See Table 1 for the typical size of the companies involved.

While Tables 6 and 7 provide some information about the average and median cumulative effects of the fraud over the entire fraud period, Table 8 provides an overview of the largest income misstatement in a single period. For each of the companies where the related AAERs reported misstatement information as a function of pre-tax income or net income, we identified the largest single-year or single-quarter misstatement over that company's fraud period. For the AAERs providing misstatement information relative to pre-tax income (information provided for 66 companies), the average of the largest pre-tax misstatement in a single period was \$101.6 million, with a median single period

pre-tax misstatement of \$6.75 million. This was substantially larger than in COSO's 1999 study, which reported an average pre-tax income misstatement of \$7.1 million and median pre-tax income misstatement of \$3.2 million. For AAERs reporting misstatements as a function of net income (105 companies), the average largest single period misstatement of net income was \$90.4 million with a median single period net income misstatement of \$5.0 million.¹³ This was also substantially larger than the average and median largest single period net income misstatement of \$9.9 million and \$2.2 million, respectively, reported in COSO's 1999 study.

Table 8. Largest Single Period Income Misstatement

Description	# of Fraud Companies with Information	Mean Largest Single Year or Quarter Misstatement (in \$ millions)	Median Largest Single Year or Quarter Misstatement (in \$ millions)
Information reported as a function of pre-tax income	66	\$101.6	\$6.75
Information reported as a function of net income	105	\$90.4	\$5.0

Timing of Fraud Period

For the 347 instances of fraudulent financial reporting, the related fraudulently misstated financial statements were issued in calendar years beginning before 1990 and extending through 2006. The years with the greatest number

of misstatements were 1997-2001, with over 100 companies misstating their financials in each of these years. Due to the time lag in SEC enforcement, the vast majority of the misstated periods were before the passage of SOX in 2002.

Only 61 of the 347 fraud companies examined in this study had fraudulently misstated financial statements involving periods subsequent to 2002. Only a small number of those involved companies subject to the reporting provisions of Section 404 of SOX.

Typical Length of Problem Period

The financial statement frauds generally involved multiple fiscal periods. Information to determine the number of months from the beginning of the first fraud period to the end of the last fraud period was available for all of the 347 sample companies. Fraud periods extended on average for 31.4 months, with the median fraud period extending 24 months. This was slightly longer than the average and median fraud periods of 23.7 months and 21 months, respectively, reported in COSO's 1999 study. Many of the frauds began with misstatements of interim financial statements that were continued in annual financial statement filings. Only 44 of the 347 companies (13 percent) issued fraudulent financial statements involving a period of less than twelve months. The longest problem period was 180 months (and it was 168 months for two other companies).

The typical length of the fraud period was **2 years.**



Methods of Fraudulently Reporting Financial Statement Information

Based upon information included in the AAERs, we made our best attempt to identify the methods used to fraudulently report the financial statement information. As noted in Table 9, the two most common techniques used to fraudulently misstate financial statement information involved overstating revenues and assets. Sixty-one percent of the 347 fraud companies recorded revenues inappropriately, primarily by creating fictitious revenue transactions or by recording revenues prematurely. This was a higher rate of revenue misstatements than the 50 percent found in COSO's 1999 study.

Fifty-one percent of the 347 fraud companies overstated assets, primarily by overvaluing existing assets or capitalizing items that should have been expensed.¹⁴ Thirty-one percent of the 347 companies' financial statements were misstated through the understatement of expenses/liabilities. That rate was higher than the 18 percent found in COSO's 1999 study.

Fraudulent misstatement of financial statements frequently involved the overstatement of revenues and assets. Intentional misstatement of financial statements was noted much more frequently than misappropriation of assets.



Table 9. Common Financial Statement Fraud Techniques

Methods Used to Misstate Financial Statements	Percentage of the 347 Fraud Companies Using Fraud Method ^a
Improper revenue recognition:	61%
Recording fictitious revenues – 48%	
Recording revenues prematurely – 35%	
No description/“overstated” – 2%	
Overstatement of assets (excluding accounts receivable overstatements due to revenue fraud):	51%
Overstating existing assets or capitalizing expenses – 46%	
Recording fictitious assets or assets not owned – 11%	
Understatement of expenses/liabilities	31%
Misappropriation of assets	14%
Inappropriate disclosure (with no financial statement line item effects)	1%
Other miscellaneous techniques (acquisitions, joint ventures, netting of amounts, etc.)	20%
Disguised through use of related party transactions	18%
Insider trading also cited	24%

^a The subcategories such as premature revenues or fictitious revenues and assets do not sum to the category totals due to multiple types of fraud employed at a single company. Also, because the financial statement frauds at the sample companies often involved more than one fraud technique, the sum of the percentages reported exceeds 100 percent.

¹⁴ To avoid double-counting, the information about the overstatement of assets does not include overstatements of accounts receivable due to the revenue recognition frauds.

Most of the financial statement fraud instances involved intentionally misstating financial statement information, with only 14 percent of the fraud cases involving misappropriation of company assets (i.e., theft of assets). This was consistent with earlier findings in COSO's 1999 study that 12 percent of the fraud cases involved misappropriation of assets and in the 1987 *Report of the National Commission on Fraudulent Financial Reporting* that 13 percent of the cases against public companies involved misappropriation of assets.

As noted in Table 9, over 60 percent of the sample companies overstated revenues. The revenue misstatements were primarily due to recording revenues fictitiously or prematurely by employing a variety of techniques that include the following:

- **Sham sales.** To conceal the fraud, company representatives often falsified inventory records, shipping records, and invoices. In some cases, the company recorded sales for goods merely shipped to another company location. In other cases, the company pretended to ship goods to appear as if a sale occurred and then hid the related inventory, which was never shipped to customers, from company auditors.
- **Conditional sales.** These transactions were recorded as revenues even though the sales involved unresolved contingencies or the terms of the sale were amended subsequently by side letter agreements, which often eliminated the customer's obligation to keep the merchandise.
- **Round-tripping or recording loans as sales.** Some companies recorded sales by shipping goods to alleged customers and then providing funds to the customers to pay back to the company. In other cases, companies recorded loan proceeds as revenues.
- **Bill and hold transactions.** Several companies improperly recorded sales from bill and hold transactions that did not meet the criteria for revenue recognition.
- **Premature revenues before all the terms of the sale were completed.** Generally this involved recording

sales after the goods were ordered but before they were shipped to the customer.

- **Improper cutoff of sales.** To increase revenues, the accounting records were held open beyond the balance sheet date to record sales of the subsequent accounting period in the current period.
- **Improper use of the percentage of completion method.** Revenues were overstated by accelerating the estimated percentage of completion for projects in process.
- **Unauthorized shipments.** Revenues were overstated by shipping goods never ordered by the customer or by shipping defective products and recording revenues at full, rather than discounted, prices.
- **Consignment sales.** Revenues were recorded for consignment shipments or shipments of goods for customers to consider on a trial basis.

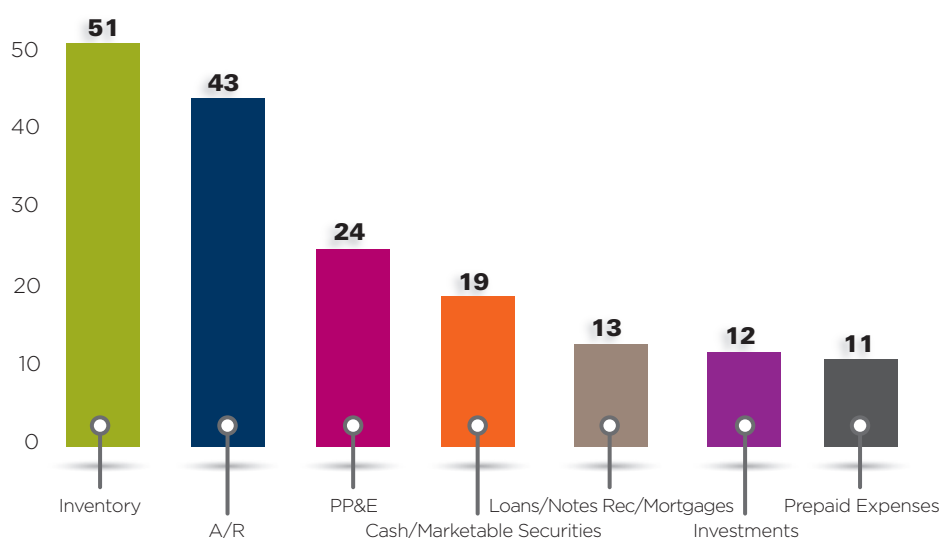
We do not report percentages for each of the above types of fraudulent revenue schemes because the language used by the SEC to describe fraud techniques varied extensively, making it difficult to classify the various types in exact ways. Thus, it was difficult to categorize reliably the frequency of a specific revenue recognition fraud technique.¹⁵

Also, in several instances, company representatives were able to falsify confirmation responses directly or indirectly by convincing third parties to alter the confirmation response. In other cases, company personnel created a variety of false documents.

Over half of the sample companies misstated the financial statement information by overstating assets. Table 10 highlights the typical asset accounts overstated by sample companies. Even excluding the effects of misstating accounts receivable due to the revenue recognition frauds, the two most common asset accounts misstated were inventory (51 cases) and accounts receivable (43 cases). Other asset accounts misstated included property, plant, and equipment (24 cases); cash/marketable securities (19 cases); loans/notes receivable/mortgages (13 cases); investments (12 cases); and prepaid expenses (11 cases).

¹⁵ There are many rich examples of alleged revenue frauds using the methods listed above. Interested readers may consult the following AAERs for illustrative examples of many of these methods. These AAERs were haphazardly selected from numerous possible examples, and there is no intent to highlight any particular company or individual. Rather, these AAERs simply provide interesting insights into alleged revenue fraud methods.

- AAER 1422 - www.sec.gov/litigation/admin/33-7994.htm
- AAER 1559 - www.sec.gov/litigation/litreleases/lr17522.htm
- AAER 2200 - www.sec.gov/litigation/litreleases/lr19121.htm and related complaint at www.sec.gov/litigation/complaints/comp19121.pdf
- AAER 2126 - www.sec.gov/litigation/litreleases/lr18935.htm and related complaint at www.sec.gov/litigation/complaints/comp18935.pdf
- AAER 2451 - www.sec.gov/litigation/admin/2006/33-8716.pdf

Table 10. Number of Fraud Cases With Asset Accounts Misstated

Board Governance Characteristics

A large body of accounting research examines the relation between board governance characteristics and accounting outcomes (for example, see Cohen et al. 2004; DeZoort et al. 2002). To contribute to our understanding of the relation between the presence of fraud and board governance characteristics, we gathered information on the board of directors and on the audit and compensation committees from company proxy statements filed with the SEC. Because we were interested in the governance characteristics in place at the time the fraud began, we gathered governance data based on who was on the board and on the board committees during the first fraud year by examining the proxy statements filed with the SEC in the first year of the fraud. We were able to locate proxies for 203 of the 347 fraud companies.¹⁶ We also gathered data on board leadership issues disclosed by the company in the proxy statement (e.g., whether the same individual served as both CEO and chairman of the board, whether the company's founder was on the board, etc.) and whether there were disclosures of related party transactions.

To analyze whether certain governance characteristics were associated with a higher incidence of fraud, we gathered a sample of 203 no-fraud companies that is similar to the 203 fraud companies with available proxy information. Our goal was to compare the board governance characteristics of the fraud companies with similar companies apparently not engaging in fraud to identify

whether certain board governance characteristics differed between fraud and no-fraud firms.

For each fraud company, we selected a similar no-fraud company. First, the fraud and no-fraud pairs are traded on the same stock exchange. For example, if the fraud company was traded on NASDAQ, the no-fraud company was selected from NASDAQ to control for differences in governance characteristics across exchanges. Second, the proxy data are gathered from corresponding time periods (i.e., to control for differences in governance characteristics across time). Third, the industries of the fraud and no-fraud samples are similar (based on the Standard Industrial Classification (SIC) codes), so as to control for any variations in governance characteristics across industries.

Finally, after the first three constraints, we attempted to make the size of the fraud and no-fraud companies as similar as possible, since larger companies are expected to have more advanced governance mechanisms due to their greater resources. Achieving similar size was the most challenging, as the other three constraints were already in place. If we could not identify an appropriate no-fraud firm whose market value of equity was within plus or minus 30 percent of the fraud firm's market value, we then measured size using total assets (plus or minus 30 percent). Ultimately, the size of the fraud and no-fraud companies is within plus or minus 30 percent in over 75 percent of the cases. There are no significant differences in median market value of equity or assets between fraud and no-fraud firms. Based on

¹⁶ In some instances, the companies failed to file a proxy with the SEC. For others, the relevant proxy was not available in electronic databases or via purchase through outside vendors.

the procedures described above, the samples of fraud and no-fraud companies are similar and provide a reasonable basis for comparison.

Our sample period overlapped the widely recognized *Report and Recommendations of the Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees* (BRC 1999), jointly issued in 1999 by the New York Stock Exchange and the National Association of Securities Dealers. That report resulted in several changes in stock exchange listing requirements related to board governance implemented in 2000 by both the NYSE and NASDAQ. As a result, we partitioned our analysis of the data into two sub-periods, 1991-1999 and 2001-2004, based on the first fraud year for these 203 fraud companies.¹⁷ This allowed us to examine whether linkages between certain board governance characteristics and fraud occurrences continued subsequent to several changes in listing requirements related to board governance.

The overarching insight from the analysis of differences in board characteristics between fraud and no-fraud firms reported in the pages that follow is the lack of notable statistical differences in many of the governance characteristics that have been the focus of regulators, exchanges, and governance experts in the last several years. Many board of director characteristics appear to no longer differ significantly between fraud and no-fraud firms. And, in some instances, the noted differences are in directions opposite of what might be expected. Furthermore, while some characteristics were found to be statistically significant, many of those differences may lack any practical significance (i.e., they may be too small to matter). While we report whether there are statistical differences between fraud and no-fraud firm governance characteristics, we leave the evaluation of practical significance to the reader.

These collective observations raise the possibility that there are other more important governance characteristics or processes that affect the board's ability to assess the risk of financial statement fraud and oversee the implementation of procedures to prevent, deter, and detect fraud.

Full Board of Director Characteristics

Board Size and Independence

Table 11 contains information about the size and composition of the full board of directors. For each board characteristic in Table 11, we report the average for the fraud firms and the average for the similar set of no-fraud firms for the full sample and for each of the sub-periods examined (1991-1999 and 2001-2004). We also report the difference in averages between the fraud and no-fraud firms and report the results of our statistical tests by providing the p-value results when those differences between fraud and no-fraud firms were statistically significant.¹⁸ We conducted tests to determine whether the differences between fraud and no-fraud firms were statistically significant for both the full sample and the two sub-periods examined. Because the sample sizes for each of the sub-periods examined were much smaller than the full sample (especially for the 2001-2004 sub-period), the lack of statistical significance in tests of each sub-period may be due to lack of statistical power due to the smaller sample sizes. Thus, there may be differences in fraud and no-fraud firms that we cannot statistically observe due to size limitations in each sub-sample.

For all board characteristics where we report a p-value less than 0.10, the differences between fraud and no-fraud firms were interpreted to be statistically significant, consistent with most research. If no p-value is reported for a particular board characteristic, readers should conclude that fraud and no-fraud firms do not differ significantly in that board characteristic. We use this reporting technique for all tables where we report a statistical test of the difference between fraud and no-fraud firms.

As shown in Table 11, the average fraud firm had 7.7 directors on the board as compared to 8.0 directors for no-fraud firms. This difference was not statistically significant.

A large body of academic research finds that board and audit committee independence affects the effectiveness of board and audit committee oversight. We examined the relation between board independence and fraud. In analyzing board member independence, the following

¹⁷ While we studied AAERs issued by the SEC between 1998 and 2007, the calendar years in which these 203 frauds began were as early as 1991 and as late as 2004. In our sub-period analyses, we excluded frauds occurring in 2000 because the BRC Report was issued in 1999 and the stock exchanges made changes to their listing standards in 2000. Interestingly, though, more frauds began in 2000 ($n = 38$) than in any other year. Thus, we re-ran our analyses including the year 2000 in the post sub-period (i.e., we compared the 1991-1999 sub-period to the 2000-2004 sub-period as a sensitivity test). Our results were very similar to those reported in this monograph.

¹⁸ We tested whether there was a statistical difference between the fraud sample and the no-fraud sample for each variable. We report p-values for those differences that were statistically significant at below the 0.10 level (two-tailed).

definitions were used to categorize individual members of the board of directors into one of three categories:

- **Inside director** – A director who was also an officer or employee of the company or a subsidiary or an officer of an affiliated company.
- **Grey director** – A director who was a former officer or employee of the company, a subsidiary, or an affiliate; relative of management; professional advisor to the company; officer or owner of a significant supplier or customer of the company; interlocking director; officer or employee of another company controlled by the CEO or the company's majority owner; owner of an affiliate company; or creditor of the company.
- **Outside director** – A director who had no disclosed relationship (other than stock ownership) between the director and the company or its officers.

The average percentage of inside directors on the board for fraud firms was 30 percent as compared to 25 percent for no-fraud firms. This difference was statistically significant (p -value = 0.010). There was no significant difference in the percentage of outside directors for fraud firms (60 percent of the board) versus no-fraud firms (63 percent of the board).

There was no statistical difference between the two groups in the average percentage of grey directors. We were able to analyze the types of grey directors serving on the board of directors for 63 fraud and 63 no-fraud firms. The most common types of grey directors were former company officers, consultants, and outside legal counsel. Differences in types of grey directors serving on fraud and no-fraud firms

were not statistically significant, except for the difference in the percentage of grey directors who were relatives of management. Seven percent of fraud firm grey directors were relatives of management as compared to 18 percent for no-fraud firms (p -value = 0.086).

When board independence was examined for the two sub-periods (1991-1999 and 2001-2004), we found that the results for the 1991-1999 sub-period were generally consistent with the full sample results. That is, fraud firms had statistically more inside directors than no-fraud firms for 1991-1999 (p -value = 0.069). We also found that fraud firms were significantly more likely to have consultants as grey directors (32 percent) than were no-fraud firms (14 percent) (p -value = 0.034). However, the types of directors serving on boards in 2001-2004 were not statistically different for fraud and no-fraud firms. Thus, differences in board composition following the year 2000 may no longer be associated with the occurrence of fraudulent financial reporting.

We found a decrease in the percentage of inside and grey directors on boards between the two sub-periods for both fraud and no-fraud firms. For 1991-1999, 32 percent of the fraud firm boards were composed of inside directors as compared to only 25 percent of the fraud firm boards in 2001-2004. Consistent with that trend, the percentage of outside directors on fraud firm boards increased from 56 percent in the 1991-1999 sub-period to 67 percent in the 2001-2004 sub-period. This was consistent with a general shift in governance expectations over time that boards should have a greater percentage of outside directors.¹⁹

While fraud firms had significantly more inside directors than no-fraud firms in the 1991-1999 sub-period, this difference did not continue in the 2001-2004 sub-period.



¹⁹ We occasionally highlight shifts in overall trends by comparing findings from the 1991-1999 sub-period and findings from the 2001-2004 sub-period to provide insights about apparent trends over time. However, we have not performed formal statistical tests of noted differences between the two sub-periods.

Table 11. Board of Director Composition (Means)

	Full Sample					1991-1999 Sample					2001-2004 Sample				
	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value
Number of board members	203	7.7	8.0	-0.3		113	7.4	7.8	-0.4		52	7.9	8.0	-0.1	
Type of board member:															
Inside director	203	30%	25%	5%	.010	113	32%	28%	4%	.069	52	25%	23%	2%	
Grey director	203	10%	12%	-2%		113	12%	13%	-1%		52	8%	11%	-3%	
Outside director	203	60%	63%	-3%		113	56%	59%	-3%		52	67%	66%	1%	
Type of grey director:															
Former company officer	63	45%	57%	-12%		41	38%	52%	-14%		13	62%	54%	8%	
Relative of management	63	7%	18%	-11%	.086	41	9%	21%	-12%		13	4%	15%	-11%	
Consultant to company	63	25%	16%	9%		41	32%	14%	18%	.034	13	8%	8%	0%	
Outside legal counsel	63	15%	10%	5%		41	15%	10%	5%		13	19%	15%	4%	
Interlocking director	63	4%	4%	0%		41	5%	6%	-1%		13	4%	0%	4%	
Banker	63	0%	0%	0%		41	0%	0%	0%		13	0%	0%	0%	
Non-bank creditor	63	0%	0%	0%		41	0%	0%	0%		13	0%	0%	0%	
Officer of significant supplier or customer	63	2%	0%	2%		41	2%	0%	2%		13	4%	0%	4%	

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

Board Member Age, Tenure, and Expertise

We also gathered data about specific characteristics of individuals who served on the boards of the fraud and no-fraud firms. Results are reported in Table 12. The age of the average board member was approximately the same for the fraud and no-fraud firms (53.9 and 54.3 years of age, respectively).

Board members of fraud firms had served on the fraud company's board for 6.7 years on average before the first year of the fraud, which was statistically lower than the average of 7.7 years that directors of no-fraud firms served (p-value = 0.010). Thus, individuals serving on the boards of fraud firms had fewer years of experience on that board relative to individuals serving on no-fraud firm boards.

Surprisingly, on average, 11 percent of fraud firms' board members had accounting or finance expertise as compared to 9 percent for the no-fraud firms, a difference that was statistically significant (p-value = 0.052). More than half of the firms in both the fraud and no-fraud groups had at least one accounting or financial expert on the board (57

percent and 51 percent, respectively; these were not statistically different).

We also examined each board member's director experience by measuring how many other directorships were held by each individual director. The average board member served on one other corporate board (1.1 other directorships for individuals serving on fraud firm boards, 0.9 other directorships for no-fraud firms). Also, only 16 percent of fraud firms and 15 percent of no-fraud firms had boards where not one director served on any other corporate board. The difference between fraud and no-fraud firms was not statistically significant.

The results in the two sub-periods (1991-1999 and 2001-2004) were generally consistent with those reported above. Differences in director tenure were only statistically significant for the 1991-1999 sub-period (p-value = 0.029).

While the average tenure of fraud firm directors was significantly lower than for no-fraud firms, there may be little practical significance in this difference.



The length of board tenure was not statistically different between fraud and no-fraud firms for 2001-2004. Also, the average percentage of directors with accounting or finance expertise was higher for fraud firms (12 percent of the fraud firm board) than for no-fraud firms (8 percent of the no-fraud firm board) in the 1991-1999 sub-period (p-value = 0.017).

The percentage of boards with at least one director with accounting or financial expertise was greater in the latter period, for both fraud and no-fraud firms. Also, the chance

that a board would have no members who sit on the board of another firm was lower in the 2001-2004 sub-period, for both fraud and no-fraud firms.

Stock Ownership

We obtained data about the extent of company stock owned by directors and officers of the company. Stock ownership information was available for 196 of the 203 pairs of fraud and no-fraud firms. This information is reported in Table 13.

Table 12. Individual Director Characteristics (Means)

	Full Sample					1991-1999 Sample					2001-2004 Sample				
	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value
Director age	203	53.9	54.3	-0.4		113	54.2	53.6	0.6		52	53.6	55.3	-1.7	
Director tenure on board (in years)	203	6.7	7.7	-1.0	.010	113	6.7	7.8	-1.1	.029	52	6.9	8.0	-1.1	
Percentage of board members with accounting or finance expertise	203	11%	9%	2%	.052	113	12%	8%	4%	.017	52	13%	11%	2%	
Percentage of companies with at least one accounting or finance expert on board	203	57%	51%	6%		113	56%	47%	9%		52	67%	60%	7%	
Average number of other directorships held by board members	203	1.1	0.9	0.2		113	1.0	0.9	0.1		52	1.1	0.9	0.2	
Percentage of companies where not one member of the board held any other directorships	203	16%	15%	1%		113	19%	22%	-3%		52	13%	10%	3%	

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

Directors and officers owned a significant percentage of the stock of both the fraud and no-fraud firms (23 percent and 22 percent of outstanding common shares, respectively). On average, the highest-ranking officer owned 9 percent of the stock for both groups, and the largest stockholder among the officers and directors owned

There was no difference in stock ownership held by officers and directors between fraud and no-fraud firms.



15 percent of the stock for fraud firms as compared to 13 percent for no-fraud firms. None of the differences was statistically significant. The results for the two sub-periods are consistent with the full sample results.

Board Chair and CEO Age and Tenure

We gathered data about certain characteristics of the individuals serving as board chair and as CEO. The results are reported in Table 13. We collected data about the type of director serving as the chairman of the board for 182 of

the 203 pairs of fraud and no-fraud firms. The chairman of the board was an inside director in at least 70 percent of both fraud and no-fraud firms (75 percent of fraud firms and 70 percent of no-fraud firms had an inside director as chairman). This likely reflects the prevalence in the U.S. of assigning both the position of CEO and board chair to the same individual. Interestingly, the percentage of firms whose chairman of the board was a grey director was 11 percent for fraud firms as compared to 19 percent for no-fraud firms, a difference that is statistically significant (p -value = 0.039). That result was also statistically significant for the 1991-1999 sub-period (p -value = 0.046).

We found that, on average, the CEO was approximately 51 years old for both fraud and no-fraud firms. CEO tenure, which reflects the number of years the individual had served as CEO of the firm, was approximately 10 years for both fraud and no-fraud firms (9.4 years for fraud firms, 10.2 years for no-fraud firms). These results were not statistically different for the full sample. However, the average age of CEOs in the 2001-2004 sub-period was 49.9 years old for fraud firms as compared to 53.2 years old for no-fraud firms. The difference was statistically significant (p -value = 0.051). Similarly, the average CEO tenure was statistically lower for fraud firms relative to no-fraud firms for the 2001-2004 sub-period (p -value = 0.098).

Table 13. Stock Ownership by Directors and Officers; Board Chair and CEO Traits
(Means)

	Full Sample					1991-1999 Sample					2001-2004 Sample				
	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value
Stock owned by directors and officers	196	23%	22%	1%		107	24%	23%	1%		52	18%	21%	-3%	
Stock owned by the highest-ranking officer	196	9%	9%	0%		107	11%	10%	1%		52	7%	7%	0%	
Stock owned by the largest holder among officers and directors	196	15%	13%	2%		107	17%	14%	3%		52	12%	13%	-1%	
Type of board chair:															
Inside director	182	75%	70%	5%		99	80%	76%	4%		48	64%	56%	8%	
Grey director	182	11%	19%	-8%	.039	99	7%	16%	-9%	.046	48	17%	25%	-8%	
Outside director	182	14%	11%	3%		99	13%	8%	5%		48	19%	19%	0%	
CEO age (in years)	203	50.7	51.4	-0.7		113	51.7	50.6	1.1		52	49.9	53.2	-3.3	.051
CEO tenure (in years)	203	9.4	10.2	-0.8		113	10.1	10.2	-0.1		52	8.3	11.1	-2.8	.098

Note: A p -value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

Number of Board Meetings Per Year

Boards of fraud firms met significantly more often than boards of no-fraud firms. This difference may reflect the fact that fraud firms often experienced financial stress preceding the fraud period, which precipitated additional board meetings.

We gathered data about the number of board meetings held during the year. That information is reported in Table 14. Perhaps surprisingly, boards of fraud firms met significantly more often (7.7 meetings per year) than boards of no-fraud firms (6.6 meetings per year)

(p-value = 0.001). There was no difference between fraud and no-fraud firms in the average number of board meetings for the 1991-1999 sub-period, but fraud firms had statistically more board meetings than no-fraud firms for the 2001-2004 sub-period (p-value = 0.005). These differences may reflect the fact that fraud firms often experienced financial stress, perhaps precipitating additional board meetings.

Director Turnover

As shown in Table 14, the number of directors who left the board during the first fraud year was generally quite small (an average of 0.2 directors left fraud firm boards as compared to an average of 0.4 directors leaving no-fraud boards), but this difference was statistically significant (p-value = 0.045). Fifteen percent of fraud firms had a director leave the board during the first fraud year, while 25 percent of the no-fraud firms had a director leave the board during the comparable year, and this difference was statistically significant (p-value = 0.018). Thus, during the first fraud year, director turnover was lower for fraud firms than for no-fraud firms.

During the 1st fraud year, director turnover was lower for fraud firms than for no-fraud firms.

There was no difference between fraud and no-fraud firms in the number of directors who left the board during the first fraud year in either of the two sub-periods. However, during the 1991-1999 sub-period, 13 percent of fraud and 23 percent of no-fraud firms had a director leave the board during the first fraud year, a difference that was statistically significant (p-value = 0.058). During the 2001-2004 sub-period, the same percentage (25 percent) of fraud and no-fraud firms had a director leave the board during the first fraud year.

Blockholders

Often an individual or entity owns a significant portion of a company's common shares. These are generally referred to as "blockholders." Consistent with corporate governance literature, we defined an outside blockholder as an individual or an entity that owned five percent or more of the firm's stock. We gathered data about the extent of blockholder ownership, which also is reported in Table 14.

We found that approximately two-thirds of both fraud and no-fraud firms had an outside blockholder who was not a director (67 percent of fraud firms and 74 percent of no-fraud firms). Also, 23 percent of fraud and 24 percent of no-fraud firms had an outside blockholder who was a director.

During the 1991-1999 sub-period, fraud companies were significantly less likely to have an outside blockholder who was not a director. Fifty-eight percent of fraud firms had a blockholder who was not a director, while 75 percent of no-fraud firms had a blockholder who was not a director. That difference was statistically significant (p-value = 0.009). That difference did not continue for the 2001-2004 sub-period.

Internal Audit

Requirements to disclose the existence of an internal audit function did not exist for the entire period of the study. We identified disclosures (some were voluntary) of an internal audit function for approximately 30 percent of both the fraud and no-fraud firms during the full sample time period. Disclosure of an internal audit group was much more likely in the 2001-2004 sub-period than in the 1991-1999 sub-period for both fraud and no-fraud firms. Less than 20 percent of firms voluntarily disclosed having an internal audit function in the 1991-1999 sub-period, while about 50 percent of firms disclosed having an internal audit function in the 2001-2004 sub-period.

Table 14. Other Full Board and Governance Characteristics (Means)

	Full Sample					1991-1999 Sample					2001-2004 Sample				
	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value
Number of board meetings per year	183	7.7	6.6	1.1	.001	99	7.6	6.6	1.0		49	8.0	6.2	1.8	.005
Number of directors who left the board during the first fraud year	203	0.2	0.4	-0.2	.045	113	0.2	0.4	-0.2		52	0.4	0.3	0.1	
Percentage of companies that had a director leave during the first fraud year	203	15%	25%	-10%	.018	113	13%	23%	-10%	.058	52	25%	25%	0%	
Percentage of companies w/ an outside blockholder who was not a director	196	67%	74%	-7%		107	58%	75%	-17%	.009	52	77%	77%	0%	
Percentage of companies w/ an outside blockholder who was a director	196	23%	24%	-1%		107	21%	19%	2%		52	21%	29%	-8%	
Percentage of companies disclosing existence of an internal audit function	203	32%	29%	3%		113	19%	18%	1%		52	50%	48%	2%	

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

Audit Committee Characteristics

Audit committees are generally responsible for the board's oversight of the financial reporting process. We gathered extensive information about selected audit committee characteristics. Among the set of 203 pairs of fraud and no-fraud firms, 193 fraud firms had an audit committee and 199 no-fraud firms had an audit committee. So that we could continue to have a set of fraud companies similarly paired with no-fraud companies, we reduced the size of the sample for our analysis of audit committee characteristics to 188 pairs of fraud and no-fraud firms that both had audit committees. This same reasoning applies to the other variables where the sample size was less than 203.

Existence, Size, Independence, and Meeting Frequency

As reported in Table 15, 95 percent of fraud firms maintained an audit committee, while 98 percent of no-fraud firms maintained an audit committee (the difference was statistically significant (p-value = 0.066)). The average

size of audit committees for both fraud and no-fraud firms was about three members. Consistent with the Blue Ribbon Committee (BRC) Report recommendation that audit committees have at least three members (a recommendation subsequently adopted by the stock exchanges) 70 percent of the fraud firms and 79 percent of no-fraud firms maintained an audit committee with at least three members. The difference was statistically significant (p-value = 0.044).

On average, the audit committees of fraud firms had more inside directors (5 percent of the audit committee membership) than the audit committees of no-fraud firms (2 percent), and that difference was statistically significant (p-value = 0.008). Likewise, 87 percent of fraud firms had no insiders on the audit committee, versus 94 percent of no-fraud firms. This difference was significant (p-value = 0.014). Sixty-four percent of the fraud firms and 67 percent of no-fraud firms maintained an audit committee that was composed entirely (100 percent of the audit committee membership) of outside, independent directors. This difference was not statistically significant.

Few differences existed between audit committees of fraud firms and no-fraud firms.

In both sub-periods, there were no differences between fraud and no-fraud firms in audit committee existence or average audit committee size. Only in the 1991-1999 sub-period, the percentage of fraud firms with an audit committee composed of at least three members was significantly lower than for no-fraud firms (p-value = 0.050).

Relating to audit committee independence, the only statistically significant difference between fraud and no-fraud firms in the sub-periods was that fraud firms had more inside directors than no-fraud firms, but this result only held for the 1991-1999 sub-period (8 percent and 3

percent, respectively (p-value = 0.037)). Likewise, no-fraud firms in the 1991-1999 sub-period were more likely to have no insiders on the audit committee (p-value = 0.048). Audit committees were more independent in the 2001-2004 sub-period than in the 1991-1999 sub-period for both fraud and no-fraud firms.

Finally, the average number of audit committee meetings per year was 3.5 for fraud firms and 3.7 for no-fraud firms, and about half of all audit committees met four or more times per year. There were no significant differences between fraud and no-fraud firms in the full sample or in either sub-period.

Table 15. Audit Committee Existence, Size, Independence, and Meeting Frequency (Means)

	Full Sample					1991-1999 Sample					2001-2004 Sample				
	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value
Existence of an audit committee	203	95%	98%	-3%	.066	113	92%	96%	-4%		52	98%	100%	-2%	
Number of individuals on audit committee	188	3.1	3.2	-0.1		100	3.0	3.2	-0.2		51	3.4	3.4	0	
Percentage of companies with an audit committee composed of at least three members	188	70%	79%	-9%	.044	100	61%	74%	-13%	.050	51	92%	92%	0%	
Type of audit committee board member:															
Inside director	188	5%	2%	3%	.008	100	8%	3%	5%	.037	51	3%	1%	2%	
Grey director	188	11%	11%	0%		100	13%	15%	-2%		51	8%	7%	1%	
Outside director	188	84%	87%	-3%		100	79%	82%	-3%		51	89%	92%	-3%	
Percentage of companies with an audit committee consisting of no inside directors	188	87%	94%	-7%	.014	100	80%	90%	-10%	.048	51	96%	98%	-2%	
Percentage of companies whose audit committee consisted entirely of outside directors	188	64%	67%	-3%		100	53%	56%	-3%		51	76%	78%	-2%	
Number of audit committee meetings per year	170	3.5	3.7	-0.2		93	2.6	2.9	-0.3		47	5.1	4.9	0.2	
Percentage of companies where audit committee met at least four times per year	170	45%	51%	-6%		93	23%	31%	-8%		47	81%	85%	-4%	

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

Financial Expertise and Governance Expertise

We also gathered data about the expertise of individuals who served on the audit committee. A board member was coded as having accounting or finance expertise if he or she had current or prior experience as a CFO, CPA, controller, or vice president of finance.

Results are provided in Table 16. On average, 14 percent of audit committee members for fraud and 10 percent for

Surprisingly, the percentage of individuals on audit committees with finance or accounting expertise was significantly higher for fraud firms than no-fraud firms for the full sample and the 1991-1999 sub-period.



no-fraud firms had accounting or finance expertise. That difference was statistically significant for the full sample (p-value = 0.053) and for the 1991-1999 sub-period (p-value = 0.006). Similarly, in the 1991-1999 sub-period, 33 percent of the fraud firms and only 20 percent of no-fraud firms had at least one audit committee member with accounting or finance expertise, a significant difference (p-value = 0.037). Both

fraud and no-fraud firms were more likely to have at least one financial expert on the audit committee in more recent years.

Table 16. Other Audit Committee Characteristics (Means)

	Full Sample					1991-1999 Sample					2001-2004 Sample				
	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value
Percentage of audit committee members with accounting or finance expertise	188	14%	10%	4%	.053	100	15%	7%	8%	.006	51	16%	16%	0%	
Percentage of audit committees with at least one accounting or finance expert	188	34%	28%	6%		100	33%	20%	13%	.037	51	43%	43%	0%	
Average number of director positions held by audit committee members on other company boards	188	1.2	1.1	.1		100	1.2	1.0	.2		51	1.2	1.0	.2	
Type of audit committee chair:															
Inside director	43	2%	0%	2%		17	6%	0%	6%		16	0%	0%	0%	
Grey director	43	5%	9%	-4%		17	6%	6%	0%		16	6%	19%	-13%	
Outside director	43	93%	91%	2%		17	88%	94%	-6%		16	94%	81%	13%	
Percentage of audit committees whose chair had accounting or finance expertise	43	21%	14%	7%		17	18%	0%	18%	.070	16	19%	31%	-12%	
Percentage of companies that included audit committee report or charter in proxy	203	32%	35%	-3%		113	3%	1%	2%		52	81%	94%	-13%	.038
Percentage of audit committee members who joined audit committee after CEO appointed	188	77%	75%	2%		100	81%	73%	8%		51	73%	75%	-2%	
Percentage of audit committees whose chair joined board after CEO appointed	43	67%	67%	0%		17	59%	59%	0%		16	81%	88%	-7%	

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

Because experience serving as a director might impact an individual's effectiveness as a board member, we collected data about the average number of director positions held on other company boards (other than the relevant fraud or no-fraud firms) by audit committee members. We found that average was similar for fraud and no-fraud firms (1.2 and 1.1 other directorships held by audit committee members for fraud and no-fraud firms, respectively).

Audit Committee Chair, Charter, and Committee Appointment Process

The overwhelming majority of audit committee chairs were outside directors (93 percent for fraud and 91 percent for no-fraud firms, respectively; difference not statistically significant).²⁰ Overall, relatively few audit committee chairs had accounting or finance expertise, with no significant difference between fraud and no-fraud firms. However, for the 1991-1999 sub-period, 18 percent of the audit committee chairs of fraud firms and zero percent of audit committee chairs of no-fraud firms had accounting or finance expertise; this difference was statistically significant (p-value = 0.070).

Thirty-two percent of the fraud and 35 percent of no-fraud firms in the full sample included the audit committee report or charter in the proxy statement (difference not statistically significant). Only three percent of fraud firms and one percent of no-fraud firms included an audit committee report or charter in the proxy during 1991-1999. However, during the 2001-2004 sub-period, 81 percent of fraud firms and 94 percent of no-fraud firms included an audit committee report or charter in the proxy statement. The difference during the 2001-2004 sub-period between fraud and no-fraud firms was statistically different (p-value = 0.038). Charters became much more common in proxy statements as a result of a BRC Report recommendation that was adopted by the stock exchanges.

In the 2001-2004 sub-period, fraud firms were less likely than no-fraud firms to include an audit committee charter or report in the proxy.

We also gathered data on whether audit committee members, including the committee chair, joined the board after the current CEO (at the time the fraud began) was appointed. To the extent that a greater percentage of committee members joined the board

after the current CEO was appointed, the current CEO may have played a greater role in their appointment and, as a result, may have had greater influence over the respective

board committee. For both fraud and no-fraud firms, at least two-thirds of audit committee members and chairs were appointed after the current CEO assumed his or her position, with differences not statistically different in the full sample or either sub-period.

Compensation Committee Characteristics

We gathered information about several characteristics of the companies' compensation committees. The analysis of this information is provided in the sections that follow. We analyzed compensation committees because compensation, especially executive compensation, can affect management's motivation to commit fraud.

Existence, Size, Independence, and Meeting Frequency

As reported in Table 17, fraud firms were significantly less likely to have maintained a compensation committee than no-fraud firms. While 88 percent of fraud firms maintained a compensation committee, 94 percent of no-fraud firms maintained a compensation committee. That difference was significant (p-value = 0.058). The average compensation committee size was 3.1 members for fraud firms and 3.2 members for no-fraud firms. Sixty-nine percent of the fraud and 75 percent of no-fraud firms maintained a compensation committee with at least three members. These differences were not statistically significant.

A large majority of both fraud and no-fraud firms had compensation committees, and there were relatively few differences in the characteristics of those committees between fraud and no-fraud firms.

As for the composition of compensation committees, 85 percent of fraud firm compensation committee membership and 88 percent of no-fraud firm compensation committee membership consisted of outside directors. This difference was not statistically significant. Eighty-nine percent of the fraud firms and 90 percent of no-fraud firms had a compensation committee with no insiders; this difference was not statistically significant. Also, 66 percent of the fraud and 70 percent of no-fraud firms maintained a compensation committee that was composed entirely of outside, independent directors. This difference was not statistically significant.

²⁰ Only 43 pairs of firms disclosed the name of the chair of the audit committee. Given the small sample size, results related to the audit committee chair should be interpreted with caution.

Table 17. Compensation Committee Existence, Size, Independence, and Meeting Frequency (Means)

	Full Sample					1991-1999 Sample					2001-2004 Sample				
	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value
Existence of a compensation committee	203	88%	94%	-6%	.058	113	84%	90%	-6%		52	94%	98%	-4%	
Number of individuals on compensation committee	170	3.1	3.2	-0.1		88	3.0	3.1	-0.1		48	3.3	3.1	0.2	
Percentage of companies with a compensation committee composed of at least three members	170	69%	75%	-6%		88	69%	76%	-7%		48	77%	67%	10%	
Type of compensation committee member:															
Inside director	170	4%	3%	1%		88	4%	4%	0%		48	6%	3%	3%	
Grey director	170	11%	9%	2%		88	12%	10%	2%		48	8%	8%	0%	
Outside director	170	85%	88%	-3%		88	84%	86%	-2%		48	86%	89%	-3%	
Percentage of companies with a compensation committee consisted of no inside directors	170	89%	90%	-1%		88	90%	88%	2%		48	85%	92%	-7%	
Percentage of companies with compensation committee consisted entirely of outside directors	170	66%	70%	-4%		88	64%	69%	-5%		48	71%	69%	2%	
Number of compensation committee meetings per year	153	3.3	3.2	0.1		80	3.1	3.0	0.1		46	3.5	3.4	0.1	
Percentage of companies where compensation committee met at least two times per year	153	73%	74%	-1%		80	70%	74%	-4%		46	78%	70%	8%	

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

The average number of compensation committee meetings per year was 3.3 for fraud firms and 3.2 for no-fraud firms. Also, 73 percent of fraud firm compensation committees and 74 percent of no-fraud firm compensation committees met at least two times per year. Neither difference was significant.

While for the full sample, fraud firms were less likely to have had a compensation committee, this difference between fraud and no-fraud firms for each of the two sub-periods was not statistically significant. In both sub-periods, there were no other significant differences between fraud and no-fraud firms with respect to compensation committee characteristics in Table 17. Finally, unlike the case for

audit committees, there was no notable improvement in compensation committee independence across the two sub-periods.

Financial Expertise and Governance Expertise

Because components of executive compensation are sometimes based on financial statement outcome measures (e.g., bonus based on earnings), we examined the extent to which compensation committees are composed of individuals with accounting or finance expertise. Table 18 reports that, on average, nine percent of compensation committee members for fraud firms and five percent of

no-fraud firms' compensation committee members had accounting or finance expertise. Also, 22 percent of the fraud firms and 14 percent of no-fraud firms had at least one member with accounting or finance expertise on the compensation committee. Both differences were statistically significant (p-values = 0.012 and 0.034, respectively). The average number of other director positions held by compensation committee members was similar for fraud and no-fraud firms (1.3 and 1.2, respectively).

Similar to the full sample results, the percentage (10 percent) of compensation committee members having accounting or finance expertise was statistically higher for fraud firms than the percentage (4 percent) for no-fraud firms in the 1991-1999 sub-period (p-value = 0.018). Similarly, in the 1991-1999 sub-period, 23 percent of fraud firms had at least one accounting or finance expert on the compensation committee, versus 11 percent of no-fraud firms (p-value = 0.045). The differences between the fraud and no-fraud firms in the 2001-2004 sub-period related to accounting and finance expertise on the compensation committee were not significant. There was no statistically significant difference between the fraud and the no-fraud firms in the average number of other directorships held by compensation committee members in either sub-period.

Surprisingly, the percentage of individuals on compensation committees with finance or accounting expertise was significantly **higher** for fraud firms than no-fraud firms for the full sample and the **1991-1999** sub-period.



Compensation Committee Chair and Committee Appointment Process

The overwhelming majority of compensation committee chairs were outside directors (89 percent for fraud and 97 percent for no-fraud firms; not statistically significant).²¹ Virtually none of the compensation committee chairs had accounting or finance expertise. This finding is interesting given the accounting and financial implications of firm compensation practices and the associated fraud risk that certain compensation practices may entail.

Seventy-five percent of the fraud firm compensation committee members joined the board after the CEO was appointed as compared to 70 percent for no-fraud firms. That difference was not statistically significant. There also was no statistical difference between fraud and no-fraud firms in whether the compensation committee chair joined the board after the CEO assumed his or her position.

There was no statistically significant difference between the fraud and no-fraud firms, in either sub-period, in the percentage of outside directors serving as chair of the compensation committee or in the percentage of committee chairs with accounting or finance expertise. Compensation committee members of fraud firms were significantly more likely than no-fraud firms to have joined the board after the CEO assumed his or her position in the 1991-1999 sub-period (80 percent for fraud firms compared to 67 percent for no-fraud firms (p-value = 0.031)). This result did not continue in the 2001-2004 sub-period. There was no difference, in either sub-period, between fraud and no-fraud firms as it relates to the compensation committee chair joining after the CEO was appointed.

²¹ Only 38 pairs of firms disclosed the name of the chair of the compensation committee. Given the small sample size, results related to the compensation committee chair should be interpreted with caution.

Table 18. Other Compensation Committee Characteristics (Means)

	Full Sample					1991-1999 Sample					2001-2004 Sample				
	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value
Percentage of compensation committee members with accounting or finance expertise	170	9%	5%	4%	.012	88	10%	4%	6%	.018	48	10%	6%	4%	
Percentage of compensation committees w/ at least one accounting or finance expert	170	22%	14%	8%	.034	88	23%	11%	12%	.045	48	27%	15%	12%	
Average number of director positions held by compensation committee members on other company boards	170	1.3	1.2	0.1		88	1.3	1.3	0.0		48	1.3	1.0	0.3	
Type of compensation committee chair:															
Inside director	38	3%	0%	3%		15	0%	0%	0%		13	8%	0%	8%	
Grey director	38	8%	3%	5%		15	13%	0%	13%		13	0%	8%	-8%	
Outside director	38	89%	97%	-8%		15	87%	100%	-13%		13	92%	92%	0%	
Percentage of compensation committees whose chair had accounting or finance expertise	38	0%	3%	-3%		15	0%	0%	0%		13	0%	8%	-8%	
Percentage of compensation committee members who joined compensation committee after CEO appointed	170	75%	70%	5%		88	80%	67%	13%	.031	48	67%	70%	-3%	
Percentage of compensation committees whose chair joined board after CEO appointed	38	61%	68%	-7%		15	67%	53%	14%		13	62%	77%	-15%	

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

Board Leadership Issues and Related Party Transactions

Board Leadership Issues, Appointment Process, and Personal Relationships²²

As reported in Table 19, and consistent with the general practice in the U.S., the CEO also served as chairman of the board in more than two-thirds of both fraud and no-fraud firms. There was no statistically significant difference between fraud and no-fraud firms. We also examined the role of the company's founder in the firm's governance

process. The CEO was also the company's founder for 27 percent of fraud firms as compared to 22 percent for no-fraud firms; however, that difference was not statistically significant.

The founder was on the board of directors for 42 percent of the fraud firms as compared to 36 percent for no-fraud firms, but the difference was not statistically significant. Approximately 80 percent of directors joined the board after the CEO assumed his or her position, and there was no statistically significant difference between the fraud and no-fraud firms. Finally, family relationships among

²² We attempted to gather data on nominating committee characteristics as well. However, we only had 28 pairs of observations with nominating committee data. Given this small sample, we chose not to present any data. Notwithstanding this fact, fraud companies were less likely to have a nominating committee (p-value = 0.056), although this result only held in the 1991-1999 sub-period.

non-employee directors and company officers existed for 6 percent of the fraud companies as compared to 13 percent for the no-fraud companies. That difference was statistically

significant (p-value = 0.012) for the full sample and for the 2001-2004 sub-period (p-value = 0.008).

Table 19. Board Leadership Issues (Means)

	Full Sample					1991-1999 Sample					2001-2004 Sample				
	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud – No-Fraud	p-value
Percentage of companies where CEO/President and board chair were the same individual	192	70%	68%	2%		105	70%	70%	0%		50	66%	58%	8%	
Percentage of companies where CEO/President and the company founder were the same individual	203	27%	22%	5%		113	29%	23%	6%		52	19%	19%	0%	
Percentage of companies where the company founder served on the board	203	42%	36%	6%		113	42%	36%	6%		52	35%	37%	-2%	
Percentage of board members who joined board after CEO appointed	203	80%	77%	3%		113	82%	77%	5%		52	77%	77%	0%	
Percentage of companies where board had at least one non-employee director related to an officer of the company	203	6%	13%	-7%	.012	113	8%	11%	-3%		52	2%	17%	-15%	.008

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

Related Party Transactions

As shown in Table 20, fraudulent financial reporting was more likely when a firm disclosed related party transactions. We found that 79 percent of fraud firms had disclosed a related party transaction in the proxy statement, as compared to 71 percent for no-fraud firms. That difference was statistically significant (p-value = 0.065). However, that difference was not statistically significant for either sub-period.

For fraud firms, 26 percent of the related party transactions involved the founder, whereas 22 percent of the related party transactions involved the founder for the no-fraud firms. This

difference was not statistically significant. Related party transactions involving the founder occurred less often in recent years.

Just over 50 percent of the related party transactions involved the CEO, although there was no difference between the fraud and no-fraud firms on an overall basis or in either of the two sub-periods examined. Related party transactions involving other senior officers or involving board members occurred approximately 50-60 percent of the time, but there were no significant differences between fraud and no-fraud firms.

Although over **70%** of fraud and no-fraud firms disclosed related party transactions, fraud firms were significantly more likely to have disclosed a related party transaction than no-fraud firms.



Table 20. Related Party Transactions (Means)

	Full Sample					1991-1999 Sample					2001-2004 Sample				
	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value	# of Pairs of Firms	Fraud Sample	No-Fraud Sample	Fraud — No-Fraud	p-value
Percentage of companies with related party transactions disclosed in the proxy	203	79%	71%	8%	.065	113	75%	70%	5%		52	87%	77%	10%	
Percentage of disclosed related party transactions that involved the founder	117	26%	22%	4%		60	28%	27%	1%		35	14%	11%	3%	
Percentage of disclosed related party transactions that involved the CEO	117	51%	54%	-3%		60	58%	53%	5%		35	31%	46%	-15%	
Percentage of disclosed related party transactions that involved other senior officers	117	52%	50%	2%		60	47%	47%	0%		35	51%	51%	0%	
Percentage of disclosed related party transactions that involved members of the board of directors	117	61%	66%	-5%		60	67%	67%	0%		35	51%	60%	-9%	

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

Issues Related to the External Auditor

Auditors Associated With Fraud Companies

We obtained information from the COMPUSTAT® database about the auditor who issued the audit opinion on the last set of audited financial statements issued during the fraud period to identify the auditor responsible for issuing the audit opinion on those fraudulently misstated financial statements. We were able to obtain information about the nature of the auditor's opinion for the last fraudulently issued financial statements for 223 of the 347 fraud firms. We were able to obtain auditor data for 247 of the no-fraud firms.²³

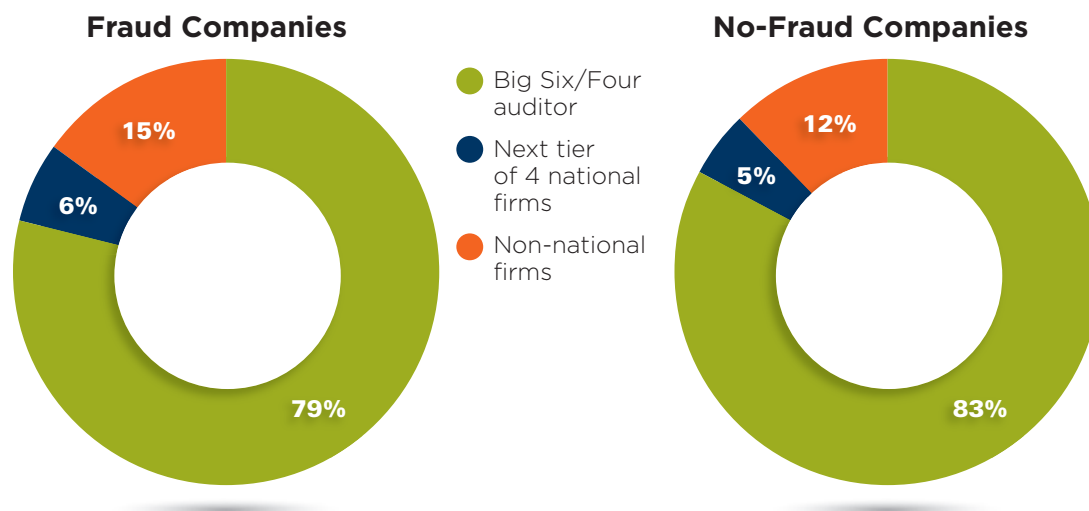
As reported in the pie charts in Table 21, we found that the Big Six/Four audited 79 percent of the fraud companies (177 of the 223 fraud companies with available auditor information) in the last year of the fraud period. The next tier of four national audit firms beyond the Big Six/Four²⁴ audited 6 percent (n = 13) of the fraud firm financial statements, while the remaining 15 percent (n = 33) of fraud firm financial statements were audited by non-national firms. These percentages were similar to the mix of auditor type for the 247 no-fraud firms where we could locate auditor information.

We also reviewed information about the nature of the auditor's opinion on the last set of financial statements

that were fraudulently misstated to determine whether the auditor's report contained any modifications or qualifications. For the 223 fraud companies where we were able to obtain audit opinion data from COMPUSTAT®, we determined that 97 of those 223 audit reports (43 percent) contained unqualified auditor opinions with no explanatory language. An additional 125 of the 223 fraud companies' financial statements (56 percent) contained an auditor's report that included an unqualified opinion along with explanatory language. Only one of the 223 auditor opinions was qualified, and no audit opinion was issued for another of the 223 fraud companies examined (collectively 1 percent).

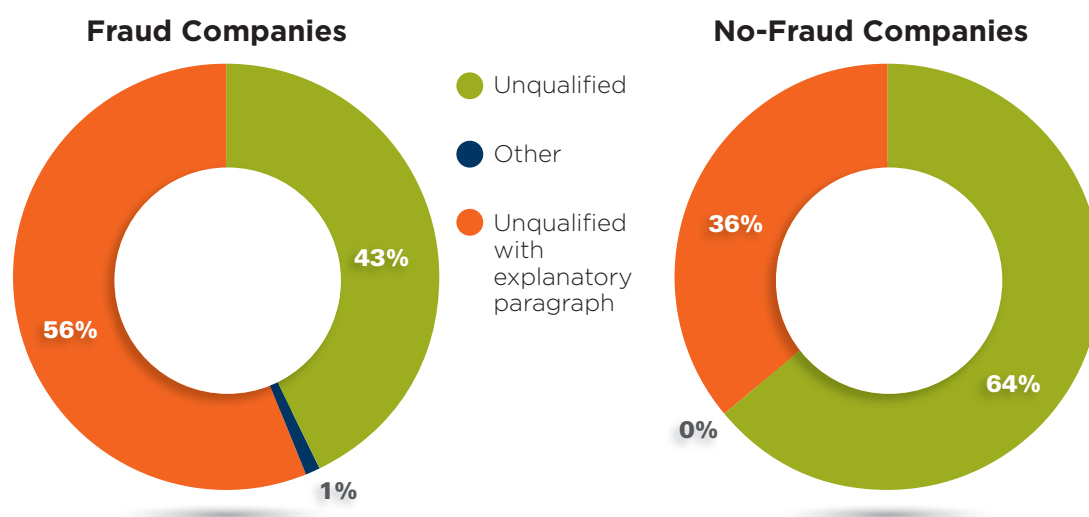
²³ Our intent was not to compare the nature of audit opinion for a fraud firm and its similar no-fraud firm. Instead, we were interested in comparing auditor characteristics as a whole for each group (fraud firms and no-fraud firms). Thus, we did not need equal numbers of fraud and no-fraud firms for our auditor analysis.

²⁴ The next tier of four national audit firms is Grant Thornton LLP, BDO Seidman LLP, Crowe Chizek and Company LLC, and McGladrey & Pullen LLP.

Table 21. Size of Audit Firms Issuing Reports

These results differ from the no-fraud firms. The majority of no-fraud firms (64 percent (n = 158) of the 247 no-fraud firms where we had auditor report information) received unqualified audit opinions without any explanatory language, while the remaining 36 percent (n = 88) received unqualified opinions accompanied by explanatory language.

No audit opinion was issued for one of the 247 no-fraud companies examined. See the pie charts in Table 22. More research is needed to examine the nature of the audit report modification and to determine if there is any relation between the report modification and the nature of the fraud technique employed.

Table 22. Types of Auditor Reports

Analysis of Auditor Reports on Internal Control Over Financial Reporting

Because of the significant time lag between the occurrence of fraud and the subsequent issuance by the SEC of an AAER, only a small percentage of the fraud companies had fraud periods extending into 2004 or later, the period when SOX Section 404 internal control audits became mandatory for accelerated filers (effective for fiscal years ended November 15, 2004 or later). We identified 24 fraud companies (40 company years, as some companies had fraud in 2004, 2005, and/or 2006) with fraud periods including 2004 or later that might be subject to the Section 404 requirements, if the company was large enough to be an accelerated filer. Of these 40 company years, 18 did not appear to involve accelerated filers or the company failed to issue a 10-K. This leaves 22 company years for analysis. While we do provide this analysis, we caution readers about drawing conclusions about the impact of Section 404 based on this very small sample size.

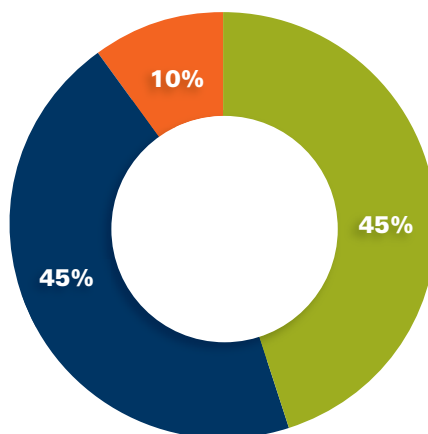
In 10 of the 22 cases (45 percent), the Section 404 opinion indicated that the company had effective internal control over financial reporting (see the pie chart in Table 23). Thus, the auditor concluded that controls were effective, even though the company was later determined to have fraudulently misstated its financial statements for this period. In another 10 cases (45 percent), the Section 404 opinion was adverse, indicating ineffective controls.

However, in nine of these instances, the auditor's report cited a financial restatement that had already occurred, and in the remaining case, the auditor cited amendments to the original 10-K that were filed immediately after the original 10-K filing (due to auditor-detected issues). Thus, in all of the instances where the auditor concluded that controls were ineffective, there had already been a financial restatement or other amendment of the 10-K. Finally, in two cases (10 percent), the original Section 404 opinion indicated effective controls, but the opinion was subsequently restated to indicate ineffective controls. In both cases, a company financial restatement apparently triggered the restatement of the auditor's Section 404 opinion.

Overall, the analysis of Section 404 opinions for the 22 company years with available data indicates that the opinions indicated effective controls unless there had already been a financial restatement or amended 10-K. Thus, it does not appear that adverse Section 404 opinions were diagnostic of future misstatements, but rather simply reflected already detected misstatements that resulted in financial restatements or amended 10-Ks. However, the small sample size provides a very limited perspective about Section 404 providing fraud detection capability. Further research is warranted to determine whether there are ways to improve auditors' ability to detect internal control weaknesses that may lead to fraud in the future. Additionally, we are unable to assess whether Section 404 serves as a deterrent for management to engage in fraudulent financial reporting.

Table 23. Analysis of Section 404 Internal Control Opinions
(n = 22 company years)

- Section 404 opinion indicated effective controls
- Section 404 opinion indicated ineffective controls
- Original Section 404 opinion indicating effective controls was later restated to indicate ineffective controls



Note: In all cases where the Section 404 opinion indicated ineffective controls, the opinion cited a financial restatement or other amendment of the 10-K.

Alleged Auditor Involvement in the Fraud

In 23 percent of the cases (78 of the 342 fraud cases where the AAERs named individuals), the external auditor was named in an AAER. In five of these 78 fraud cases, two different audit firms were named. Thus, the data in Table 24 describe the accusations against a total of 83 audit firms.²⁵

As indicated in Table 24, out of the 83 cases where the auditor was named, 32 audit firms were charged with violating antifraud statutes (either Rule 10(b)-5 of the 1934 Securities Exchange Act or charged with aiding and abetting others in a violation of Rule 10(b)-5). Of those 32 cases, 11 involved a national audit firm (Big Six/Four or the next tier of four national audit firms) and 21 involved a non-national audit firm.

In the remaining 51 cases where the auditor was named, the auditor was accused of violating Rule 102(e) of the 1934 Securities Exchange Act mostly for performing an alleged substandard audit. Out of these 51 cases, 22 involved a national audit firm, while 29 involved a non-national audit firm.

The relative infrequency of enforcement actions against national firms relative to non-national firms is particularly striking, given that most of the fraud firms were audited by a national audit firm. Table 21 indicates that 85 percent of the fraud companies were audited by a national audit firm, yet only 40 percent of the enforcement actions (33 of 83 enforcement actions) were against a national audit firm (see Table 24).

Table 24. Frequency of Audit Firms Named in Enforcement Actions

SEC Alleged Audit Firm Violation	Auditors Named in AAER	Number of National Firms Named	Number of Non-National Firms Named
Anti-fraud statutes	32	11	21
Non-fraud statutes including Rule 102(e)	51	22	29
Total	83	33	50

Note: There were 78 fraud cases in which the SEC named an individual at an audit firm or the audit firm itself in the AAER. For five of the 78 cases, the SEC named individuals at two different audit firms or two different audit firms.

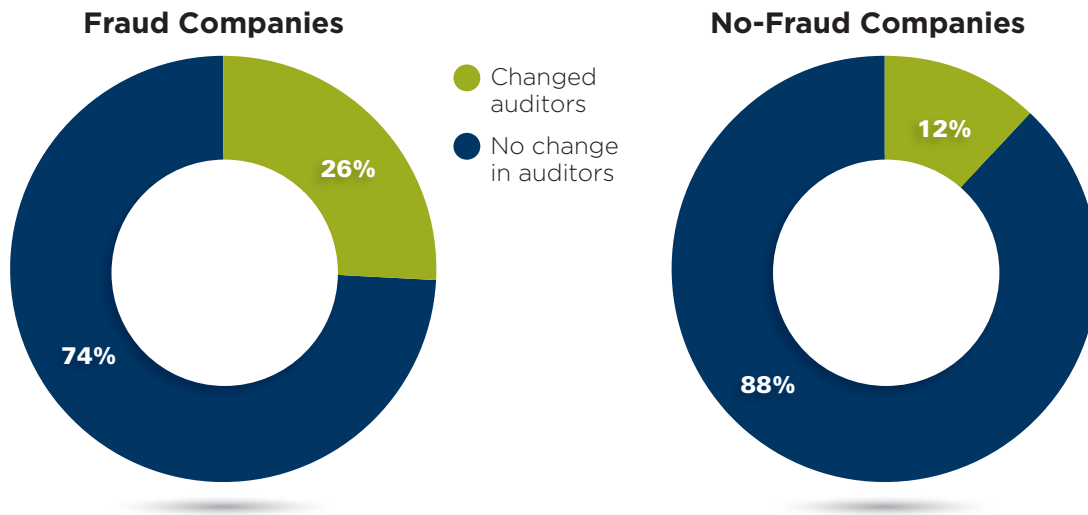
Auditor Changes During Fraud Period

To determine whether fraud companies changed auditors just prior to or during the fraud period, we gathered COMPUSTAT® data to compare the name of the auditor associated with the last clean financial statements to the name of the auditor who issued an audit report on the last fraudulent financial statements. We were able to make that comparison for 184 similarly paired fraud and no-fraud firms. As reflected in the pie charts in Table 25, we found that 47 of the 184 fraud firms (26 percent) changed auditors between the period that the company issued the last clean financial statements and the period the company issued the last set of fraudulent financial statements. In contrast, only 22 of the 184 no-fraud firms (12 percent) switched auditors over that same time frame. This difference was statistically significant (p -value < 0.01).

Twenty-six percent of fraud companies switched auditors between the issuance of the last clean financial statements and the last set of fraudulently misstated financial statements, while 12% of no-fraud firms switched auditors during the same time period.

Most (60 percent) of the fraud firm auditor switches occurred during the fraud period, while the remaining 40 percent of fraud firm auditor switches occurred at the end of the last clean financial statement period (i.e., just before the fraud period began). Of the 47 instances of fraud companies switching auditors, 35 companies (74 percent) switched from one national audit firm to another national audit firm, five (11 percent) switched from a national audit firm to a non-national audit firm, five (11 percent) switched from a non-national audit firm to a national audit firm, and two (4 percent) switched among non-national firms. In contrast, 16 of the 22 no-fraud firms (73 percent) switching auditors changed from one national audit firm to another national audit firm, five (23 percent) switched from a national audit firm to a non-national audit firm, and one (4 percent) switched from a non-national firm to a national firm.

²⁵ The SEC commonly names an individual auditor in the AAER instead of naming the entire audit firm. For ease of discussion, we refer to the "audit firm" to mean the employer of the named auditor or the firm itself.

Table 25. Auditor Changes

Consequences for the Company and Individuals Involved

We attempted to identify consequences for companies engaging in fraudulent financial reporting once the fraud was revealed. First, we noted consequences described in the AAERs for each of the 347 fraud companies.

Table 26 presents information in the AAERs on the sanctions imposed by the SEC against both companies and individuals as a result of the fraud.²⁶ The most common sanctions were cease and desist orders, officer and director and SEC bars, and monetary penalties. A cease and desist order compels a party to stop engaging in certain behavior, and the recipient of such an order can be a company or an individual. A cease and desist order is the mildest sanction that the SEC can impose in a fraud case, and it was the most commonly employed sanction (89 percent of the fraud companies received a cease and desist order). Generally, the SEC issues a cease and desist order in addition to other sanctions. However, in 29 cases, the SEC issued a cease and desist order without issuing any other sanctions.

The SEC can bar an individual from serving as an officer or a director of a public company, either for a period of time or permanently. This is a severe sanction, as it seriously affects the economic situation of an individual receiving such a bar. In almost half of the fraud cases (47 percent), one or more individuals received an officer and director bar. In addition,

outside professionals (e.g., accountants, attorneys, etc.) can be barred from practicing before the SEC, either temporarily or permanently. In 46 percent of the fraud cases, one or more outside professionals were subject to an SEC bar.

SEC sanctions can involve monetary penalties, either fines or disgorgements. Fines can be levied against companies and individuals, and were imposed in 65 percent of the fraud cases. A disgorgement involves returning monies inappropriately received as a result of the fraud. For example, an individual might be required to disgorge a bonus received based on fraudulently reported income or the proceeds from a stock sale when the stock price was inflated as a result of the fraud. Disgorgements were ordered in 43 percent of the fraud cases.

Fines were imposed in **65%** of the cases, while disgorgements were imposed in **43%** of the cases.



²⁶ Frequencies of consequences reported in this section are inherently understated given that we were only able to identify consequences explicitly noted in an AAER or in business press articles. Given that the business press often does not cover smaller or otherwise less visible companies, there were likely to be many consequences that occurred that we were unable to identify for some of our sample firms.

Table 26. Consequences Based on AAER Information
(n = 347)

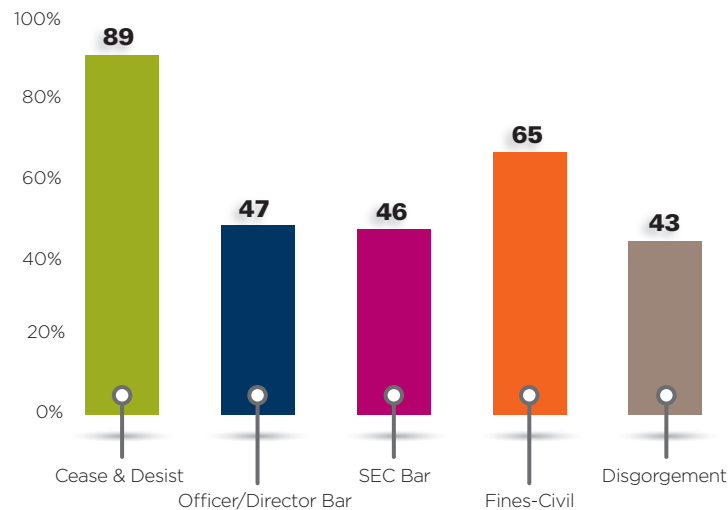


Table 27 presents information on the monetary penalties imposed by the SEC – for cases in which the dollar amounts were disclosed in the AAERs. The average fine imposed by the SEC was \$12.4 million, and the median was \$100,000 (maximum fine was \$750 million). The cumulative fines for

all 221 fraud cases imposed by the SEC totaled \$2.74 billion. The mean and median disgorgement amounts were \$18.1 million and \$195,000, respectively (maximum amount of a disgorgement was \$700 million). Cumulative disgorgements across all of the 146 fraud cases totaled \$2.65 billion.

Table 27. Fines and Disgorgements Based on AAER Information
(n = 347)

Description of Penalty	Number of Companies Identified	Cumulative Amount Paid by All Companies	Mean Amount Paid by a Single Company	Median Amount Paid by a Single Company	Maximum Paid
Fines and settlements	221	\$2.74 billion	\$12.4 million	\$100,000	\$750 million
Disgorgements	146	\$2.65 billion	\$18.1 million	\$195,000	\$700 million

Other Consequences for Companies

To identify other consequences to the fraud companies for engaging in fraudulent financial reporting, we performed extensive searches of electronic databases of business press articles appearing during the period beginning with the calendar year that coincides with the last year of the fraud and ending with the calendar year two years after the SEC issued the last AAER related to the fraud.

We also performed the search of business press articles for the sample of no-fraud companies. This allows us to determine whether the rate of subsequent consequences

was different for fraud companies relative to a similar set of companies not engaging in fraud during the same time periods.

Recall in our earlier analysis of board governance characteristics that we were able to generate a sample of 203 fraud and 203 similar no-fraud firms. As discussed in that section, we were unable to examine board governance variables for the full sample of 347 firms due to the lack of available proxy statements for some firms. For our business press searches, we were able to expand our sample to 311 fraud and 311 no-fraud firms (we were not able to identify a similar no-fraud company in 36 cases).

In addition to SEC sanctions (e.g., fines, disgorgements, cease and desist orders), companies can suffer other consequences either directly, or indirectly, as a result of the fraud. We examined the incidence of financial failure (bankruptcy, liquidation, etc.), stock exchange delisting, and material asset sales for the fraud companies and the comparable percentages for the no-fraud sample.

As shown in Table 28, 28 percent of the fraud companies failed (filed for bankruptcy, were liquidated, etc.) within two years of the latest AAER issued by the SEC. The comparable percentage for the no-fraud companies was 13 percent. The probability of bankruptcy or other failure for a fraud firm was statistically larger than for a no-fraud firm (p-value < 0.001). Similarly, fraud firms were significantly more likely than no-fraud firms to be involuntarily delisted from a stock exchange (p-value < 0.001). Almost half (47 percent) of fraud firms suffered by being delisted by a stock exchange, whereas only 20 percent of no-fraud firms were delisted during a similar time period. Finally, 62 percent of fraud

Fraud firms filed for **bankruptcy** or were delisted from a stock exchange significantly more often in the time period following the fraud than their counterpart no-fraud firms in that same time period.



companies compared to 31 percent of no-fraud companies engaged in a material asset sale (p-value < 0.001).

All of the above metrics clearly indicate that fraud firms were more likely to suffer adverse financial outcomes than no-fraud firms. These differences were likely due to the fact that companies that experienced operating difficulties chose to engage in fraud to mask these difficulties, and to the direct and indirect costs associated with fraud (e.g., legal fees, fines, investigations, reputation damage, loss of personnel, loss of customers, etc.).

Table 28. Other Consequences to Company^a

(n = 311)^b

Subsequent Consequences	Fraud Companies Affected	Percentage of Fraud Companies Affected	No-Fraud Companies Affected	Percentage of No-Fraud Companies Affected	p-value ^c
Bankrupt, liquidated, etc.	86	28%	39	13%	.001
Involuntary stock exchange delisting^d	147	47%	61	20%	.001
Material asset sales	193	62%	96	31%	.001

^a The consequences of the fraud were examined from the beginning of the last fraud year until two years after the end of the year of the last AAER related to the fraud. The occurrence of these events at the no-fraud companies was examined during the identical time period.

^b There were 311 fraud companies where a similar no-fraud company could be identified.

^c Tests of statistical differences were performed using Wilcoxon's signed rank test.

^d Includes revocation of a firm's registration with the SEC.

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

Stock Price Reaction

To further examine the effect of the fraud on the company, we examined the stock price reaction for two different dates related to the disclosure of the alleged financial statement fraud. First, we examined the stock price reaction to the initial disclosure of the fraud. Second, we examined the stock price reaction to the initial disclosure of an investigation by the SEC or the Department of Justice.

We identified the date of the initial disclosure of an alleged financial statement fraud by searching for the initial press disclosure of a potential accounting impropriety. We took this approach since the initial press disclosure of an alleged accounting impropriety may not specifically indicate that a fraud has occurred, given that in many instances an investigation has yet to be commenced. Because that initial disclosure may or may not suggest to the markets the

existence of a possible fraud, we identified a second date to measure stock market reactions. That date represents the date of the SEC's or Department of Justice's first public disclosure of an investigation.

We measured the stock reaction on these two different disclosure dates by calculating the abnormal stock returns using methodologies widely used in research to capture unique stock reactions to disclosures of new information to the capital markets. An abnormal stock return basically captures the portion of the change in stock price attributable to the company-specific news disclosed on that date and does not include normal changes for that firm's stock given changes in overall market conditions.²⁷

Initial Disclosure of Potential Accounting Improprieties

For each of the two different disclosure events described above, we measured the abnormal returns over three different days. First, we measured the abnormal return on the day prior to the initial disclosure of the fraud (referred to as Day -1). Measuring stock market reactions on the day prior to the date of disclosure captures any stock market reaction to potential leakage of information in the day prior to disclosure. Next, we measured the abnormal return on the day of disclosure (referred to as Day 0). Finally, we measured the abnormal return on the day following the date

of disclosure, which captures the stock price reaction on the next trading day following the date of disclosure (referred to as Day +1).

Table 29 provides information about the abnormal returns measured on each of these three days surrounding the first public disclosure of an alleged financial statement fraud. That table also shows the cumulative abnormal return for Days 0 and +1 on a combined basis, which is consistent with typical abnormal stock return research. The abnormal returns

Stock prices declined 17% on average (beyond normal market movement) across two days surrounding the initial disclosure of alleged fraud.



reported in Table 29 are shown in percentage form to provide an indication of the percentage change in stock price to the initial disclosure of alleged financial statement fraud.

As expected, the average abnormal returns for each of the three days and the cumulative two days (Days 0 and +1) surrounding the first public disclosure of an alleged fraud were negative. The p-values for each day indicate that all of the negative abnormal stock returns were highly statistically significant. The mean abnormal return on Day -1 was -1.4 percent, suggesting some market reaction to potential leakage of news of an alleged fraud.

Table 29. Abnormal Stock Returns Surrounding First Public Disclosure of Potential Accounting Irregularities

	Percentage Abnormal Stock Return			
	Day -1 (n=221) ^a	Day 0 (n=213) ^a	Day +1 (n=198) ^a	Days 0 and +1 (n=215) ^a
Mean	-1.4%	-10.0%	-7.3%	-16.7%
Standard deviation	.07	.19	.17	.23
1st quartile	-2.5%	-17.2%	-12.6%	-28.6%
Median	-.5%	-3.3%	-2.2%	-11.1%
3rd quartile	1.4%	.4%	1.5%	-1.7%
t-statistic	-3.21	-23.19	-16.89	-27.25
p-value	.001	.0001	.0001	.0001

^a Of the 347 fraud firms, stock price information was not provided for 73 firms in the CRSP database, and we were unable to identify a unique date of the public disclosure of the potential accounting irregularity for 15 additional firms. Finally, stock price information for some of the days (-1, 0, or +1) was missing for between 38 and 61 firms, depending on the date of interest. Thus, the number of firms for each of the measurement dates differed slightly.

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

²⁷ We calculated abnormal returns using the Center for Research in Security Prices (CRSP) database and the Eventus program, using the market model with an equally weighted index consistent with prior research methodologies (see DeFond et al. (2007) and MacKinlay (1997)). We estimated the market model parameters using a 120-day estimation window consistent with prior research methodologies (see Palmrose et al. 2004). Given the small size of some of the fraud companies, firms were retained in the sample if 30 days or more of stock returns were available during the 120-day estimation window.

The mean stock price reaction on the day of disclosure (Day 0) jumped to -10.0 percent, followed by an additional -7.3 percent return on Day +1. The cumulative average negative abnormal return of -16.7 percent on Days 0 and +1 indicates an abnormal stock price decline of 16.7 percent over the two-day period surrounding the initial news of fraudulent financial reporting.

Initial Disclosure of SEC/Department of Justice Investigation

Table 30 provides information about the abnormal stock returns for the three days (-1, 0, and +1) surrounding the first public disclosure of a governmental investigation of the potential accounting improprieties, whether that investigation was commenced by the SEC or by the U.S. Department of Justice. The average abnormal stock return was -0.5 percent on Day -1, but this was not statistically significant, suggesting that the announcement of a governmental investigation did not leak into the market before the investigation was announced.

Stock prices declined 7% on average (beyond normal market movement) over the two-day period surrounding announcement of an SEC or Department of Justice investigation about alleged financial statement fraud.



However, the mean abnormal returns on day 0 and +1 were -4.9 percent and -2.5 percent, respectively, which were both statistically significant. Thus, the disclosure of a government investigation of alleged financial statement fraud resulted in an average abnormal stock price decline over a two-day period of 7.3 percent.

It is interesting to note that these stock price declines were smaller in magnitude than those surrounding the initial press disclosure of the potential accounting improprieties.

Nevertheless, the announcement of a governmental investigation, while not typically providing the initial disclosure of the potential accounting improprieties, did provide incremental information to the market. The market may have reacted to the realities of costs associated with responding to a governmental investigation and to the adverse reputational consequences for the firm.

Table 30. Abnormal Stock Returns Surrounding First Public Disclosure of SEC or Department of Justice Investigation

	Percentage Abnormal Stock Return			
	Day -1 (n=142) ^a	Day 0 (n=142) ^a	Day +1 (n=140) ^a	Days 0 and +1 (n=143) ^a
Mean	-.5%	-4.9%	-2.5%	-7.3%
Standard deviation	.09	.13	.11	.16
1 st quartile	-1.5%	-8.0%	-6.3%	-13.6%
Median	-.2%	-2.2%	-1.2%	-4.0%
3 rd quartile	1.6%	.5%	1.9%	-.3%
t-statistic	-1.09	-10.29	-5.39	-10.96
p-value	.28	.0001	.0001	.0001

^a Of the 347 fraud firms, stock price information was not provided for 73 firms in the CRSP database, and we were unable to identify a unique date of the public disclosure of the SEC's or Department of Justice's investigation for 78 firms. Finally, stock price information for some of the days (-1, 0, or +1) was missing for between 53 and 56 firms, depending on the date of interest. Thus, the number of firms for each of the measurement dates differed slightly.

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

Other Consequences for Individuals

In addition to SEC sanctions (e.g., fines, disgorgements, SEC officer and director bars, etc.) described earlier, individuals involved with a fraud can suffer other consequences in the labor market. We examined turnover (including the specific reason for the turnover) for the CEO, CFO, chairman of the board, and other board members. In addition, we considered criminal indictments and convictions of the CEO and CFO. We examined consequences of the fraud for individuals that occurred between the beginning of the last fraud year through two years after the year of the last AAER related to the fraud.

Table 31 presents this information. Because we captured information about management changes and other events, it was important that we contrasted the experience of fraud firms with a similar set of no-fraud firms. Thus, Table 31 shows results for both fraud and no-fraud firms. We tracked similar consequences for no-fraud firms over the same time frame used for their related fraud firms. We were able to find similar no-fraud firms for 311 of the 347 fraud firms.

In most cases, turnover occurred for the CEO and CFO positions of companies committing fraud. Eighty-two percent of the CEOs and 80 percent of the CFOs of fraud firms experienced turnover. The comparable percentages for the no-fraud firms were 47 percent for CEOs and 49 percent for CFOs, significantly lower ($p\text{-value} = 0.001$). A large majority of the CEO and CFO turnover was due to resignations, although we cannot observe how many of these resignations were forced. Seven percent of the fraud companies experienced CEO terminations, while 59 percent experienced CEO resignations. In contrast, during the same time period no-fraud firms terminated two percent of their CEOs, while 21 percent of the no-fraud firm CEOs resigned. A similar pattern existed for CFO turnover at the fraud and no-fraud companies. That suggests that fraud revelations often result in significantly greater management changes.

80% or more of CEOs and CFOs turned over following the disclosure of the alleged fraud.

Twenty-one percent (17 percent) of the fraud CEOs (CFOs) were criminally indicted, whereas virtually none of the no-fraud CEOs or CFOs was criminally indicated over the same time periods (statistically significant ($p\text{-value} = 0.001$)). For fraud firms, 64 percent of the CEOs criminally indicted were convicted (41/64), whereas 75 percent of the CFOs criminally indicted were convicted (39/52). This difference likely reflects the greater difficulty that CFOs have in denying that they had any knowledge of the fraud given the CFO's responsibility for the firm's finances.

For fraud firms, approximately two-thirds of board chairs left the board, whereas only 25 percent of board chairs left the boards of no-fraud firms, which is significantly lower ($p\text{-value} = 0.001$). In addition, 68 percent of fraud firms experienced turnover of at least one other board member as compared to 40 percent of no-fraud firms ($p\text{-value} = 0.001$). As

was the case with CEO and CFO turnover, resignation was the most common reason given for the departure. Fifteen percent (32 of 211 instances) of the board chair turnover at fraud firms was due to the board chair being terminated, whereas only 11 percent (9 of 79 instances) of the board chair turnover at no-fraud firms was due to a termination. Also, if there was turnover of the CEO, CFO, or board chair, the board chair was most likely to be fired. Turnover of other board members at both fraud and no-fraud firms was overwhelmingly due to resignations, but terminations of other board members occurred in six percent of the fraud firms. We identified only one instance where a non-chair board member at a no-fraud firm was terminated.

Approximately 20% of CEOs and CFOs of fraud companies were criminally indicted, and about two-thirds of those indictments ultimately led to criminal convictions.



Table 31. Consequences to Individuals

(n = 311)

Subsequent Consequences ^a	Number of Fraud Firms Affected	Percentage of Fraud Firms Affected	Number of No-Fraud Firms Affected	Percentage of No-Fraud Firms Affected	p-value ^b
CEO turnover:	255	82%	147	47%	.001
Firing/dismissal	23	7%	5	2%	
Resignation	185	59%	66	21%	
Retirement	17	6%	24	8%	
Another position	14	5%	17	5%	
Other	16	5%	35	11%	
CFO turnover:	250	80%	153	49%	.001
Firing/dismissal	25	8%	3	1%	
Resignation	157	51%	64	21%	
Retirement	14	4%	18	6%	
Another position	39	12%	55	18%	
Other	15	5%	13	4%	
CEO criminal indictment	64	21%	1	< 1%	.001
CEO criminal conviction	41	13%	1	< 1%	.010
CFO criminal indictment	52	17%	1	< 1%	.001
CFO criminal conviction	39	13%	0	0%	.010
Chairman of board turnover:	211	68%	79	25%	.001
Firing/dismissal	32	10%	9	3%	
Resignation	147	47%	48	15%	
Retirement	16	5%	12	4%	
Another position	4	1%	0	0%	
Other	12	4%	10	3%	
Other board turnover:	212	68%	123	40%	.001
Firing/dismissal	19	6%	1	< 1%	
Resignation	177	57%	103	33%	
Retirement	4	1%	7	2%	
Another position	2	1%	5	2%	
Other	10	3%	7	2%	

^a The consequences of the fraud for individuals were examined from the beginning of the last fraud year until two years after the year of the last AAER related to the fraud. The occurrence of these events for individuals at the no-fraud firms was examined during the identical time period.

^b Tests of statistical significance were performed using the Wilcoxon's signed rank test.

Note: A p-value that is less than 0.10 indicates that the difference between fraud and no-fraud firms was statistically significant (two-tailed).

IV. Conclusion

We believe that our analysis of fraudulent financial reporting from 1998-2007 reveals several key messages. First, the financial statement fraud problem still exists and warrants continued attention. The SEC alleged that 347 public companies committed fraud over the ten-year period 1998-2007. The magnitude of individual fraud cases and the size of fraud companies both increased markedly from COSO's 1999 report. The major accounting scandals of the early 2000s involved larger frauds and larger companies, which contributed to the nearly \$120 billion in cumulative misstatement or misappropriation across all frauds in the ten-year period. Because the number of frauds examined in this study involving financial reporting periods after the passage of SOX is very limited, further research is needed to assess the effects of SOX in addressing fraud.

Second, the SEC continues to name individuals in the C-suite for some alleged involvement in the fraud, even more so than in the past. During 1998-2007, the CEO and/or CFO were named in an AAER in nearly 90 percent of the cases. Boards, auditors, and regulators need to seek additional tools to assess management integrity and susceptibility to fraud pressures. Research about leadership and organizational behavior may help to provide insights about potential drivers of financial statement fraud.

Third, revenue fraud continues to emerge as the leading type of fraud, now accounting for over 60 percent of SEC fraud cases. Additional research into revenue fraud methods, especially industry-specific studies, may reveal new ways to address this risk area.

Fourth, board governance characteristics often do not differ meaningfully between fraud and no-fraud firms. These characteristics have been the focus of recent regulation, thus reducing or even eliminating previous fraud/no-fraud differences. Future research on governance processes and the interaction of various governance mechanisms may be needed to identify less-observable governance differences associated with fraudulent financial reporting.

Fifth, fraud companies are twice as likely to change auditors as no-fraud firms between the last clean financial statements and the last fraudulent financial statements. More research is needed to fully understand the relation between auditor change and fraudulent financial reporting.

Finally, the consequences of fraud are severe for individuals and companies. Individuals may face civil fines, SEC bars, disgorgement, and criminal prosecution. Fraud companies experience significant negative abnormal stock price declines, and they face bankruptcy, delisting, and material asset sales at much higher rates than do no-fraud firms.

Call for Further Research and Analysis

COSO sponsored this study, *Fraudulent Financial Reporting: 1998-2007*, to provide a comprehensive analysis of fraudulent financial reporting occurrences investigated by the U.S. Securities and Exchange Commission between January 1998 and December 2007. This study updates our understanding of fraudulent financial reporting since COSO's 1999 issuance of *Fraudulent Financial Reporting: 1987-1997*.

COSO's mission is to provide thought leadership through the development of comprehensive frameworks, guidance, and research on enterprise risk management, internal control, and fraud deterrence. COSO's efforts are designed to improve organizational performance and governance and to reduce the extent of fraud in organizations.

COSO hopes that those involved in financial reporting will carefully consider the results reported in this study and recommit their efforts to improve the prevention, deterrence, and detection of fraudulent financial reporting. While several insights from this study are discussed within this document, more research is needed to better understand fraudulent financial reporting. COSO encourages other thought leaders to creatively explore new and different ways to reduce occurrences of fraudulent financial reporting.

COSO, 2010



V. Authors

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Note: Beasley, Carcello, and Hermanson are co-authors of the preceding COSO-sponsored study, *Fraudulent Financial Reporting: 1987-1997, An Analysis of U.S. Public Companies*.

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Notes



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